

Pompe centrifughe orizzontali ad aspirazione assiale PN 10 con supporto
Secondo norma europea EN 733

Horizontal end-suction centrifugal pumps PN 10 with bearing bracket
In accordance with european standard EN 733

Horizontale Kreiselpumpen mit axialem Eintritt PN 10 mit Lagerträger
Nach europäischer Norm EN 733

Pompes centrifuges horizontales à aspiration axiale PN 10 avec palier
Selon la norme européenne EN 733

Bombas centrifugas horizontales con aspiración axial PN 10 y soporte
Según norma europea EN 733

Horizontal axial-sugs centrifugalpumpar PN 10 med lagerbock
Enligt Europastandard EN 733

PN 10 horizontale end-suction centrifugaal pompen met lagerstoel
Conform Europese norm EN 733

Всасывающие горизонтальные центробежные насосы PN10 с опорой
Разработаны в соответствии с европейским стандартом EN 733

采用欧洲EN733标准的带轴承支架的卧式端吸离心泵 (PN10)

N, N4

ISTRUZIONI ORIGINALI PER L'USO

OPERATING INSTRUCTIONS

BETRIEBSANLEITUNG

INSTRUCTIONS POUR L'UTILISATION

INSTRUCCIONES DE USO

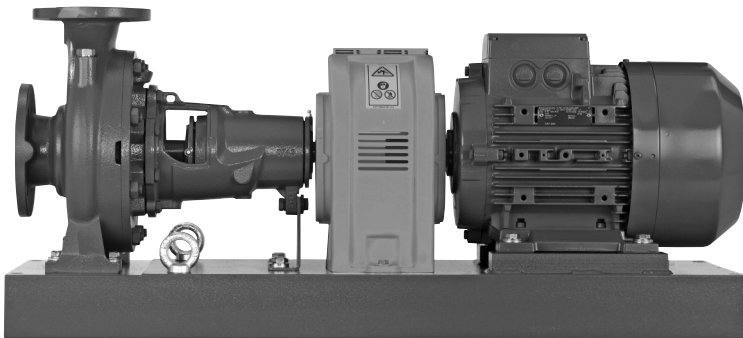
DRIFT/INSTALLATIONSANVISNINGAR

BEDIENINGSVOORSCHRIFT

Инструкции по эксплуатации

使用说明书

Pagina	2	Italiano
Page	11	English
Seite	20	Deutsch
Page	29	Français
Página	38	Español
Sidan	47	Svenska
Pagina	56	Nederlands
Стр.	65	Русский
页码	74	中文



 **calpeda**[®]

CE

SUMMARY

1	General information	11
2	TECHNICAL DESCRIPTION	12
3	TECHNICAL FEATURES	12
4	SAFETY	12
5.	TRANSPORTATION AND HANDLING	13
6.	INSTALLATION	13
7.	START-UP AND OPERATION	16
8	MAINTENANCE	16
9	DISPOSAL	18
10	SPARE PARTS	18
11	DESIGNATION OF PARTS	18
12	TROUBLESHOOTING	19
13	ANNEXES	82
13.1	Dimensions and weights	82
13.2	Section	85
	Copy of the declaration of conformity	88

1 GENERAL INFORMATION

Before using the product carefully read the information contained in this instruction manual, the manual should be kept for future reference.

Italian is the original language of this instruction manual, this language is the reference language in case of discrepancies in the translations.

This manual is part of the essential safety requirement and must be retained until the product is finally de-commissioned.

The customer, in case of loss, can request a copy of the manual by contacting Calpeda S.p.A. or their agent, specifying the type of product data shown on the label of the machine (see 2.3 Marking)

Any changes, alterations or modifications made to the product or part of it, not authorized by the manufacturer, will revoke the "CE declaration" and warranty.

This appliance should not be operated by children younger than 8 years, people with reduced physical, sensory or mental capacities, or inexperienced people who are not familiar with the product, unless they are given close supervision or instructions on how to use it safely and are made aware by a responsible person of the dangers its use might entail.

Children must not play with the appliance.

It is the user's responsibility to clean and maintain the appliance. Children should never clean or maintain it unless they are given supervision.

Do not use in ponds, tanks or swimming pools or where people

may enter or come into contact with the water.

Read carefully the installation section which sets forth:

- The maximum permissible structural working pressure (chapter 3.1).
- The type and section of the power cable (chapter 6.5).
- The type of electrical protection to be installed (chapter 6.5).

GB

1.1 Symbols

To improve the understanding of the manual, below are indicated the symbols used with the related meaning.



Information and warnings that must be observed, otherwise there is a risk that the machine could damage or compromise personnel safety.



The failure to observe electrical information and warnings, could damage the machine or compromise personnel safety.



Notes and warnings for the correct management of the machine and its parts.



Operations that could be performed by the final user. After carefully reading of the instructions, is responsible for maintenance under normal conditions. They are authorized to affect standard maintenance operations.



Operations that must be performed by a qualified electrician. Specialized technician authorised to affect all electrical operations including maintenance. They are able to operate with in the presence of high voltages.



Operations that must be done performed by a qualified technician. Specialized technician able to install the device, under normal conditions, working during "maintenance", and allowed to do electrical and mechanical interventions for maintenance. They must be capable of executing simple electrical and mechanical operations related to the maintenance of the device.



Indicates that it is mandatory to use individual protection devices - hand protection.



Indicates that it is mandatory to use individual protection devices - eye protection.



Operations that must be done with the device switched off and disconnected from the power supply.



Operations that must be done with the device switched on.

1.2 Manufacturer name and address

Manufacturer name: Calpeda S.p.A.
 Address: Via Roggia di Mezzo, 39
 36050 Montorso Vicentino - Vicenza / Italia
 www.calpeda.it

1.3 Authorized operators

The product is intended for use by expert operators divided into end users and specialized technicians. (see the symbols above).

i It's forbidden, for the end user, carry out operations which must be done only by specialized technicians. The manufacturer declines any liability for damage related to the non-compliance of this warning.

1.4 Warranty

For the product warranty refer to the general terms and conditions of sale.

i The warranty covers only the replacement and the repair of the defective parts of the goods (recognized by the manufacturer).

The Warranty will not be considered in the following cases:

- Whenever the use of the device does not conform to the instructions and information described in this manual.
- In case of changes or variations made without authorization of the manufacturer.
- In case of technical interventions executed by a non-authorized personnel.
- In case of failing to carry out adequate maintenance.

1.5 Technical assistance

Any further information about the documentation, technical assistance and spare parts, shall be requested from: Calpeda S.p.A. (paragraph 1.2).

2 TECHNICAL DESCRIPTION

Horizontal end-suction centrifugal pumps PN 10 with bearing bracket.

N, N4 pumps (with nominal duty points and main dimensions in accordance with EN 733 are intended for use with standard electric motors in IM B3 construction form (IEC 34-7, IEC 72), connected by means of a baseplate and driven by a flexible coupling.

Pump casing with axial suction and radial delivery on top. N.: version with pump casing and lanter bracket in cast iron.

B-N.: version with pump casing and lanter bracket/casing cover in bronze. (the pumps are supplied fully painted).

2.1 Intended use

Standard construction

For clean liquids, without abrasives, which are non-aggressive for the pump materials (contents of solids up to 0.2%).

Liquid temperature from -10 °C to +90 °C.

Special construction

For clean liquids, without abrasives, which are non-aggressive for the pump materials (contents of solids up to 0.2%) with the following characteristics:

- Cooling mixtures with temperatures from 0 to -30 ° C.
- Water with temperatures from 90 ° C to 140 ° C.
- Oil with temperature up to 200 ° C and / or maximum density of 30 cSt.

2.2 Improper use

The device is designed and built only for the purpose described in paragraph 2.1.

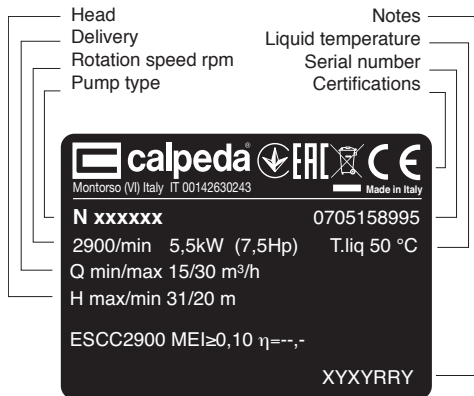
! Improper use of the device is forbidden, as is use under conditions other than those indicated in these instructions.

Improper use of the product reduces the safety and the efficiency of the device. Calpeda shall not be responsible for failure or accident due to improper use.

2.3 Marking

The following picture is a copy of the name-plate that is on the external case of the pump.

Example plate pump



3 TECHNICAL FEATURES

3.1 Technical data

Dimensions and weight (paragraph 13.1).

Nominal speed 1450/1750/2900/3450 rpm

Maximum permissible rotation speed: see table on page 86.

Supply voltage / Frequency:

- up to 240V 1~ 50/60 Hz

- up to 480V 3~ 50/60 Hz

Check that the mains frequency and voltage correspond to the electrical characteristics shown on the indicator plate.

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

Rated motor power

N (2900 1/min) up to	kW:	2,2	7,5	30	75
N4 (1450 1/min) up to	kW:	7,5	30	75	
Sound pressure dB (A)	max:	70	80	85	90
Starts per hour	max:	60	40	20	10

Maximum permissible working pressure up to 100 m (10 bar), 160 m (16 bar) pump in ductile iron.

Maximum suction pressure: PN (Pa) - Hmax (Pa).

3.2 Operating conditions

Installation in well ventilated location protected from the weather, with a maximum ambient temperature of 40 °C.

4 SAFETY

4.1 General provisions

Before using the product it is necessary to know all the safety indications.

! Carefully read all operating instructions and the indications defined for the different steps: from transportation to disposal.

The specialized technicians must carefully comply with all applicable standards and laws, including local regulations of the country where the pump is sold.

The device has been built in conformity with the current safety laws. The improper use

could damage people, animals and objects. The manufacturer declines any liability in the event of damage due to improper use or use under conditions other than those indicated on the name-plate and in these instructions.



Follow the routine maintenance schedules and the promptly replace damaged parts, this will allow the device to work in the best conditions.

Use only original spare parts provided from Calpeda S.p.A or from an authorized distributor.



Don't remove or change the labels placed on the device.

Do not start the device in case of defects or damaged parts.



Maintenance operations, requiring full or partial disassembly of the device, must be done only after disconnection from the supply.

4.2 Safety devices

The device has an external case that prevents any contact with internal parts.

4.3 Residual risks

The appliance, designed for use, when used in-line with the design and safety rules, doesn't have residual risks.

4.4 Information and Safety signals

For this kind of product there will not be any signals on the product.

4.5 Individual protection devices

During installation, starting and maintenance it is suggested to the authorized operators to consider the use of individual protection devices suitable for described activities.

During ordinary and extraordinary maintenance interventions, safety gloves are required.

Signal individual protection device



HAND PROTECTION

(gloves for protection against chemical, thermal and mechanical risks).



EYE PROTECTION

(glasses for protection from chemical, thermal and biological risks)

5. TRANSPORTATION AND HANDLING

The product is packed to maintain the content intact. During transportation avoid to stack excessive weights. Ensure that during the transportation the packed cannot move.

The transport vehicles must comply, for the weight and dimensions, with the chosen product (see paragraph 13.1 dimensions and weights).

5.1 Handling

Handle with care, the packages must not receive impacts.

