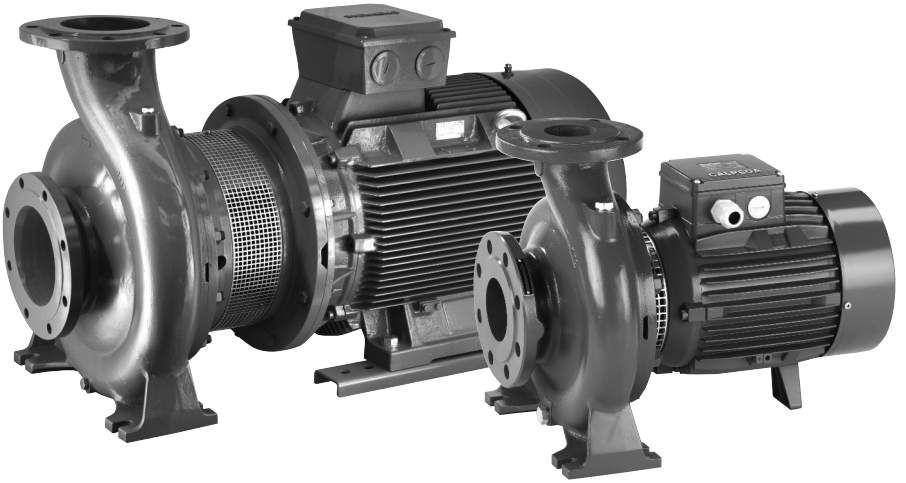
Pompe centrifughe monogiranti monoblocco
Close coupled centrifugal single-stage pumps
Einstufige Kreiselpumpen in Blockbauweise
Pompes centrifuges à un étage monobloc
Bombas monobloc centrifuga con un solo rodete
Monoblock enstegs centrifugalpump
Close coupled centrifugaalpompen
Pompy odśrodkowe jednowirnikowe jednostopniowe
Μονοβάθμιες, φυγόκεντρες κλειστού τύπου αντλίες
Моноблочные центробежные насосы
单级直联离心泵

NM, NMS, NM4, NMS4



CE

calpeda®

SUMMARY

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).

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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).


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.

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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

Close-coupled centrifugal pumps; electric motor with extended shaft directly connected to the pump up to 15 kW for NM4 and 30 kW for NM, new bracket construction for standard motors (stub-shaft construction) from 18,5 to 75 kW for NM4 and 37 to 75 kW for NM with integrated thrust bearing.
Pump casing with axial suction and radial delivery on top, main dimensions and performance according to EN 733.
NM..: version with pump casing and lanter bracket in cast iron.
B-NM..: 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, non-explosive and non-flammable, 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, non-explosive and non-flammable, 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.

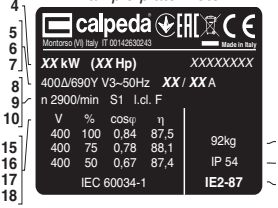
Improper use of the product reduces the safety and the efficiency of the device, Calpeda shall not be responsible for failure or accident due to improper use.

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

Example plate motor



1 Type 1
2 Delivery
3 Head
4 Rated power
5 Supply voltage
6 Fréquence
7 Nom. motor current
8 Rotation speed rpm
9 Operation Duty
10 Insul. class
11 Certifications
12 Serial number
13 Weight
14 Notes
15 Voltage
16 % Load
17 Power factor
18 Efficiency
19 Protection
20 Efficiency Class

3 TECHNICAL FEATURES

3.1 Technical data

Dimensions and weight (paragraph 12.1).
Nominal speed 1450/1750/2900/3450 rpm
Protection IP54
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

NM(S) (2900 1/min) up to	kW:	2,2	7,5	30	75
NM(S)**4** (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 (PN) up to 100 m (10 bar), 160 m (16 bar) pump in ductile iron.
The max. inlet water 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 allows 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

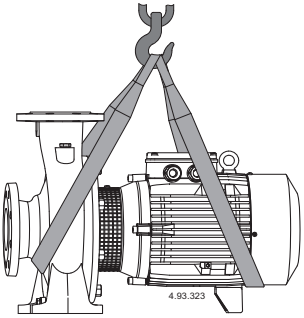
HAND PROTECTION
(gloves for protection against chemical, thermal and mechanical risks).