Raise the pump-motor unit slowly (fig.1), making sure it does not move from side to side in an uncontrolled way, to avoid the risk of imbalance and tipping up

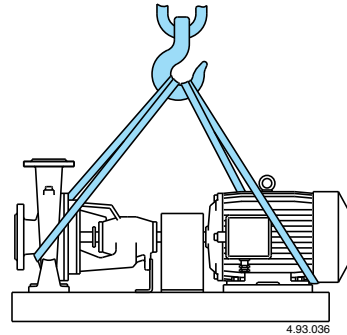


Fig. 1 Sling with ropes for lifting the pump-motor unit.

6 INSTALLATION

6.1 Dimensions

For the dimensions of the device refer to the annex "Dimensions" (paragraph 13.1 Annexes).

6.2 Ambient requirements and installation site dimensions

The customer has to prepare the installation site in order to guarantee the right installation and in order to fulfill the device requirements (electrical supply, etc...).

The place where the device will be installed must fulfill the requirements in the paragraph 3.2.

It's Absolutely forbidden to install the machine in an environment with potentially explosive atmosphere.

6.3 Unpacking

Inspect the device in order to check any damages which may have occurred during transportation.

Package material, once removed, must be discarded/recycled according to local laws of the destination country.

Raise the pump-motor unit slowly (see paragraph 5.1 fig.1), making sure it does not move from side to side in an uncontrolled way, to avoid the risk of imbalance and tipping up.

6.4. Installation

These pumps must be installed with the rotor axis horizontal and feet downwards.

Place 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.

6.4.1. Foundation

The smaller units are mounted on a **single-piece, channel-steel baseplate** with a high degree of torsional strength.

Whith this type of construction a foundation is not indispensable, in the case of units of limited weight and when light loads are expected through pipelines. However, a raised foundation will facilitate draining of pump casing and will provide extra height for safety

in the case of a risk of flooding. When the smaller units, positioned on single-piece, metal baseplates, are placed directly on a floor surface, only the anchor bolts need to be imbedded in concrete (fig. 2).

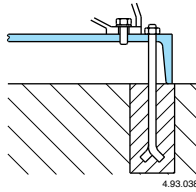


Fig. 2 Foundation for unit mounted on single-piece, channel-steel baseplate.

For the larger units and, in particular for those mounted on a **welded steel-section baseplate**, it is necessary to provide for a foundation base in reinforced concrete to withstand the load and strain derived from the unit and from the pipes, to maintain the **alignment** and to avoid vibration of the unit (see also sections 6.4.3, 6.4.4.).

Position the unit and provide support for the baseplate with separators or wedges to obtain proper horizontal alignment with a spirit-level, leaving between the baseplate and the rough scarfed surface of the foundation a clearance of 1-2 inches (25-50mm) for the grouting.

With the welded metal baseplates, it is sufficient for the grout to rise a little above the lower part to allow for imbedding of the anchor bolts and to provide a stable base with uniform distribution of the load over the support surface of the baseplate (fig. 3).

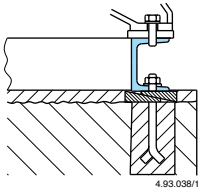


Fig. 3 Foundation for unit mounted on welded, steel-section baseplate.

Tighten uniformly all anchor bolts when the grout has become solid (normally at least 48 hours after pouring).

6.4.2. Pipe-work

The inside diameter of pipes depends on the delivery required.

The diameter should be determined so that the liquid flow velocity will not exceed 1.5 m/sec in the suction pipe and 3 m/sec in the delivery pipe. In any case, pipe diameters must never be smaller than the diameter of pump connection ports.

Minimum internal diameters (DN) of suction pipes for different capacities (Q) are indicated in the table below.

DN	mm	50	65	80	100	125	150	200	250	300
Q _{max}	m ³ /h	10,5	19	28,8	45	75	108	215	350	508

The **suction pipe** must be perfectly air-tight and lead upwards so as to **avoid formation of air pockets**.

If a suction gate valve is mounted, the handwheel must be positioned horizontally.

Use an eccentric transition piece to join the suction connection with a horizontal pipe of larger diameter (fig. 4).

For suction operation, a **foot valve with strainer** (constantly immersed) must be fitted.

For suction from a storage tank, a **check valve** must be fitted. For operation with positive suction head, a gate valve must be fitted.

Follow local specifications if network pressure is to be increased.

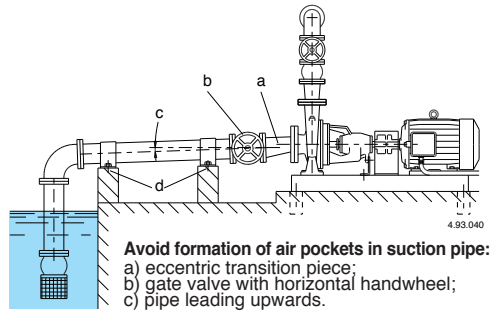


Fig. 4 Connection of pipes.

Fit a gate valve into the **delivery pipe** to adjust delivery, head and absorbed power. Install a pressure gauge.

When the geodetic head at delivery is above 15 m, insert a check valve between the pump and gate valve to protect the pump against water hammering.

6.4.3. Connecting the pipe-work

ATTENTION: The pipes connected to the pump should be secured to rest clamps so that they do not transmit stress, strain or vibrations to the pump.

Pipes must be anchored on their own supports (fig. 4). Pipes must be modified if they do not correspond exactly with the position of connections to avoid transmission of stress to the pump.

Position correctly any compensators (flexible expansion joints) for absorption of expansion or vibration.

ATTENTION: forces and moments acting on the pump flanges due to pipe loads may cause misalignment of pump and driver shafts, deformation and overstressing of pump casing, or overstressing of the fixing bolts between pump and baseplate.

For connection of pipes to the flanged connection ports, use standardized, circular counter-flanges (type PN 10 or PN 16 up to DN 150).

During installation, make sure the gaskets between flanges do not protrude inside pipes.

Make sure the inside of the pipe is clean before connection.

In a new pipeline (especially when a suction strainer is not fitted), insert a conical-type temporary strainer on the suction side of the pump to prevent solids (e.g. welding slags and scale) from entering the pump. It is advisable to use a strainer with 20-12,5 mesh (number of openings per linear inch) and a free area at least three times greater than the pipe inlet area (fig. 5).

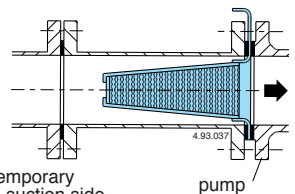


Fig. 5 Conical-type temporary strainer on the suction side.

6.4.4. Alignment of pump-motor unit

The pump-motor units positioned on a baseplate and with a flexible coupling are aligned before leaving the factory.

The pump and motor assembly can lose alignment during shipping. Final alignment must be accomplished in the field.

! After installation is completed with tightening of anchor bolts and connection of pipes, **alignment of the coupling must be rechecked before starting the pump.** If necessary, the unit must be re-aligned.

6.4.5. Pump motor unit with N-EUPEX coupling

Remove the coupling guard and with a dial indicator or thickness gauge, make sure the distance (3-4 mm) between the halfcouplings is the same along the entire periphery.

With a dial indicator or straight edge, check the alignment (coaxiality) of the external part of the halfcouplings.

Control procedure must be performed at 4 diametrically opposed, equidistant points on the periphery (fig. 6A).

straight edge

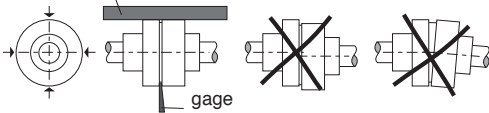


Fig. 6A Alignment of coupling.

For adjustment, loosen or tighten the screws where necessary in order to move the position of the support feet on the baseplate and to add calibrated plates between the feet and baseplate wherever these may be required.

Make sure the rotor turns freely when moved by hand.

The alignment must be rechecked once the unit attains its operating temperature.

While the foundation is still new and the unit has not been fully tested under all operating conditions, verification of alignment must be repeated at regular intervals and, if necessary, alignment procedure must be carried out again.

6.4.6. Pump motor unit with Rex-Viva coupling

Remove the coupling guard, loosen the screws and remove the half-couplings.

With a dial indicator or straight edge, check the coaxial alignment of the hubs fixed at motor shaft and pump shaft.

Control procedure must be performed at 4 diametrically opposed, equidistant points on the periphery (fig. 6B).

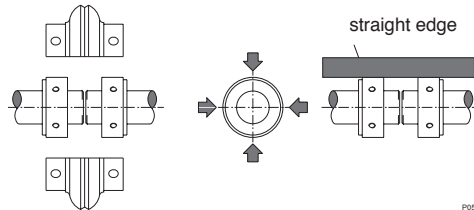


Fig. 6B Alignment of coupling.

For adjustment, loosen or tighten the screws where necessary in order to move the position of the support feet on the base-plate and add calibrated plates

between the feet and base-plate wherever these may be required.

Reassemble the half-couplings following this sequence:

- Insert the two central screws of the first half-coupling.
- Insert and tighten the two central screws of the second half-coupling at the required torque.
- Tighten the two central screws of the first half-coupling at the required torque.
- Insert the two lateral screws of the first half-coupling.
- Insert and tighten the two lateral screws of the second half-coupling at the required torque.
- Tighten the two lateral screws of the first half-coupling at the required torque
- Repeat the sequence for the last screws.

Tighten the screws at the torque advised by the manufacturer on the coupling instructions.

Make sure the rotor turns freely when moved by hand. The alignment must be rechecked once the unit attains its operating temperature.

While the foundation is still new and the unit has not been fully tested under all operating conditions, verification of alignment must be repeated at regular intervals and, if necessary, alignment procedure must be carried out again.

ATTENTION: poor baseplate installation and misalignment of units or faulty connection of pipes will cause vibration and early wear of elastic coupling inserts, bearings, the seal and other internal parts (see also sections 6.4.1., 6.4.3., 6.4.5.).

6.4.7. Extra support for bearing housing

In order to reduce problems caused by expansion or residual external stress in pipes, **N, N4 pumps** may be fitted with a support and anchoring foot which will help to impede variation of alignment to an extent that might cause damage.

The recommended dimensions are indicated (in mm) in fig. 7.

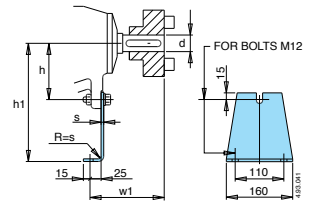



Fig. 7 Optional support foot.

Dimensions EN 733				
d	w1	h1	h	s
24	100	112÷180	77	4
32	130	180÷250	97	6
42	160	280÷315	132	6

During alignment operations, before connection of pipe, leave support foot screws untightened so as to avoid stress by pipe strain or shifting of axis height.

The support foot must be placed on the base surface and brought into contact with the support itself only after completion of alignment procedure, which must be re-checked after tightening the screws between pump casing feet and baseplate.

First tighten the screws joining the foot and the base and then, the screw between the foot and the support. In this way, alignment will not be altered by the support foot.

 After alignment procedure, **before starting the pump attach the coupling guard** (safety protection against accidental contact).

6.4.8. Oil-filler (on request)

The installation of a constant level oil-filler (as option) permits a correct lubricating oil level in order to avoid recurrent fills.

Check that the oil filler is installed in vertical position.

Filling indications:


- 1) Fill the horizontal part of the oil filler up to the upper level of the inner hole
- 2) Completely fill the tank and close it.

ATTENTION: It is possible that during the handling phases, for its nature, the oil filler could have some small oil leakages.

The subsequent fills must be made pouring the oil directly into the ampoule and not through the oil-filler elbow or oil-filler support plug.

6.5 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 \oplus marking.

Compare the frequency and mains voltage with the name-plate data and connect the supply conductors to the terminals in accordance with the nameplate specifications and the operating instructions (if available) of the motor.

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

If the terminal box is provided with an inlet gland, use a flexible power supply cord of the H07 RN-F type with section of cable not less than (par. 13.3 TAB 1).

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

With a three-phase motor install an overload protection device appropriate for the rated current of the pump.

6.6 Operation with frequency converter

Adjust the frequency converter so that the limiting values of min. 25 Hz and max. f_n Hz will not be exceeded.

7 STARTUP AND OPERATION

7.1 Preliminary checks before start-up of the pump

Do not start-up the device in case of damaged parts.

7.2 First starting



ATTENTION: never run the pump dry. Start the pump

after filling it completely with liquid.

When the pump is located above the water level (suction lift operation) fill the suction pipe and the pump through the priming hole Fig. 8.

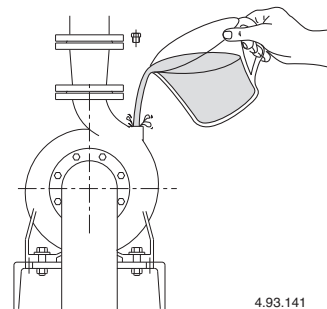


Fig. 8 Filling.

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

Check that the shaft turns by hand.

With a three-phase motor check that the direction of rotation is as shown by the arrow on the pump casing, otherwise, disconnect electrical power and reverse the connections of two phases.

With a suction lift operation it may be necessary to wait a few minutes for the pump to prime.

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.



Do not touch the fluid when its temperature is higher than 50 °C.



Burn hazard. Due to high temperature of the fluid, the pump casing and the motor may reach temperatures higher than 50°C.



DO NOT TOUCH these parts unless with suitable protective devices or wait and make sure they have completely cooled.

7.2.1 Starting Pumps with packing seal

First loosen the gland slightly so that the seal is decompressed.

7.3 Switch off of the pump



The appliance must be switch off every time there are faults. (see troubleshooting).

The product is designed for a continuous duty, the switch off is performed by disconnecting the power supply by means the expected disconnecting devices. (see paragraph "6.5 Electrical connection").

8 MAINTENANCE

Before any operations it's necessary to disconnect the power supply.

If required ask to an electrician or to an expert technician.



Every maintenance operations, cleaning or reparation executed with the electrical system under voltage, it could cause serious injuries to people.



If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

In case of extraordinary maintenance, or maintenance operations that require part-removing, the operator must be a qualified technician able to read schemes and drawings.

It is suggest to register all maintenance operation executed.



During maintenance keep particular attention in order to avoid the introduction of small external parts, that could compromise the device safety.



It is forbidden to execute any operations with the direct use of hands. Use water-resistant, anti-cut gloves to disassemble and clean the filter or in other particular cases.



During maintenance operations external personnel is not allowed.

Maintenance operations that are not described in this manual must be made only by special personnel authorized by Calpeda S.p.A.

For further technical information regarding the use or the maintenance of the device, contact Calpeda S.p.A.

8.1 Routine maintenance (Standard construction)



Before every maintenance operations disconnect the power supply and make sure that the device could not accidentally operate.



Burn hazard. Due to high temperature of the fluid, the pump casing and the motor may reach temperatures higher than 50°C.



DO NOT TOUCH these parts unless with suitable protective devices or wait and make sure they have completely cooled.

When the pump remains inactive it must be emptied completely if there is a risk of freezing Fig. 9.

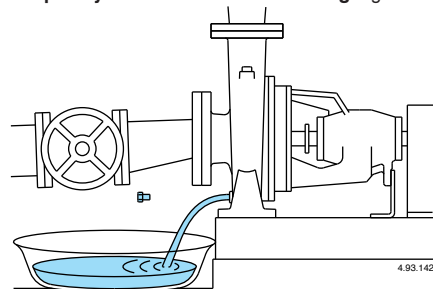


Fig. 9 Draining.

Before restarting the unit, check that the shaft is not jammed and fill the pump casing completely with liquid.

8.1.1 Routine maintenance (Special construction)



Before every maintenance operations disconnect the power supply and make sure that the device could not accidentally operate.



Burn hazard. Due to high temperature of the fluid, the pump casing and the motor may reach temperatures higher than 50°C.



DO NOT TOUCH these parts unless with suitable protective devices or wait and make sure they have completely cooled.

When the pump remains inactive it must be emptied completely if there is a risk of freezing Fig. 9.

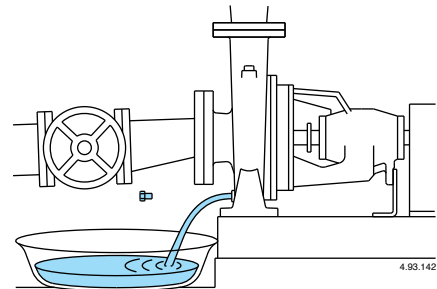


Fig. 9 Draining.

Before restarting the unit, check that the shaft is not jammed and fill the pump casing completely with liquid.

8.2. Pumps with mechanical seal

Mechanical seals do not require maintenance.

Except for possible initial leakage after the first start-up, the mechanical seal on the shaft must function without any loss of liquid.

Do not run the pump when dry.

8.3. Maintenance Pumps with packing seal

First loosen the gland slightly so that the seal is decompressed. Then adjust the gland, leaving a regular leakage-drip, which indicates proper lubrication.

The packed gland must be replaced when its sealing properties have considerably decreased. A compressed, hardened and dry packing causes the shaft to wear.

8.4. Ball bearings and lubrication

For the motor see separate instructions (if supplied). Pump bearings are lubricated with high quality lithium soap grease.

Initial lubrication at the factory will be sufficient for 5,000 hours operation. After this period, the shaft and bearings should be dismantled for checking, cleaning (bearings, covers and support have to be washed with diluent) and re-lubrication with fresh grease.

In heavy working conditions (over 8 hours/day, in dusty or humid environments or with high ambient

temperature), re-lubrication (add grease) should be performed by means of the lubricating nipples at least once every six months for operation at 2,900-3,600 r.p.m. and at least once a year for operation at 1,450-1,800 r.p.m.

Perform lubrication while motor is running.

The table on page 86 indicates the types of bearings of the different pumps and the quality of grease for re-lubrication in grams (g).

8.5. Dismantling the system

Close the suction and delivery gate valves and drain the pump casing before dismantling the pump.

8.6. Dismantling the pump



Close the suction and delivery gate valves and drain the pump casing before dismantling the pump.

For dismantling and reassembly see construction in the cross section drawing.

The motor and all internal parts can be dismantled without removing the pump casing and pipes.

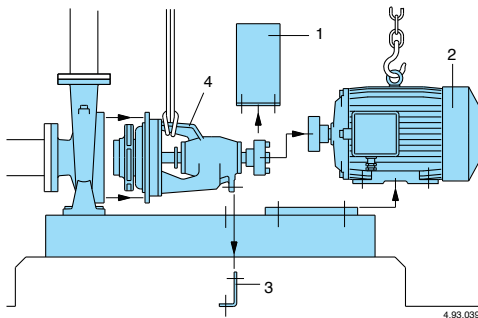


Fig. 10 Disassembly sequence.

Disassembly sequence with normal coupling without spacer (fig. 10):

- 1) coupling guard;
- 2) motor;
- 3) support foot (if fitted);
- 4) on removing the nuts (14.28) the bearing housing and shaft unit, with impeller and casing cover, is completely removed.

For disassembly and reassembly, see construction in the cross section drawing (paragraph 13.2 Annexes).

9. DISPOSAL



The final disposal of the device must be done by specialized company.

Make sure the specialized company follows the classification of the material parts for the separation.

Observe the local regulations and dispose the device accordingly with the international rules for environment protection.

10 SPARE PARTS

10.1 Spare-parts request

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

The spare parts request shall be sent to CALPEDA S.p.A. by phone, fax, e-mail.

11 DESIGNATION OF PARTS

Nr. Designation

- 14.00 Pump casing
- 14.04 Plug with washer
- 14.12 Plug with washer
- 14.20 Casing gasket
- 14.24 Stud
- 14.28 Nut
- 28.00 Impeller
- 28.04 Impeller nut
- 28.20 Impeller key
- 32.04 Screw
- 32.05 Nut
- 34.00 Casing cover
- 34.12 Stud
- 34.16 Nut
- 36.00 Mechanical seal
- 36.50 Mechanical seal circlip
- 38.00 Packing
- 42.00 Cover plate for seal
- 42.04 O-ring for cover plate
- 43.00 External jacket (Packing)
- 43.01 O-ring (Packing)
- 44.00 Stuffing box gland
- 44.04 Lantern ring
- 46.00 Deflector
- 60.00 Bearing housing
- 60.02 Support foot
- 62.00 Bearing cover, impeller side
- 62.04 Gasket
- 62.08 Screw
- 62.12 Lubricating nipple
- 63.00 Ball bearing, impeller side
- 64.00 Pump shaft
- 64.08 Shaft sleeve
- 64.12 O-ring shaft sleeve
- 64.16 Key for shaft sleeve
- 64.20 Key for shaft end
- 66.00 Ball bearing, coupling side
- 66.04 Shoulder ring for bearing housing
- 66.08 Circlip for bearing housing
- 66.12 Shoulder ring for shaft
- 66.16 Circlip for shaft
- 68.00 Bearing cover, coupling side
- 68.04 Gasket
- 68.08 Screw
- 68.12 Lubricating nipple

Changes reserved.

12. Troubleshooting



WARNING: Turn off the power supply before performing any operations.

Do not allow the pump or motor to run when dry even for a short period

Strictly follow the user instructions and if necessary contact an authorised service centre

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PROBLEM	PROBABLE CAUSES	POSSIBLE REMEDIES
1) The engine does not start	1a) Unsuitable power supply 1b) Incorrect electrical connections 1c) Engine overload protective device cuts in. 1d) Blown or defective fuses 1e) Shaft blocked 1f) Motor failed	1a) Check that the mains frequency and voltage are suitable. 1b) Connect the power supply cable correctly. Check the setting of the thermal overload protection. 1c) Check the power supply and make sure that the pump shaft is turning freely. Check the setting of the thermal overload protection. 1d) Replace the fuses, check points a) and c) 1e) See "Blocked pump" instruction booklet 1f) Repair or replace the engine.
2) Pump blocked	2a) Prolonged periods of inactivity . 2b) Presence of solid bodies in the impeller 2c) Bearings blocked	2a) Unblock the pump by using a screw driver to turn the relevant notch on the back of the shaft. 2b) Remove any solid foreign bodies inside the impeller 2c) Replace the bearings.
3)The pump functions but no water comes out	3a) Presence of air inside the pump or suction pipe 3b) Possible infiltration of air. 3c) Foot valve blocked or suction pipe not fully immersed in liquid 3d) Suction filter blocked	3a) Release the air from the pump using the delivery control valve. 3b) Check which part is not tight and seal the connection. 3c) Clean or replace the bottom valve and use a suitable suction pipe . 3d) Clean the filter, if necessary, replace it . See point 2b) also.
4) Insufficient flow	4a) Pipes and accessories with diameter too small 4b) Presence of deposits or solid bodies in the impeller 4c) Rotor deteriorated 4d) Worn rotor and pump case 4e) Gases dissolved in the water 4f) Excessive viscosity of the liquid pumped 4g) Incorrect direction of rotation	4a) Use pipes and accessories suitable for the specific application 4b) Clean the impeller and install a suction filter 4c) Replace the impeller 4d) Replace the impeller and the pump casing 4e) Perform the opening and closing manoeuvres through the feeder gate 4f) The pump is unsuitable 4g) Invert the electrical connections in the terminal board
5) Noise and vibrations from the pump	5a) Worn bearings 5b) Unbalanced power supply	5a) Replace the bearings 5b) Check that the mains voltage is right
6) Leakage from the mechanical seal	6a) The mechanical seal has functioned when dry or has stuck 6b) Mechanical seal scored by presence of abrasive parts in the liquid pumped 6c) Mechanical seal unsuitable for the type of application 6d) Slight initial drip during filling or on first start-up	In cases 6a), 6b) and 6c), replace the seal 6a) Make sure that the pump casing is full of liquid and that all the air has been expelled. 6b) Install a suction filter and use a seal suited to the characteristics of the liquid being pumped. 6c) Choose a seal with characteristics suitable for the specific application 6d) Wait for the seal to adjust to the rotation of the shaft. If the problem persists, see points 6a), 6b) or 6c).