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.
Avoid to impact onto the package materials that could damage the pump.
If the weight exceeds 25 Kg the package must be handled by two person at the same time (see paragraph 13.1 dimensions and weights).

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)

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.

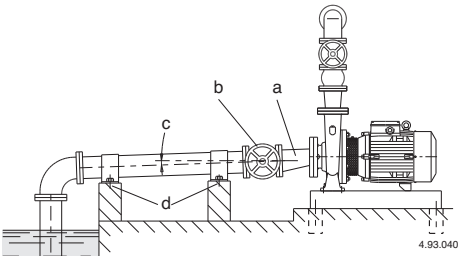
6.4. Installation
These pumps must be installed with the rotor axis horizontal and feet downwards.
Place the pump as close as possible to the suction source (with consideration given to the NPSH value).
Provide space around the pump for motor ventilation, to allow for checking of shaft rotation, for filling and draining the pump and to allow for collection of the liquid to be removed.

6.4.1. Pipes
Ensure the insides of pipes are clean and unobstructed before connection.
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.
The inside diameter of the pipe-work depends on the desired flow.
Provide a diameter assuring a liquid flow not greater

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.

6.4.2. Suction pipe

The suction pipe must be perfectly airtight and be led upwards in order to avoid air pockets.
Use an eccentric transition piece to join the suction connection with a horizontal pipe of larger diameter (fig. 2).



Avoid formation of air pockets in suction pipe:
a) eccentric transition piece;
b) gate valve with horizontal handwheel;
c) pipe leading upwards.
Avoid trasmission of stress to the pump:
d) supports and anchoring of pipes.

Fig. 2 Connection of pipes.

With a **pump located above the water level** (suction lift operation), fit a **foot valve with strainer** which must always remain immersed or a **check valve** on the suction connection.
With **a pump located below water level** (inflow under positive suction head) install a gate valve.

6.4.3. Delivery pipe

Fit a gate valve in the delivery pipe to adjust delivery, head, and absorbed power.
Install a pressure gauge.
With a geodetic head of over 15 m fit a check valve between the pump and the gate valve in order to protect the pump from water hammering.

6.4.4 Alignment of pump-motor unit (pumps NMS-NMS4)

ATTENTION: for NMS and NMS4 pumps a misalignment between pump feet and motor feet could cause vibration and early wear of elastic bearings, the seal and other internal parts.
Make sure the rotor turns freely when moved by hand. 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.

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 ⏚ marking.

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

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

ATTENTION: never allow washers or other metal parts to fall into the internal cable opening between the terminal box and stator. If this occurs, dismantle the motor to recover the object which has fallen inside.

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).
If the terminal box is provided with an inlet bushing, connect the power supply cord through a conduit.
For use in swimming pools (not when persons are in the pool), garden ponds and similar places, a **residual current device** with IΔN not exceeding 30 mA must be installed in the supply circuit.
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 with curve D appropriate for the rated current of the pump.
Single-phase NMM, are supplied with a capacitor connected to the terminals and (for 220-240 V - 50 Hz) with an incorporated thermal protector.

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. 3.

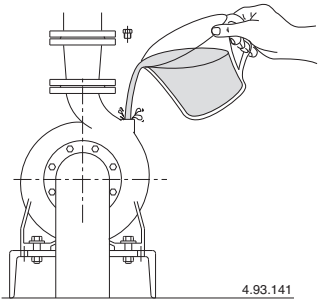


Fig. 3 Filling.

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

ON

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.

During maintenance operations external personnel is not allowed.

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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)

OFF

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. 4..

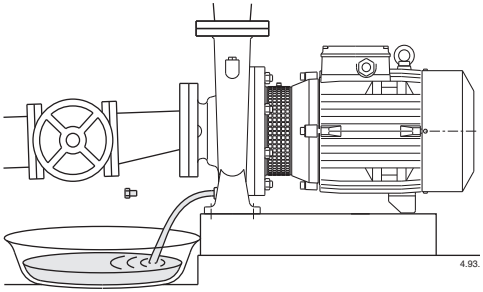

Fig. 4 Draining.

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)

OFF

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.