摘要

1	总则	74
2	技术说明	74
3	技术特性	75
4	安全性	75
5.	搬运操作	75
6.	安装	76
7.	启动和运行	78
8	维修	78
9	处理	80
10	备件	80
11	部件名称	80
12	故障诊断	81
13	附件	82
13.1	尺寸与重量	82
13.2	剖面图	85
	一致性声明	88

1 总则

使用本产品前请仔细阅读此操作手册的内容，并保留此操作手册以供参考。
此操作手册为意大利语，如有翻译偏差以意大利语为准。

此操作手册是安全保障必不可少的一部分，在产品最终达到正常工作前请牢记本手册。

万一用户不慎遗失本手册，可以向CALPEDA S.P.A.或其代理商要求一份复印件，请详述产品铭牌上的资料（见2.3 标记）

未经制造商认可的有关其产品或部件的任何更改变化，将撤销“CE 声明”和质保。

此产品不应让8岁以下的未成年、身体有缺陷、心智不全或无任何经验的人操作，除非在充分的指导或监督下让相关人员知道如何安全的使用，并且通过一个负责人来让相关人员了解到可能会产生的危险。

不得让儿童接触本产品。

用户有义务清洁和维护本产品。除非在有人监督的情况下，否则儿童不应清洁和维护本产品。

不要使用在池塘、水箱或泳池等人为可以进入或接触的水环境中。

仔细阅读安装部分的规定：

-最大允许的结构工作压力详见3.1

-电源线的类型及剖面详见6.5

-所安装电器设备的防护类型详见6.5

1.1 符号标记

为了便于理解本操作手册，下面给出常用标记符号的含义。



一定要注意通告和警告的标记，否则可能导致产品损坏或人身安全风险。



忽略有关电气的警告，可能导致产品损坏或人身安全风险。



提示和警告正确操作处理产品及其部件



最终用户可以进行的操作
终端用户：仔细阅读本操作手册后，产品使用者可以负责正常状态下的维护工作。他们可以进行产品的清洁和长期停滞后的重新启动此类标准维护工作。



必须由有资格的专业电工才能进行的操作
专业电工：有资格的专业电工，负责所有电气设备的运行包括维护，应具有高压电资格。



必须由有专业技术资格的人才能进行的操作
专业技术人员：正常状态下，具有产品安装和维护能力的专业技术人员，可以从事电气和机械方面的维护工作。能够从事简单的与设备维护相关的电气和机械方面的操作。



指示必须使用个别的保护装置

- 工作手套。



指示必须使用个别的保护装置

- 护眼用具。



必须关断电源并断开与电源的连接才能进行的操作



必须接通电源才能进行的操作

1.2 制造商名称和地址

制造商名称：CALPEDA S.P.A.

地址：Via Roggia di Mezzo, 39

36050 Montorso Vicentino - Vicenza / Italia

www.calpeda.it

1.3 授权操作者

本产品只能由有经验的终端用户和专业技术人员操作



禁止终端用户操作那些只能由专业技术人员操作的工作，对未按本规章执行而引起的损害制造商不负任何责任

1.4 质保

质保参见总则和销售条款



质保期内将更换或维修有问题的产品部件（由制造商验证的）。

下面因素不在质保范围：

- 由于产品使用者没有按照说明及本手册的通告信息操作造成的损坏

- 未经制造商认可的对产品的任何改变而造成的损坏
- 由非专业人员操作造成的损坏
- 由不当的维修造成的损坏

1.5 技术支持

任何技术支持、备件及更多的产品信息均可联系：
Calpeda S.p.A. (附件1.2章)。

2 技术说明

带轴承支架的卧式端吸离心泵 (PN10)。
N、N4泵 (额定工况点和主要尺寸符合EN733的规定) 通过一体底座和弹性联轴器与IM B3标准结构 (IEC34-7, IEC72) 的电机连接。
N:泵壳和笼型支架为铸铁结构
B-N.: 泵壳和笼型支架/泵壳盖为青铜结构 (所供水泵均被完整喷漆)

2.1 预期用途

标准结构
洁净液体, 不含磨蚀性的, 非爆炸性的, 对泵体材料无害的液体 (固体颗粒含量不大于0.2%)
液体温度从-10° C 到 +90° C。
特殊结构
洁净液体, 不含磨蚀性的, 非爆炸性的, 对泵体材料无害的液体 (固体颗粒含量不大于0.2%) 带有以下特征:
- 化学冷却液温度从0° C~30° C
- 清水温度从90° C~140° C
- 油质液体温度不高于200° C或者最大密度是30 cSt

2.2 不当使用

本产品只用于2.1中所述用途



除了本说明手册中指示的用途外, 严禁其他不当用途

不当使用将降低本产品的安全性和效率, 由于不当使用而造成的损坏和意外, CALPEDA不承担责任



严禁用于可能有人员进入或与水接触的池塘、水箱或游泳池

2.3 标记

下面给出的是泵外壳上的牌板的图片

泵牌板图示



3 技术特性

3.1 技术参数

尺寸和重量 (见13.1)

额定转速 1450/1750/2900/3450rpm

允许的最大转速: 见86页表格

电压/频率:

- 高达 240V 1~ 50/60 Hz

- 高达 480V 3~ 50/60 Hz

检查主电源的电压、频率等参数是否符合电机铭牌所示
标牌的电气数据依据电机的正常功率而标出。

额定电机功率

N (2900 1/min) 直至 kW: 2,2 7,5 30 75

N4 (1450 1/min) 直至 kW: 7,5 30 75

噪音等级 dB (A) 最大: 70 80 85 90

每小时起动次数 最大: 60 40 20 10

最大工作压力为 100 m (10 bar), 球墨铸铁最大工作压力为 160m (16 bar).

最大吸入压力: PN (Pa) - Hmax (Pa).

3.2 工作条件

请安装在可遮蔽风雨通风良好的场所, 最高环境温度
为40°C

4 安全性

4.1 总则



使用本产品前应了解有关安全的指示
仔细阅读所有的操作说明和从搬运到处理的每一步指示专业技术人员必须认真遵从所有的适用标准和法律, 包括产品应用地当地的规章
产品安装使用应符合现行的安全法规
不当的使用可能会对人身、动物和其他对象造成损害
制造商对由于不当使用或未按本操作手册和标牌的标示使用所造成的损坏不负责任



按照日程维护计划表操作并及时更换损坏的部件可使产品工作在最佳状态
使用 CALPEDA S.P.A 或其指定代理商提供的原厂配件



不要撕下或改变产品上的标识
当产品有问题或部件有损坏的情况下不要启动产品



由于维修时会全部或部分的拆开产品, 因此之前务必断开供电电源

4.2 安全装置

本产品具有全外部壳体, 可防止与内部部件的任何接触

4.3 剩余风险

当按照本产品的设计功能和所有安全规则使用本产品时没有剩余风险

4.4 通告和安全预示

没有任何安全预示在此类产品上面

4.5 个别的保护装置

在安装、使用和维修期间, 建议操作人员使用适合此操作的个别保护装置或手段当进行日常或个别的维修工作时

标示的个别保护装置



手的保护
(隔热、化学品和机械损害的手套)



护眼用具
(可用来防护化学试剂, 热气及其他物体对眼睛的伤害)

5. 搬运操作

货物应包装完好

运输过程中应避免超重, 并确保货物不会移动。确保运输车辆和所运货物尺寸相符合

无需特殊车辆运输

运输车辆应与被运货物的尺寸重量相符合 (见 表见 13.1 尺寸与重量)

5.1 搬运

小心搬运, 轻拿轻放

避免冲撞包装材料以免损坏泵的外套

对于重量超过25公斤的包装物需由两人同时搬抬 (见 表见13.1 尺寸与重量)

缓慢提升泵组(图.1), 确保它不会左右晃动, 以避免因不平衡而倾倒。

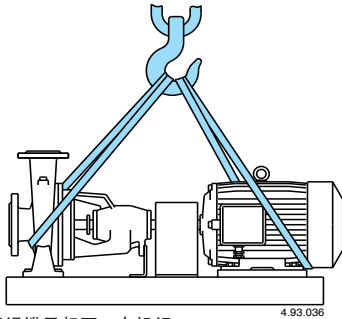


图1 用绳缆吊起泵—电机组

6 安装

6.1 尺寸

产品的尺寸详见附件“尺寸” (附件13.1章)

6.2 环境要求和安装位置的尺寸

客户应将本产品适当的安装于适当位置以满足设备的要求 (供电需要等)

安装位置应满足章节3.2中的要求

禁止将产品安装于有潜在易燃易爆危险的环境中

6.3 拆箱



开箱检查产品是否因运输而损坏

拆开的包装材料应根据产品使用国当地的法律规定遗弃或再利用

缓慢提升泵-电机组(见5.1章节 图1)

确保它不会晃来晃去, 以避免因不平衡而倾倒。

6.4. 安装

泵的安装必须使转轴保持水平, 底脚向下。

将泵安置在尽可能靠近水源的地方(为汽蚀余量考虑)。

为了便于电机的散热, 观察泵轴的转向, 及灌泵和泵的排水, 因此安装时应在泵组的周围留下足够的空间。

6.4.1. 基础安装

较小的机组安装在整片式具有高抗扭强度的槽钢底座上。由于机组重量有限且当管路负载较轻时, 这种结构

可以不用做基础。无论如何, 升高的基础有助于泵壳内水的排放且当出现水淹的时候可以提供一个安全高度避免设备被淹。小机组安装在整片式金属底座上时, 可直接放置于地面, 只需将地脚螺栓用混凝土埋置即可(图.2)。

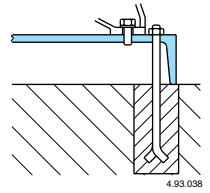


图.2 置于整片式槽钢底座上的小机组的基础

对于较大机组, 尤其是那些安装在焊接型钢底座上的机组, 必需通过钢筋混凝土基础承载来自机组和管路的负载, 以维持稳定和避免机组震动(参见结构图 6.4.3, 6.4.4.)。放置机组并用分离器或楔形物支撑底座用水平仪找平, 在底座和基础的粗料面间预留1-2寸(25-50mm)的间隙用于灌浆。对焊接金属底座, 应充分灌浆至超过下部一些埋置地脚螺栓并形成使底座支撑面负载均匀分布的稳固基础(图.3)。

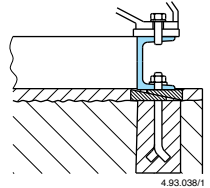


图.3 置于焊接型钢底座上机组的基础。

当水泥凝固后, 拧紧所有地脚螺栓 (一般至少在浇筑后48小时)

6.4.2. 工作管路

管路的内径取决于需要的流量。

入口的管路直径应保证介质的流速不超过1.5m/s; 出口管路直径应保证介质的流速不超过3m/s。

不同的流量 (Q) 对应入口管路最小内径 (DN) 参照如下表格:

DN	mm	50	65	80	100	125	150	200	250	300
Qmax	m ³ /h	10,5	19	28,8	45	75	108	215	350	508