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

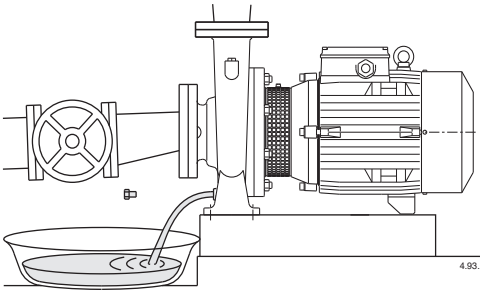

Fig. 4 Draining.

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

8.2 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 lubrification.

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

8.3 Bearings lubrication

Up to frame size 160 the motors have prelubricated bearings and they do not require any relubrication.

From frame size 180 the motors have grease nipples. A relubrication at regular intervals (about 5000 h) is recommended only in heavy working conditions, with high ambient temperatures. An excess of grease is harmful. Use lithium base grease for high temperatures.

8.4 Dismantling the system

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

8.5. 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.

By removing the nuts (14.28) the motor can be taken out complete with the impeller.

9. DISPOSAL

European Directive 2012/19/EU (WEEE)

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 (filling)
14.12	Plug (draining)
14.20	O-ring
14.24	Screw
14.28	Nut
28.00	Impeller
28.04	Impeller nut
28.12	Circlip
28.20	Impeller key
32.00	Lantern bracket
32.30	Guard
32.32	Screw
32.33	Caged Nut
34.00	Casing cover
36.00	Mechanical seal
36.50	Shoulder ring
46.00	Deflector
64.00	Pump shaft
66.00	Ball bearing, coupling side
66.18	Circlip
70.18	Screw
70.19	Nut
73.00	Pump-side bearing
76.00	Motor casing with winding
76.04	Cable gland
76.16	Support
76.20	Pin
76.54	Terminal box, set
78.00	Shaft with rotor packet
81.00	Fan-side bearing
82.00	Motor end shield, fan side
82.04	Compensating spring
88.00	Motor fan
90.00	Fan cover
90.04	Screw
92.00	Tie-bolt
94.00	Capacitor
94.02	Capacitor gland
98.00	Terminal box cover
98.04	Screw
98.08	Gasket
99.00	Motor, complete

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

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，将撤消“CE 声明”和质保。

中文

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的风险。


忽略有关电气的警告，可能导致产品损坏或人身安全的风险


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
直联离心泵，对于15KW以下的NM4系列和30KW以下的NM系列水泵，电机具有加长轴与泵直接相连。对于18.5KW至75KW的NM4系列和37KW至75KW的NM系列标准电机（短轴结构），则装配带有完整止推轴承的新支架结构。
泵壳带有轴向吸入口和径向排出口，主要尺寸和性能按照EN733.
NM:泵壳和笼型支架为铸铁结构
B-NM.: 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，不易燃烧的，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，不易燃烧的，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

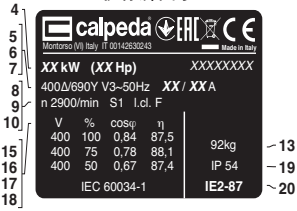
不当使用将降低本产品的安全性和效率,由于不当使用而造成的损坏和意外,CALPEDA不承担责任

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标牌的图片

泵标牌图示

电机标牌图示



1 型号
2 流量
3 扬程
4 额定功率
5 电源电压
6 频率
7 电流
8 转速rpm
9 运行工作制
10 绝缘.等级
11 认证
12 序列号
13 重量
14 注释
15 电压
16 %负荷
17 功率因数
18效率
19 保护等级
20 能效等级

3 技术特性
3.1 技术参数
尺寸和重量（见12.1）
额定转速 1450/1750/2900/3450rpm
保护等级 IP54
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

NM(S) (2900 1/min) 直至	kW:	2,2	7,5	30	75
NM(S)**4** (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℃

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

中文

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

中文

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

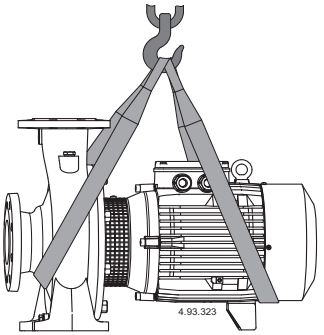
标示的个别保护装置

手的保护
(防热、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)

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
客户应将本产品妥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

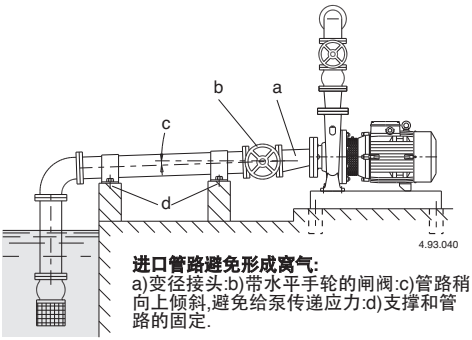
拆开的包装材料应根据产品使用国当地的法律规定遗弃或再利用
缓慢提升泵-电机组(见5.1章节 图1)
确保它不会晃来晃去,以避免因不平衡而倾倒.