入口管路必需保证其气密性并且向上倾斜, 以避免形成窝气。如果入口安装闸阀, 阀门手轮务必水平放置。可使用大小头变径管连接管路和入口。(图 4)

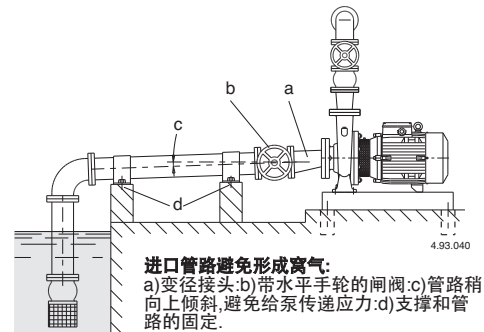


图4 管路连接

进口管路避免形成窝气:
a) 变径接头; b) 带水平手轮的闸阀; c) 管路稍向上倾斜, 避免给泵传递应力; d) 支撑和管路的固定。

在负吸入水头时，入口处必需安装带过滤器的底阀（持续浸没）。

在从水箱进水时，必需安装一止回阀。

在负吸入水头运行时，也应安装一闸阀。如果管路压力需增加应遵循当地规则标准。在出口管路上安装一闸阀以调节流量、压力和实际功率。安装一个压力表。当出口水头超过15m时，应在泵和闸阀之间安装一止回阀以保护泵免受水锤的损害。

6.4.3. 连接工作管路

注意：连接到泵的管路需安全可靠的固定，避免将应力、扭矩或震动传递到泵上。

请务必将管路固定在支撑上（参考图4），如果连接位置不准确请调整管路位置，避免将应力传导至水泵。

请在正确的位置安装补偿装置（膨胀节）以吸收膨胀和震动。

注意：管路负载作用于泵法兰上的力和力矩将引起泵与驱动轴错位，会引起泵壳变形，甚至导致泵与底座间的螺栓超应力。

请将管路与标准对接法兰连接，再连接泵的法兰（PN10或PN16最大到DN150）

在安装时，务必保证垫圈在两片法兰之间，不要伸入至管道内。

在连接前，务必保证管路内部清洁。

对于新的管路（尤其是还未安装入口滤网的时候），应在泵入口端插入一个锥形临时滤网以避免固体颗粒物（如焊渣/片等）从管道进入泵。

建议使用20-12.5目的滤网（每线性英寸开孔数）且有效截面积至少要三倍于管路入口面积（图5）。

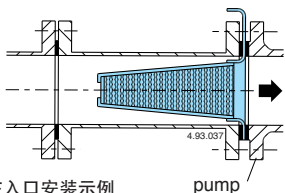


图5锥形临时滤网在入口安装示例

6.4.4. 泵与电机的对中

出厂前，泵与电机通过弹性联轴器连接于同一底座上且已调好同心度。

在运输过程中，泵与电机可能会产生错位。在现场安装时请务必调整同心。



确认地脚螺栓紧固且管路连接完好，启动泵前再次核对联轴器同心度。如果需要，必须再次对中。

6.4.5. 带N-EUPEX联轴器的泵组

移去联轴器护罩，用百分表或塞尺来保证两个半联轴节的端面距离沿圆周一圈距离（3-4mm）均相等。

用百分表或直尺检查半联轴节的外圆（同心度）。检查时需保证外缘4个对称点距离相等。（图6A）

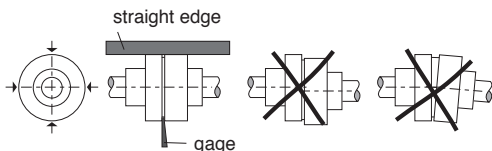


图6A 联轴器的校正

在调整时，通过松开或拧紧底座上支脚的紧固螺丝进行调整，如有必要可在底座和支脚之间增加标准垫片进行调整。

确保转子可用手自如的转动。一旦设备达到工作温度，应再次检查联轴器的同心度。

当基础还未长时间固化同时泵组也还未经各种工况的测试时，应对同心度定期检查，如果需要，请再次调整同心度。

6.4.6. 带Rex-Viva联轴器的泵组

移去联轴器护罩，松开螺栓并且去掉半联轴节

使用百分表或直尺检查泵轴与电机轴上轭的同心度。

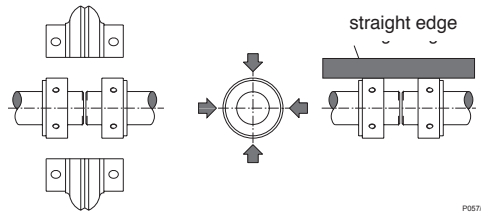


图6B 联轴器的对中

检查时需保证外缘4个对称点距离相等。（图6B）

在调整时，通过松开或拧紧底座上支脚的紧固螺丝进行调整，如有必要可在底座和支脚之间增加标准垫片进行调整。

回装半联轴器的顺序如下：

在第一个半联轴节上插入两个中心螺丝

在第二个半联轴节上插入并且按需要的力矩拧紧两个中心螺丝

按需要的力矩拧紧第一个半联轴节的两个中心螺丝

在第一个半联轴节上插入两个侧向螺丝

在第二个半联轴节上插入并且按需要的力矩拧紧两个侧向螺丝

按需要的力矩拧紧第一个半联轴节的两个侧向螺丝

重复以上顺序安装剩余的螺钉。

对于上紧螺丝的力矩，建议参考联轴器厂家的说明书。

确保转子可用手自如的转动。一旦设备达到工作温度，应再次检查联轴器的同心度

当基础还未长时间固化同时泵组也还未经各种工况的测试时，应对同心度定期检查，如果需要，请再次调整同心度。

注意：底座安装不良及机组的对中调节不良或管路连接不良都将造成联轴器弹性垫，轴承，密封和其它内部零件的震动和过早磨损（见解剖图6.4.1., 6.4.3., 6.4.5.）

6.4.7. 轴承室支架

为了减少因管路膨胀或残余应力带来的影响，N、N4泵安装了一个固定式支架来尽可能的避免外部对同心的影响。

推荐的支架尺寸（单位mm）见图7

校正操作时，连接管路之前应松开支撑脚的螺栓，避免管路传导应力或使轴心高度发生变化。

完成校正对中后支架必需放置在底座上起到支撑作用，拧紧泵壳底脚和底座螺栓后必须再次检查确认。

首先拧紧底脚和基础的螺栓，然后拧紧底脚和支撑的螺栓，这样轴线将不会随支撑脚改变。

校正完成后，启动泵之前将联轴器护罩装好（避免意外的安全防护）



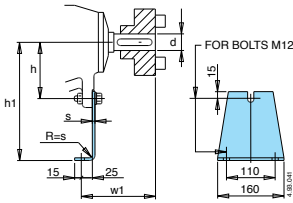


图7 选装支架

EN733标准尺寸			h	s
d	w1	h1		
24	100	112±180	77	4
32	130	180±250	97	6
42	160	280±315	132	6

6.4.8. 恒位油杯 (应要求)

安装恒位油杯 (可选) 能够保持润滑油量始终在适当水平, 可避免重复注油。

恒位油杯必须正立垂直安装。

注油指示

- 1.通过油杯的横支管部分注油, 直至淹没过内孔高度。
- 2.之后给油杯灌油并安装就位。

注意! 在工作过程中, 恒位油杯可能会发生微量的漏油情况, 属正常现象。

后续补充润滑油时, 必须将油液先注入油杯 (安瓿瓶) 中, 不得再通过横支管弯头直接注油。

7.2 首次启动



请注意: 千万不要使泵干态运行。
一定先注水后再启动泵。

当泵置于水面之上时(吸水操作), 通过注水口灌满整个泵体及进水管(图.8)。

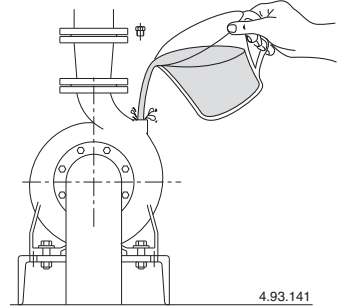


图.8 灌装

当吸入端面液面高于泵时(正吸上扬程), 慢慢直至完全打开进口闸阀灌泵, 同时保持出口阀门打开排出空气。

用手检查轴能否转动。

对于三相电机应检查其转向是否和泵壳上箭头所示方向一致, 不符, 则断开电源互换其中的两相。

对于吸入操作时泵可能需要几分钟时间才能上水正常工作

检查泵是否工作在正常范围, 工作电流不应超过铭牌上注明的电流

如超过请调节出口阀门开度或压力开关的设定值。



当泵送液体温度超过50度时不要接触液体



烫伤危险。由于液体温度较高, 泵壳和电机可能超过50°C.



除非有适当的保护装置否则不要触摸这些部件, 或等到设备完全冷却下来。

7.2.1. 填料密封的泵

首先将填料压盖放松一点以便给密封减压

7.3 泵的停车



当存在故障时必须关闭设备

本产品设计为连续工作, 当希望断开本产品时可断开供电电源停机(见章节6.5 电气连接)

中文 6.5. 电气联接



必须由合格电工根据当地规范进行电气联接。

必须遵守安全标准。

泵-电机机组必须可靠地接地。

把接地导线接到标有记号的端子上。

对照铭牌核对频率和电压并根据铭牌上所述及电机说明书 (如有) 连接供电线于接线端子。

注意: 超过**5.5KW**的电机不能直接起动, 设置控制箱用星三角或其它方式起动。

如果接线盒的进线口为密封管, 则应使用H07RN-F型柔软的电线电缆的剖面不低于表(章13.3)的相关规定。

安装一个使电源断开的装置, 各电极之间至少有3mm的间隙。

对于三相电机, 根据其额定电流一定要安装一个过载保护装置。

6.6 操作频率转换器。

调整频率转换器, 以便不超过最小极限值。25赫兹最大。fn的赫兹。

7 启动和运行

7.1 启动前的预检

当存在有故障的部件时不要启动本产品

8 维修

任何维修操作前都应该先断开电源,必要时可由电工或专业技术人员操作



在带电情况下的任何类似清洁或维修的操作都可能对人身造成严重伤害



如果电源电缆出现损坏,必须由厂商、厂商代理或相同资质的人员进行更换。

突发的维修或需要部分拆解零件的维修,都必须由能看懂结构图的专业人员来操作



建议记录所有的维修过程,在维修期间特别小心注意不要带入任何外部细小异物,这会对产品的造成损害



不要在无防护措施的情况下用手直接操作,应带防水防割的手套进行过滤器的拆解清洁或其他维修工作



维修期间无关人员禁止入内

本操作手册中没有介绍的维修工作只能由CALPEDA授权的特别人员来完成
有关产品使用和维修的更多信息请联系CALPEDA S.P.A.

8.1 日常维护 (标准结构)



每次维修工作前都应先断开电源并确保设备不会意外接通运转



烫伤危险. 由于液体温度较高, 泵壳和电机可能超过50°C.



除非有适当的保护装置否则不要触摸这些部件, 或等到设备完全冷却下来。

在泵长期不使用的情况下, 如有结冰的可能, 则应彻底排放掉液体(图.9).

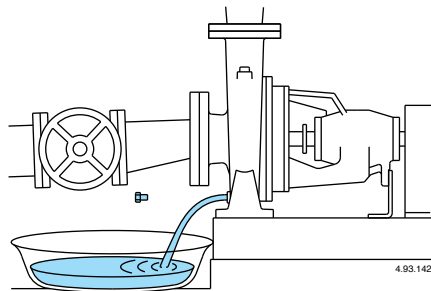


图.9 排放

在再次启动泵-电机机组前, 一定检查轴是否被卡住, 并往泵内注水。

8.1 日常维护 (特殊结构)



每次维修工作前都应先断开电源并确保设备不会意外接通运转



烫伤危险. 由于液体温度较高, 泵壳和电机可能超过50°C.