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 管道
应确保连接前所有管道内部干净、无堵塞；
注意:管道与水泵的连接应当支撑可靠，并紧固联接，以确保不传递应力应变及振动到泵上章.
管路系统的内径依所需流量而定
管路直径应确保进口流速不超过1.5m/s出口流速不超过3m/s
管路直径不允许小于泵的接口尺寸

6.4.2 进水管

进水管应气密良好并稍向上倾斜以避免窝气
在较大尺寸的水平进水管和泵的进水口之间安装一变径接头（见图2.）



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.

图2 管路连接

当泵置于水面之上时(吸入操作),应在吸入端安装脚阀带有过滤器的底阀，该底阀应保持一直浸入水中或单向阀
当泵位于水面之下时(灌入操作)应安装一闸阀

6.4.3. 出水管

在出水管上安装一闸阀以调节出水量、扬程和净功率
安装一压力表
当落差超过15M时应在泵和闸阀之间安装一止回阀以避免水锤对泵的损害

6.4.4 Alignment of pump-motor unit (pumps NMS-NMS4)

ATTENTION: for NMS and NMS4 pumps a misalignment between pump feet and motor feet could cause vibration and early wear of elastic bearings, the seal and other internal parts.
Make sure the rotor turns freely when moved by hand. 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.

6.5. 电气联接

OFF

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 ⏚.

请对照电源电压和铭牌上所标数值，根据接线盒内盖上的电路图联接电源.

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.

注意：绝对不允许将垫片等金属部件掉入电机接线盒的定子线圈中.
如果发生此种问题，必须拆开电机，取出部件。

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。

如果接线盒的进线口是套管，则应通过套管连接电线。

作为用于游泳池，花园池塘的泵，必须在电源线路中安装漏电保护器，其灵敏度不大于30毫安.

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曲线 D.

对于单相的**NMM,**泵，提供一个连接在接线柱上的电容，对于220-240V-50Hz的电源，还提供一个相连的热保护装置.

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。 f_N的赫兹。

中文

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

7.2 首次启动

OFF

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.3).

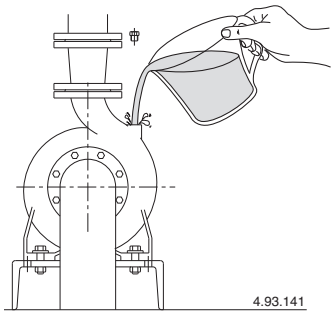


图.3 灌泵

当吸入端液面高于泵时(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

ON

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)

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)

OFF

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.4).

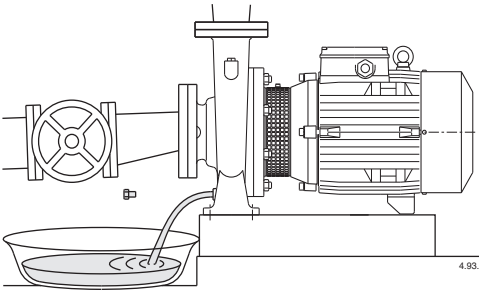


图.4 排放

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)

OFF

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.4).

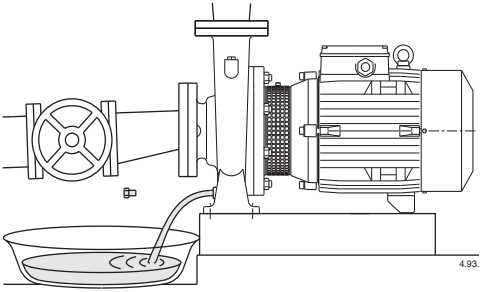


图.4 排放

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.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.

8.3.轴承的润滑
160以下的电机配有润滑好的轴承,它们无需再润滑.
从180开始,电机有润滑脂加油嘴,只有在高温,高强度的工作状态下才建议定期加润滑脂(大约5000小时).
多余的润滑脂是有害的.在高温状态下应使用锂基润滑脂.

8.4 系统的分解
分解前，关闭进出口隔栅.

8.5. 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。
拧下螺母（14.28）可将完整的电机带着叶轮一起卸下来,.

9. 处理

欧盟WEEE指令 2012/19/EU

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

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

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
28.12:弹性挡圈
28.20:叶轮键
32.00:笼型支架
32.30:护网
32.32:螺丝
32.33:螺母
34.00:泵壳盖
36.00:机械密封
36.50:密封挡圈
46.00:挡水圈
64.00:泵轴
66.00:滚珠轴承(联轴器侧)
66.18:弹性挡圈
70.18:螺丝
70.19:螺母
73.00:泵侧轴承
76.00:带绕组的
76.04:电缆密
76.16:支脚
76.20:销
76.54:接线盒
78.00:轴与转子
81.00:风扇侧轴
82.00:风扇侧
82.04:补偿弹
88.00:电机风
90.00:风扇罩
90.04:螺丝
92.00:连接螺栓
94.00:电容
94.02:电容套
98.00:接线盒
98.04:螺丝
98.08:垫圈
99.00:电机总成

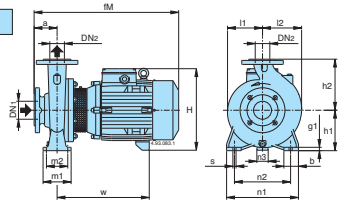
12. 常见故障和解决方法

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 3c)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损 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

1



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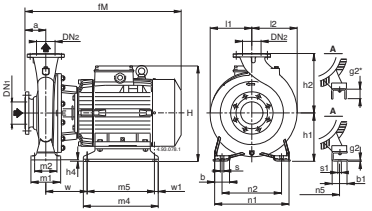