除非有适当的保护装置否则不要触摸这些部件, 或等到设备完全冷却下来。

在泵长期不使用的情况下, 如有结冰的可能, 则应彻底排放掉液体(图.9).

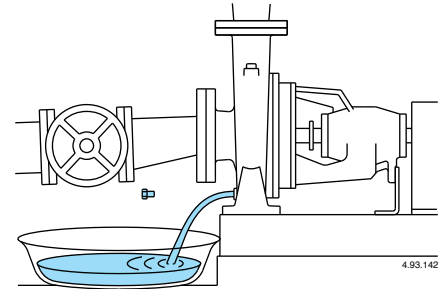


图.9 排放

在再次启动泵-电机机组前, 一定检查轴是否被卡住, 并往泵内注水。

8.2. 带机械密封的泵

机械密封无需维护。除了初次运行时可能的初始渗漏, 轴上的机械密封不应有任何泄露。在无水的時候严禁运行设备。

8.3. 填料密封的泵

首先将填料压盖放松一点以便给密封减压, 然后调节填料压盖保持一个规则的渗漏, 可以有良好的润滑效果. 当密封性能显著下降时必须更换填料密封. 压缩的, 硬化的, 干的填料会磨损轴。

8.4. 球轴承及润滑

对于电机, 请参照电机单独的说明(如果有). 泵轴承使用高质量的锂基润滑脂。

出厂时的初始润滑脂足够运行5000小时. 之后, 应拆下轴和轴承检查、清理(轴承、轴承盖及支架需要使用清洗剂清洗)从新加注油脂。在繁重的工作条件下(每天至少工作8小时, 灰尘大或湿度高或温度高), 以2900-3600r.p.m.运行时, 请至少每六个月一次的重新加注(添加)油脂; 以1450-1800r.p.m.运行时, 请至少一年加注一次油脂. 加注时电机应保持运行状态. 78页的图表表明不同泵的轴承型号和以克为单位的油脂加注量。

8.5 系统的分解

分解前，关闭进出口隔栅。

8.6. 泵的拆解



拆解泵之前应关闭进出水口的阀门并排空泵壳内的水。

拆解和组装参见剖面图的结构

在不移动泵壳和管路的情况下即可拆解电机和所有的内部零件。

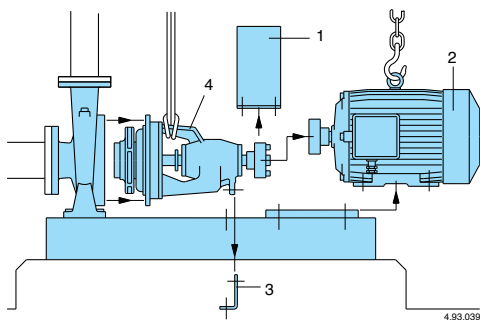


图.10 拆解顺序

11 部件名称

名称
14.00 泵壳
14.04 注水堵
14.12 排水堵
14.20 O型圈
14.24 螺丝
14.28 螺母
28.00 叶轮
28.04 叶轮锁母
28.20 叶轮键
32.04 螺丝
32.05 螺母
34.00 泵壳盖
34.12 柱头螺栓
34.16 螺母
36.00 机械密封
36.50 密封挡圈
38.00 填料
42.00 密封室盖盘
42.04 密封室盖盘O型圈
43.00 填料外套
43.01 O型圈 (填料)
44.00 填料函压盖
44.04 隔离环
46.00 挡水圈
64.00 泵轴
60.00 轴承箱
60.02 支架 (轴承箱)
62.00 轴承盖 (叶轮侧)
62.04 垫圈
62.08 螺丝
62.12 润滑脂加注嘴
63.00 球轴承 (叶轮侧)
64.00 泵轴
64.08 轴套
64.12 轴套O型圈
64.16 键 (轴套)
64.20 键 (轴套末端)
66.00 球轴承 (联轴器侧)
66.04 轴肩环 (轴承箱)
66.08 卡簧 (轴承箱)
66.12 轴肩挡圈 (轴)
66.16 卡簧 (轴)
68.00 轴承盖 (联轴器侧)
68.04 垫圈
68.08 螺丝
68.12 润滑脂加注嘴

中文

带有普通联轴器的拆借顺序如下：(图 10)

- 1) 联轴器护罩
- 2) 电机
- 3) 轴承室支架 (如果有)
- 4) 拆下螺母 (14.28)，可将轴承箱和轴组件带着叶轮和泵壳盖的完整的拆卸下来。为了便于拆卸和回装，请参考构造解剖图 (附录13.2)

9. 处理



产品的最终处理应由专业公司操作

确保专业公司是按照材料分类方式处理

按照当地的法规和有关环境保护的国际准则处理

保留更改权利

10 备件

10.1 订购备件

订购备件时请根据剖面图提供备件的名称和位置编号及泵铭牌上的数据 (型号、参数和序列号)

备件需求请电话、传真、邮件给CALPEDA S.P.A

保留更改权利

12. 常见故障和解决方法

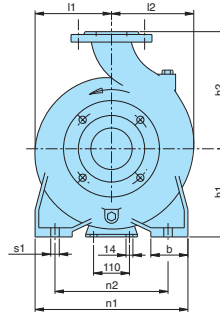
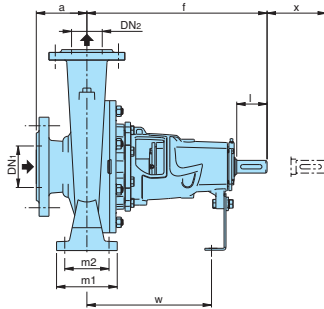


警告: 任何操作之前均应断开电源。
决不允许泵组干转,即使是短时间的。
严格按照使用说明书操作,如有必要请联系授权服务中心。

故障现象	故障的可能原因	解决办法
1)电机不转	1a)供电问题 1b)电线连接错误 1c)电机的过载保护动作 1d)保险丝问题 1e)泵轴卡死 1f)电机故障	1a)检查主电源的电压、频率等是否匹配。 1b)正确连接供电电源电线, 检查过热保护装置。 1c)检查供电电源并确认泵轴可以自由转动,检查过热保护装置。 1d)更换保险丝,并检查a)c) 1e)见2)泵卡死 1f)维修或更换电机。
2)泵卡死不转	2a)长期不使用 2b)叶轮被异物卡住 2c)轴承损坏	2a)用一螺丝刀转动泵轴末端的开槽以解除卡阻。 2b)取出叶轮处的异物。 2c)更换轴承。
3)泵工作但不出水	3a)泵内或吸入管路内有空气 3b)可能有漏气的地方 3c)底阀卡死或吸入管口未完全浸入液体中 3d)进口过滤器堵塞	3a)用排气阀释放泵内空气。 3b)检查所有连接处, 看是否拧紧或密封 3c)清洗或更换底阀, 并选用合适的进水管路 3d)清洗过滤器, 如有必要更换它。同时参见2b)。
4)流量不足	4a)管路或附件直径过小 4b)叶轮处存在异物或沉积物 4c)转子损坏 4d)转子和泵壳磨损过度 4e)水中有大量气泡 4f)泵送的液体粘度过高 4g)反转	4a)选用直径适当的管路和附件。 4b)清洁叶轮并安装一进口过滤器。 4c)更换叶轮。 4d)更换叶轮和泵壳 4e)执行打开、关闭加水堵的操作排除泵内空气。 4f)选泵不合适。 4g)将接线盒内任意两线对调。
5) 泵的颤动和噪音	5a)轴承磨损 5b)三相电不平衡	5a) 更换轴承 5b) 检查主电源
6) 机封漏水	6a)机封干转或粘连 6b)泵送液体内有磨蚀性物质导致机封划伤 6c)机封不适合所泵送的液体 6d)灌泵或初次起动泵时的轻微渗漏	对6a) 6b) 6c)的情况,需更换机封。 6a)确保泵壳内充满液体, 并排空所有气体。 6b)安装进口过滤器, 并选用与所泵送介质特性相符合的机封。 6c)选用与所泵送介质特性相符的机封。 6d)让泵转动一会机封将随转动而调整, 如问题依然存在, 参见6a) 6b) 6c)。

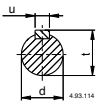
13. ALLEGATI

13.1 Dimensioni e pesi - Dimensions and weights - Abmessung und Gewicht Dimensions et poids - Dimensiones y pesos - Mått och vikt Afmetingen en gewicht - Διαστάσεις και βάρη - Габариты и вес

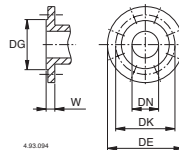


Shaft extension ISO 775 Parallel key UNI 6604

Flanges PN 10, EN 1092-2



mm			
d	l	u	t
24 k6	50	8	27
32 k6	80	10	35
42 k6	110	12	45



mm						
DN	DG	DK	DE	Holes N°	Ø	W
32	76	100	140	4	19	18
40	84	110	150	4	19	18
50	99	125	165	4	19	20
65	118	145	185	4	19	20
80	132	160	200	8	19	22
100	156	180	220	8	19	24
125	184	210	250	8	19	24
150	211	240	285	8	23	26
200	266	295	340	8	23	30