	NM	mm																								kg
		DN1	DN2	a	fM	h1	h2	H	h4	m1	m2	n1	n2	n3	n5	w1	b	b1	s	s1	l1	l2	w	m4	m5	g1	g2	
1	NM 32/12DE-FE NM 32/12S/A-A/A	50	32	80	405	112	140	240	-	100	70	190	140	37	-	-	50	-	14	-	93	97	245	-	-	12	-	24-24 27-26
1	NM 32/16B/A NM 32/16A/B	50	32	80	410 450	132	160	260	-	100	70	240	190	47	-	-	50	-	14	-	120	120	250 290	-	-	12	-	34 39
1	NM 32/20D/B NM 32/20C/A NM 32/20A/B	50	32	80	450 475 475	160	180	288 298 298	-	100	70	240	190	62 60 60	-	-	50	-	14	-	140	140	290 295 295	-	-	12	-	42 47 51
1	NM 40/12C/B-F/B NM 40/12A/C	65	40	80	410 450	112	140	240	-	100	70	210	160	37	-	-	50	-	14	-	100	113	250 290	-	-	12	-	29-27 32
1	NM 40/16C/C NM 40/16B/B NM 40/16A/C	65	40	80	450 475 475	132	160	260 270 270	-	100	70	240	190	47 45 45	-	-	50	-	14	-	121	122	290 295 295	-	-	10	-	39 46 48
1	NM 40/20C/B-D/B NM 40/20A/A-AR/A-B/A	65	40	100	495 528	160	180	298 320	-	100	70	265	212	60 49	-	-	50	-	14	-	142	142	295 279	-	-	12	-	54-53 73-67-67
1	NM 40/25C/C NM 40/25B/C NM 40/25A/C	65	40	100	640 690 715	180	225	365	-	125	95	320	250	50	-	-	65	-	14	-	175	175	400 460 460	-	-	15	-	108 117 139
1	NM 50/12F/C NM 50/12D/B NM 50/12A/C-S/C	65	50	100	470 495 495	132	160	260 270 270	-	100	70	240	190	47 45 45	-	-	50	-	14	-	122	137	290 295 295	-	-	10	-	40 47 50,5-50,6
1	NM 50/16A/B-B/B	65	50	100	528	160	180	320	-	100	70	265	212	49	-	-	50	-	14	-	126	140	279	-	-	12	-	70,5-64
1	NM 50/20B/C NM 50/20A/C NM 50/20S/C	65	50	100	640 690 720	160	200	345	-	100	70	265	212	40	-	-	50	-	14	-	140	153	400 460 460	-	-	15	-	100 109 131
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1	NM 65/12E/C NM 65/12A/B-C/B	80	65	100	500 533	160	180	298 320	-	125	95	280	212	60 49	-	-	65	-	14	-	130	154	300 284	-	-	12	-	51,9 70,7-64,7
1	NM 65/16D/B NM 65/16C/C NM 65/16B/C NM 65/16A/C-AR	80	65	100	528 640 690 715	160	200	320 345 345 345	-	125	95	280	212	49 40 40 40	-	-	65	-	14	-	140	161	279 410 410 460	-	-	12	-	70,5 93 112 127
1	NM 65/20C/C NM 65/20B/C	80	65	100	715	180	225	365	-	125	95	320	250	50	-	-	65	-	14	-	159	179	460	-	-	12	-	134 140
2	NM 65/20A/A	80	65	100	762	202	225	408	22	125	95	320	250	-	254	20	65	90	14	14	159	179	182	400	360	-	42*	172
2	NM 65/25C/A	80	65	100	762	202	250	408	2	160	120	360	280	-	254	20	80	90	18	14	179	185	182	400	360	-	42*	187
1	NM 80/16E/B NM 80/16D/C NM 80/16C/C NM 80/16B/C NM 80/16A/C	100	80	125	553 670 720 745 745	180	225	340 365 365 365 365	-	125	95	320	250	60 50 50 50 50	-	-	65	-	14	-	153	181	279 415 415 465 465	-	-	12	-	77,5 101 120 132 138
2	NM 80/20B	100	80	125	787	202	250	408	22	125	95	345	280	-	254	20	65	90	18	14	170	194	182	400	360	-	42*	180
2	NM 80/25E	100	80	125	787	202	280	408	2	160	120	400	315	-	254	20	80	90	18	14	191	210	182	400	360	-	42*	193
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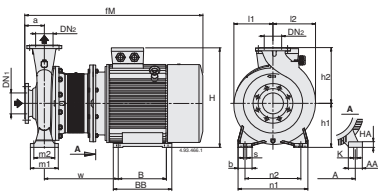
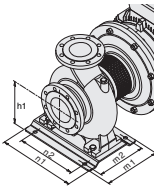
2	NM 100/20D	125	100	125	787	202	280	408	2	160	120	360	280	-	254	20	80	90	18	14	180	212	182	400	360	-	42*	189

1



1° - 2°



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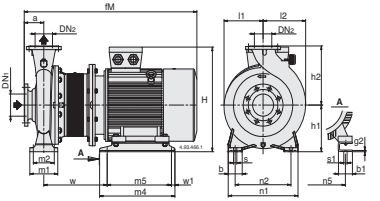
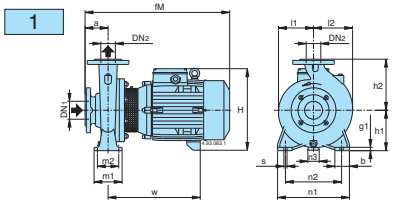
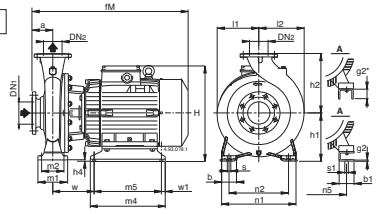