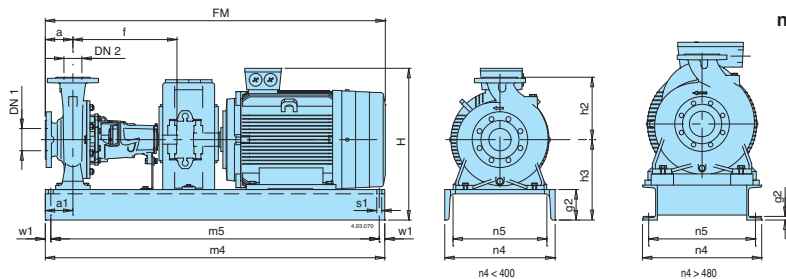
N n ≈ 2900 rpm
N4 n ≈ 1450 rpm

TYPE	mm														kg										
	DN1	DN2	a	f	h1	h2	l1	l2	m1	m2	n1	n2	b	s1	d	w	x	B-N B-N4	N N4						
B-N, B-N4 - N, N4 32-125	50	32	80	360	112	140	93	97	100	70	190	140	50	14	24	260	100	30	26,5						
B-N, B-N4 - N, N4 32-160					132	160	120	120			240	190						37	33						
B-N, B-N4 - N, N4 32-200					160	180	140	140			265	212						44	38,4						
B-N, B-N4 - N, N4 40-125	65	40	80	360	112	140	100	113	100	70	210	160	50	14	24	260	100	32	28,4						
B-N, B-N4 - N, N4 40-160					132	160	119	119			240	190						38	33,6						
B-N, B-N4 - N, N4 40-200					160	180	140	140			265	212						47,1	40,4						
B-N, B-N4 - N, N4 40-250	65	50	100	360	180	225	175	175	125	95	320	250	65	14	24	260	100	63	55						
B-N, B-N4 - N, N4 50-125					132	160	121	137			240	190	42,4					36,5							
B-N, B-N4 - N, N4 50-160					160	200	140	153			265	212	50					45							
B-N, B-N4 - N, N4 50-200	65	50	100	360	180	225	175	175	125	95	320	250	65	14	24	260	100	54	47						
B-N, B-N4 - N, N4 50-250					180	225	175	175			320	250	66					57,5							
B-N, B-N4 - N, N4 65-125					160	180	134	155			280	212	65					48	38,7						
B-N, B-N4 - N, N4 65-160	80	65	100	360	200	250	175	190	125	95	320	250	80	14	24	260	100	50,6	44,5						
B-N, B-N4 - N, N4 65-200					180	225	155	175			320	250						55,5	50						
B-N, B-N4 - N, N4 65-250					200	250	175	190			360	280						80	103	90					
B-N4 - N4 65-315	100	80	125	360	225	280	220	220	160	120	400	315	80	18	32	340	140	149	130						
B-N, B-N4 - N, N4 80-160					180	225	165	193			320	250						65	61	53					
B-N, B-N4 - N, N4 80-200					200	250	170	194			345	280						80	93	80,5					
B-N, B-N4 - N, N4 80-250	100	80	125	470	200	280	191	210	160	120	400	315	80	18	32	340	140	110	95						
B-N4 - N4 80-315					250	315	220	232			400	315						154	134						
B-N4 - N4 80-400 (1)					315	315	230	250			360	280						80	220	192					
B-N, B-N4 - N, N4 100-200	125	100	125	530	280	355	268	268	160	120	435	355	80	18	42	370	140	220	192						
B-N, B-N4 - N, N4 100-250					200	280	180	212			360	280						80	103	89					
B-N, B-N4 - N, N4 100-315					225	280	205	233			400	315						80	123	104					
B-N4 - N4 100-400	125	100	140	530	250	315	230	250	160	120	400	315	80	18	32	340	140	158	138						
B-N, B-N4 - N, N4 125-250					530	280	355	268			280	200						150	500	400	22	42	370	230	200
B-N4 - N4 125-315					470	250	355	235			268	160						120	400	315	80	18	32	340	150
B-N, B-N4 - N, N4 125-400	150	125	140	530	280	355	247	278	200	150	500	400	100	22	42	370	140	217	189						
B-N4 - N4 150-315					315	400	280	305			280	400						260	255	222					
B-N4 - N4 150-400					280	400	260	298			315	450						295	328	231	201				
B-N4 - N4 150-400	200	150	160	530	315	450	295	328	200	150	550	450	100	22	42	370	140	284	247						

1) Additional size

13. ALLEGATI

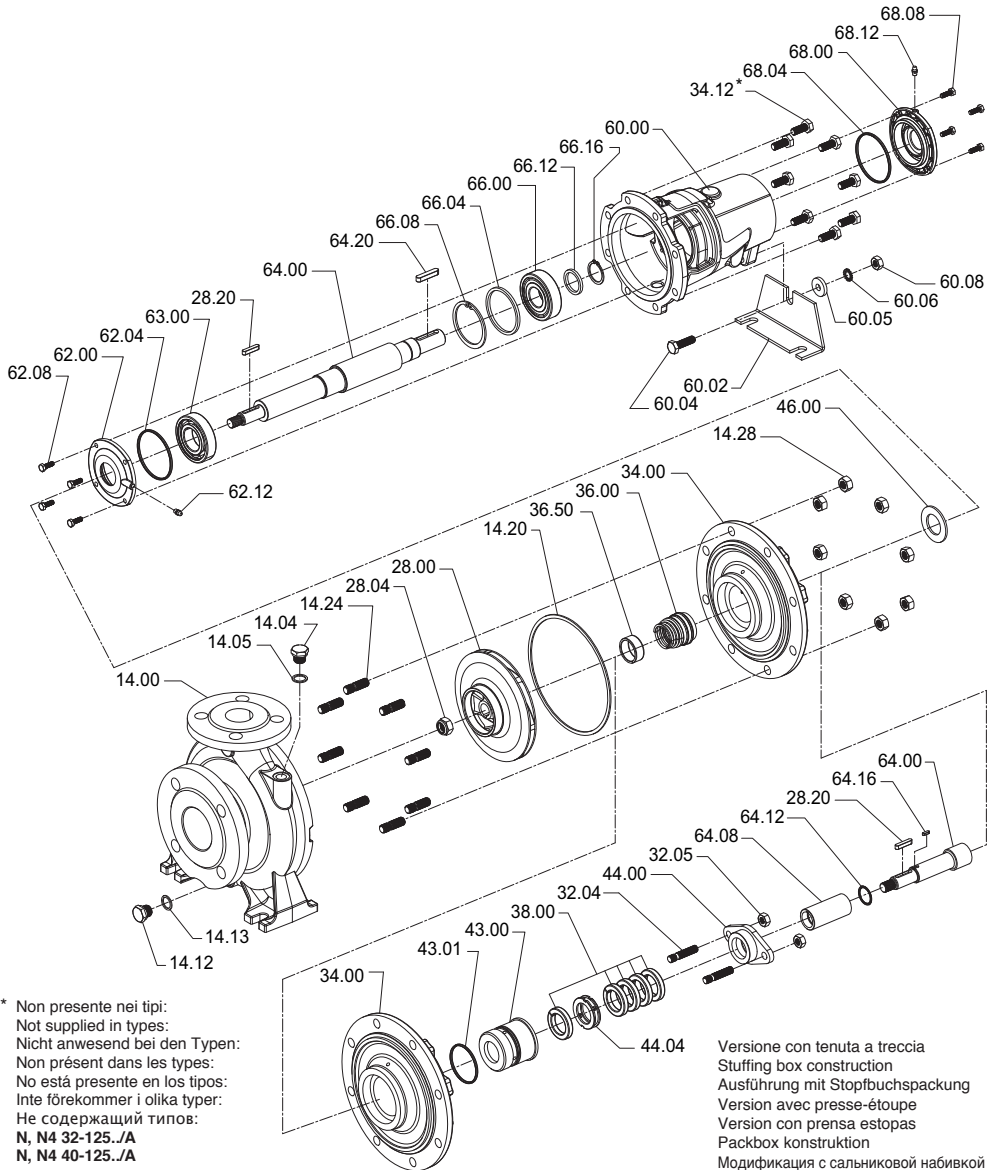
13.1 Dimensioni e pesi - Dimensions and weights - Abmessung und Gewicht Dimensions et poids - Dimensiones y pesos - Mått och vikt Afmetingen en gewicht - Διαστάσεις και βάρη - Габариты и вес



TYPE	MOTOR	kW	mm															
			DN1	DN2	a	f	h3	h2	m4	m5	w1	n4	n5	a1	g2	s1	FM≈	H≈
B-N, N 32-125	71 M2	0,55	50	32	80	360	197	140	780	750	15	240	180	90	85	14	718	308
	80 M2	0,75	50	32	80	360	197	140	780	750	15	240	180	90	85	14	770	319
	80 M2	1,1	50	32	80	360	197	140	780	750	15	240	180	90	85	14	770	319
B-N, N 32-160	90 S2	1,5	50	32	80	360	197	140	780	750	15	240	180	90	85	14	825	323
	90 L2	2,2	50	32	80	360	217	160	780	750	15	240	180	90	85	14	865	343
	100 L2	3	50	32	80	360	232	160	880	850	15	300	240	90	100	14	920	398
B-N, N 32-200	90 L2	2,2	50	32	80	360	245	180	780	750	15	240	180	90	85	14	865	371
	100 L2	3	50	32	80	360	260	180	880	850	15	300	240	90	100	14	920	426
	112 M2	4	50	32	80	360	260	180	880	850	15	300	240	90	100	14	903	437
B-N, N 40-125	132 S2	5,5	50	32	80	360	260	180	1020	990	15	350	290	100	100	14	954	462
	80 M2	1,1	65	40	80	360	197	140	780	750	15	240	180	90	85	14	770	319
	90 S2	1,5	65	40	80	360	197	140	780	750	15	240	180	90	85	14	825	323
B-N, N 40-160	90 L2	2,2	65	40	80	360	197	140	780	750	15	240	180	90	85	14	865	323
	90 L2	2,2	65	40	80	360	217	160	780	750	15	240	180	90	85	14	865	343
	100 L2	3	65	40	80	360	232	160	880	850	15	300	240	90	100	14	920	398
B-N, N 40-200	112 M2	4	65	40	80	360	232	160	880	850	15	300	240	90	100	14	903	437
	132 S2	5,5	65	40	80	360	260	180	1020	990	15	350	290	100	100	14	954	462
	132 S2	7,5	65	40	80	360	260	180	1020	990	15	350	290	100	100	14	973	462
B-N, N 40-250	160 M2	11	65	40	100	360	260	180	1020	990	15	350	290	100	100	14	1082	517
	160 M2	15	65	40	100	360	280	225	1020	990	15	350	290	100	100	14	1082	517
	160 M2	2,2	65	50	100	360	217	160	780	750	15	240	180	90	85	14	865	343
B-N, N 50-125	100 L2	3	65	50	100	360	232	160	880	850	15	300	240	90	100	14	940	398
	112 M2	4	65	50	100	360	232	160	880	850	15	300	240	90	100	14	923	409
	132 S2	5,5	65	50	100	360	232	160	1020	990	15	350	290	90	100	14	973	434
B-N, N 50-160	132 S2	5,5	65	50	100	360	260	180	1020	990	15	350	290	100	100	14	973	462
	132 S2	7,5	65	50	100	360	260	180	1020	990	15	350	290	100	100	14	973	462
	160 M2	11	65	50	100	360	260	200	1020	990	15	350	290	100	100	14	1082	497
B-N, N 50-200	160 M2	15	65	50	100	360	260	200	1020	990	15	350	290	100	100	14	1082	497
	160 M2	2,2	80	65	100	360	260	180	1020	990	15	350	290	100	100	14	1082	497
	160 M2	11	80	65	100	360	260	200	1020	990	15	350	290	100	100	14	1112	497
B-N, N 50-250	160 M2	15	80	65	100	360	260	200	1020	990	15	350	290	100	100	14	1082	497
	160 L2	18,5	65	50	100	360	280	225	1020	990	15	350	290	100	100	14	1142	517
	180 M2	22	65	50	100	360	280	225	1140	1110	15	350	290	100	100	14	1218	566
B-N, N 65-125	112 M2	4	80	65	100	360	260	180	880	850	15	300	240	100	100	14	923	437
	132 S2	5,5	80	65	100	360	260	180	1020	990	15	350	290	100	100	14	973	462
	132 S2	7,5	80	65	100	360	260	180	1020	990	15	350	290	100	100	14	973	462
B-N, N 65-160	132 S2	5,5	80	65	100	360	260	200	1020	990	15	350	290	100	100	14	973	462
	132 S2	7,5	80	65	100	360	260	200	1020	990	15	350	290	100	100	14	973	462
	160 M2	11	80	65	100	360	260	200	1020	990	15	350	290	100	100	14	1112	497
B-N, N 65-200	160 M2	15	80	65	100	360	260	200	1020	990	15	350	290	100	100	14	1082	497
	160 M2	11	80	65	100	360	260	200	1020	990	15	350	290	100	100	14	1082	497
	160 L2	18,5	80	65	100	360	280	225	1020	990	15	350	290	100	100	14	1142	517
B-N, N 65-250	180 M2	22	80	65	100	360	280	225	1140	1110	15	350	290	100	100	14	1218	566
	200 L2	30	80	65	100	470	310	250	1360	1320	20	400	340	130	110	18	1328	596
	200 L2	37	80	65	100	470	310	250	1360	1320	20	400	340	130	110	18	1348	625
B-N, N 80-160	132 S2	7,5	100	80	125	360	280	225	1020	990	15	350	290	100	100	14	998	482
	160 M2	11	100	80	125	360	280	225	1020	990	15	350	290	100	100	14	1107	517
	160 M2	15	100	80	125	360	280	225	1020	990	15	350	290	100	100	14	1107	517
B-N, N 80-200	160 L2	18,5	100	80	125	360	280	225	1020	990	15	350	290	100	100	14	1167	571
	180 M2	22	100	80	125	470	310	250	1360	1320	20	400	340	130	110	18	1353	576
	200 L2	30	100	80	125	470	310	250	1360	1320	20	400	340	130	110	18	1373	625
B-N, N 80-250	180 M2	22	100	80	125	470	310	280	1360	1320	20	400	340	130	110	18	1353	596
	200 L2	30	100	80	125	470	310	280	1360	1320	20	400	340	130	110	18	1373	625
	200 L2	37	100	80	125	470	310	280	1360	1320	20	400	340	130	110	18	1373	625
B-N, N 80-250	225 M2	45	100	80	125	470	385	280	1250	840	205	480	430	95	16	24	1470	723
	250 M2	55	100	80	125	470	415	280	1250	840	205	480	430	95	16	24	1524	825
	280 S2	75	125	100	140	470	505	280	1400	940	230	510	450	95	17,5	24	1597	938

13.2. Disegno per lo smontaggio ed il rimontaggio

Drawing for dismantling and assembly
 Zeichnung für Demontage und Montage
 Dessin pour démontage et montage
 Dibujo para desmontaje y montaje
 Ritning för demontering och montering
 Onderdelentekening
 Чертеж для демонтажа и сборки
 组装与分解图



Estremità albero <i>Shaft extension Wellen- ende Bout d'arbre</i> Extremidad eje <i>Axeltapp Schachtver- lenging</i> Размер вала на торце 轴外伸部	Grandezza pompa <i>Pump size Pumpengröße Type de pompe</i> Dimensión bomba <i>Pumptyp Pompgrootte</i> Размер насоса 泵尺寸				Cuscinetto lato girante <i>Impeller side bearing</i> Lager laufrad-seitig <i>Palier côté roue</i> Rodamiento lado rodete <i>Lager pumphyulssida Waaier zijkant</i> Подшипник со стороны соединит. части 叶轮侧轴承	Cuscinetto lato giunto <i>Coupling side bearing</i> Lager kupplungs seitig <i>Palier côté accoupl.</i> Rodamiento lado acopl. <i>Lager kopplingssida Koppeling zijkant</i> Подшипник со стороны соединит. асти 联轴侧轴承	Ø tenuta albero <i>Shaft seal diameter</i> Ø Wellen- dichtung <i>Ø étanchéité arbre</i> Ø cierre eje <i>Axel-tätning diameter Diameter asafichting</i> Диаметр уплотнения на валу 轴封尺寸	
	3600 1/min ⁽¹⁾	3000 ⁽¹⁾	1800 1/min ⁽¹⁾					
d 24	32-125	32-160	32-200			6207 ZR	6306 ZR	Ø32
	40-125	40-160	40-200C					
	50-125					5 g ⁽²⁾	5 g ⁽²⁾	
	65-125E							
d 32			40-200A-B	40-250		6207 ZR	3306	Ø40
		50-160	50-200	50-250				
	65-125A-C	65-160	65-200			5 g ⁽²⁾	9 g ⁽²⁾	
		80-160						
d 42			80-200	65-250	65-315	6309 ZR	3309	Ø50
			100-200	80-250	80-315			
				100-250	100-315	10 g ⁽²⁾	16 g ⁽²⁾	
d 42				125-250				Ø50
					80-400	6311 ZR	3311	
					100-400			
				125-315	125-400			
				150-315	150-400	14 g ⁽²⁾	24 g ⁽²⁾	

(1) Velocità di rotazione massima ammessa per le diverse grandezze.

(2) Quantità di grasso per la lubrificazione, in grammi (g).

(1) *Maximum rotation speed permitted for the various sizes.*

(2) *Quantity of grease for re-lubrication in grams (g).*

(1) Max. zulässige Drehgeschwindigkeit für die verschiedenen Pumpengrößen.

(2) Fettmenge für die Neuschmierung in Gramm (g).

(1) *Vitesse maximale de rotation admise pour les différents types de pompe.*

(2) *Quantité de graisse nécessaire pour la lubrification, exprimée en grammes (g).*

(1) Velocidad de rotación máxima admitida para diversos tamaños.

(2) Cantidad de grasa para lubricación, en gramos, (g.).

(1) *Maximalt tillatet varvtal för olika storlekar.*

(2) *Mängd fett för återsmörjning i gram (g).*

(1) *Maximale rotatiesnelheid toegestaan voor verschillende formaten.*

(2) *Hoeveelheid vet voor nasmeren in grammen (g).*

(1) Максимально допустимая частота вращения для различных размеров.

(2) Количество смазки для повторной смазки в граммах.

(1) 各种型号允许的最高转速

(2) 以克 (g) 为单位的润滑脂加注量

13.3. Sezione minima dei conduttori
Minimum cross-sectional area of conductors
Kleinster Querschnitt der Leiter
Minimale dwarsdoorsnede van geleiders
Минимальное сечение проводников
导体最小截面积

Tab. 1

TAB 1IEC 60335-1

Corrente nominale dell'apparecchio Rated current of appliance Bemessungsstrom des Gerätes Dimensiestroom van apparaat Номинальный ток прибора 设备额定运行电流	Sezione nominale Nominal cross-sectional area Nennquerschnitt Nominale dwarsdoorsnede Номинальное сечение 导体额定截面积
A	mm ²
>3 + ≤6	0,75
>6 + ≤10	1,0
>10 + ≤16	1,5
>16 + ≤25	2,5
>25 + ≤32	4
>32 + ≤40	6
>40 + ≤63	10

IT DICHIARAZIONE DI CONFORMITÀ

Noi CALPEDA S.p.A. dichiariamo sotto la nostra esclusiva responsabilità che le Pompe N, N4, tipo e numero di serie riportati in targa, sono conformi a quanto prescritto dalle Direttive 2006/42/CE, 2009/125/CE, 2014/30/EU, 2014/35/EU e dalle relative norme armonizzate. Regolamento della Commissione N. 547/2012, 640/2009.

GB DECLARATION OF CONFORMITY

We CALPEDA S.p.A. declare that our Pumps N, N4, with pump type and serial number as shown on the name plate, are constructed in accordance with Directives 2006/42/EC, 2009/125/EC, 2014/30/EU, 2014/35/EU and assume full responsibility for conformity with the standards laid down therein. Commission Regulation No. 547/2012, 640/2009.

D KONFORMITÄTSERKLÄRUNG

Wir, das Unternehmen CALPEDA S.p.A., erklären hiermit verbindlich, daß die Pumpen N, N4, Typbezeichnung und Fabrik-Nr. nach Leistungsschild den EG-Vorschriften 2006/42/EG2009/125/EC, 2014/30/EU, 2014/35/EU entsprechen. ERP-Richtlinie N. 547/2012, 640/2009.

F DECLARATION DE CONFORMITE

Nous, CALPEDA S.p.A., déclarons que les Pompes N, N4, modèle et numero de série marqués sur la plaque signalétique sont conformes aux Directives 2006/42/CE, 2009/125/CE, 2014/30/EU, 2014/35/EU. Règlement de la Commission N° 547/2012, 640/2009.

E DECLARACION DE CONFORMIDAD

En CALPEDA S.p.A. declaramos bajo nuestra exclusiva responsabilidad que las Bombas N, N4, modelo y numero de serie marcados en la placa de características son conformes a las disposiciones de las Directivas 2006/42/CE, 2009/125/CE, 2014/30/EU, 2014/35/EU. Reglamento de la Comisión n.º 547/2012, 640/2009.

DK OVERENSSTEMMELSEERKLÆRING

Vi CALPEDA S.p.A. erklærer hermed at vore pumper N, N4, pumpe type og serie nummer vist på typeskiltet er fremstillet i overensstemmelse med bestemmelserne i Direktiv 2006/42/EC, 2009/125/EC, 2014/30/EU, 2014/35/EU og er i overensstemmelse med de heri indeholdte standarder. Kommissionens forordning nr. 547/2012, 640/2009.

NL CONFORMITEITSVERKLARING

Wij CALPEDA S.p.A. verklaren hiermede dat onze pompen N, N4, pomptype en serienummer zoals vermeld op de typeplaat aan de EG-voorschriften 2006/42/EU, 2009/125/EU, 2014/30/EU, 2014/35/EU voldoen. Verordening van de commissie nr. 547/2012, 640/2009.

SF VAKUUTUS

Me CALPEDA S.p.A. vakuutamme että pumppumme N, N4, malli ja valmistusnumero tyypikkilvcsstä, ovat valmistettu 2006/42/EU, 2009/125/EU, 2014/30/EU, 2014/35/EU direktiivien mukaisesti ja CALPEDA ottaa täyden vastuun siitä, että tuotteet vastaavat näitä standardeja. Komission asetus (EY) N:o 547/2012, 640/2009.

S EU NORM CERTIFIKAT

CALPEDA S.p.A. intyggar att pumpar N, N4, pumptyp och serienummer, visade på namnplåten är konstruerade enligt direktiv 2006/42/EC, 2009/125/EC, 2014/30/EU, 2014/35/EU. Calpeda åtar sig fullt ansvar för överensstämmelse med standard som fastställts i dessa avtal. Kommissionens förordning nr 547/2012, 640/2009.

PL DEKLARACJA ZGODNOŚCI

My, CALPEDA S.p.A. deklarujemy na naszą wyłączną odpowiedzialność, że Pompy N, N4, typ oraz numer umieszczone na tabliczkach znamionowych, są zgodne z zaleceniami Dyrektywy 2006/42/WE, 2009/125/WE, 2014/30/EU, 2014/35/EU, oraz odpowiednich norm harmonicznych. Rozporządzenia Komisji Nr 547/2012, 640/2009.

GR ΔΗΛΩΣΗ ΣΥΜΦΩΝΙΑΣ

Εμείς ως CALPEDA S.p.A. δηλώνουμε ότι οι αντλίες μας αυτές N, N4, με τύπο και αριθμό σειράς κατασκευής όπου αναγράφεται στην πινακίδα της αντλίας, κατασκευάζονται σύμφωνα με τις οδηγίες 2006/42/ΕΟΚ, 2009/125/ΕΟΚ, 2014/30/ΕΥ, 2014/35/ΕΥ, και αναλαμβάνουμε πλήρη υπευθυνότητα για συμμόρφωση (συμμόρφωση), με τα στάνταρς των προδιαγραφών αυτών. Κανονισμός Αρ. 547/2012, 640/2009 της Επιτροπής.

TR UYGUNLUK BEYANI

Bizler CALPEDA S.p.A. firması olarak N, N4, Pompalarımızın, 2006/42/EC, 2009/125/EC, 2014/30/EU, 2014/35/EU, direktiflerine uygun olarak imal edilidiklerini beyan eder ve bu standartlara uygunlug'una dair tüm sorumlug'u üstleniriz. 547/2012, 640/2009 sayılı Komisyon Yönetmeliği.

RU ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ

Компания "Calpeda S.p.A." заявляет с полной ответственностью, что насосы серий N, N4, тип и серийный номер которых указывается на заводской табличке соответствуют требованиям нормативов 2006/42/CE, 2009/125/CE, 2014/30/EU, 2014/35/EU. Постановление Комиссии № 547/2012, 640/2009.

中文

我们科沛达泵业有限公司声明我们制造的N, N4,(在标牌上的泵型号和序列号)均符合以下标准的相应目录:2006/95/EC,2009/125/EC,2014/30/EU,2014/35/EU.本公司遵循其中的标准并承担相应的责任.委员会条例 No.547/2012, 640/2009.

Montorso Vicentino, 09.2018

Il Presidente
Marco Mettiferio



Calpeda s.p.a. - Via Roggia di Mezzo, 39 - 36050 Montorso Vicentino - Vicenza / Italia
Tel. +39 0444 476476 - Fax +39 0444 476477 - E.mail: info@calpeda.it www.calpeda.com