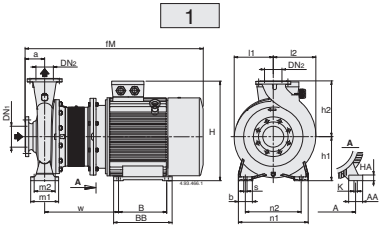
	NMS	mm																									kg
		DN1	DN2	a	fM	h1	h2	H	m1	m2	n1	n2	A	n5	w1	b	AA	b1	s	K	s1	l1	l2	w	BB	m4	B	m5	HA	g2	
2	NMS 65/250B/A	80	65	100	961	200	250	486	160	120	360	280	-	279	20	80	-	70	18	-	15	179	195	333	-	440	-	400	-	20	269
1	NMS 65/250A/B	80	65	100	1009	200	250	515	160	120	360	280	318	-	-	80	70	-	18	19	-	200	200	406	355	-	305	-	25	-	321
1	NMS 80/200A	100	80	125	986	180	250	466	125	95	345	280	279	-	-	65	65	-	14	19	-	170	194	394	328	-	279	-	20	-	256
2	NMS 80/250D	100	80	125	986	200	280	486	160	120	400	315	-	279	20	80	-	70	18	-	15	191	211	333	-	440	-	400	-	20	276
1	NMS 80/250C/A	100	80	125	1034	200	280	515	160	120	400	315	318	-	-	80	70	-	18	19	-	200	210	406	355	-	305	-	25	-	345
1°	NMS 80/250B/A	100	80	125	1129	225	280	563	298	258	410	315	356	-	-	-	80	-	18	19	-	225	225	445	361	-	311	-	34	-	437
2°	NMS 80/250A/A	100	80	125	1198	280	280	690	260	220	410	315	-	406	25	-	-	100	18	-	24	275	275	443	-	500	-	450	-	8	534
2	NMS 100/200C	125	100	125	986	200	280	486	160	120	360	280	-	279	20	80	-	70	18	-	15	180	212	333	-	440	-	400	-	20	270
1	NMS 100/200B/A	125	100	125	1034	200	280	515	160	120	360	280	318	-	-	80	70	-	18	19	-	200	212	406	355	-	305	-	25	-	338
1°	NMS 100/200A/A	125	100	125	1129	225	280	563	298	258	410	315	356	-	-	-	80	-	18	19	-	225	225	445	361	-	311	-	34	-	426
2°	NMS 100/250B/A	125	100	140	1213	280	280	690	260	220	410	315	-	440	25	-	-	100	18	-	24	275	275	443	-	500	-	450	-	8	545
1°	NMS 100/250A/A	125	100	140	1286	280	280	713	260	220	410	315	457	-	-	-	100	-	18	24	-	275	275	516	479	-	368	-	40	-	648

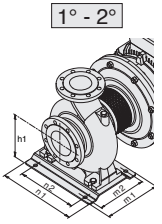
13. ALLEGATI 13.1 Dimensioni e pesi - Dimensions and weights

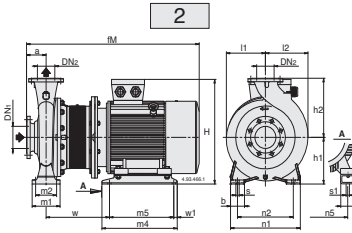




	B- NM	mm																							kg
		DN1	DN2	a	fM	h1	h2	H	h4	m1	m2	n1	n2	n3	n5	w1	b	b1	s	s1	l1	l2	w	m4	m5	g1	g2	B-NM
1	B-NM 32/12D-F B-NM 32/12S/A-A/A	50	32	80	405	112	140	240	-	100	70	190	140	37	-	-	50	-	14	-	93	97	245	-	-	12	-	27-27 30-28
1	B-NM 32/16B/A B-NM 32/16A/B	50	32	80	410 450	132	160	260	-	100	70	240	190	47	-	-	50	-	14	-	120	120	250 290	-	-	12	-	38,5 42
1	B-NM 32/20D/B B-NM 32/20C/A B-NM 32/20A/B	50	32	80	450 475 475	160	180	288 298 298	-	100	70	240	190	45 60 60	-	-	50	-	14	-	140	140	290 295 295	-	-	12	-	47,5 56,5 58
1	B-NM 40/12C/A-F/A B-NM 40/12A/B	65	40	80	410 450	112	140	240	-	100	70	210	160	37	-	-	50	-	14	-	100	113	250 290	-	-	12	-	33-31 36
1	B-NM 40/16C/B B-NM 40/16B/A B-NM 40/16A/B	65	40	80	450 475 475	132	160	260 270 270	-	100	70	240	190	47 45 45	-	-	50	-	14	-	121	122	290 295 295	-	-	10	-	43 50 53
1*	B-NM 40/20C/B-D/B B-NM 40/200A/A-AR/A-B/A	65	40	100	495 583	160	180	298 320	-	100	70	265	212	60 49	-	-	50	-	14	-	142	142	295 334	-	-	12	-	59,5-59 80,5-75
2	B-NM 4025/C/C B-NM 4025/B/C B-NM 4025/A/C	65	40	100	635 685 710	192	225	377	12	125	95	320	250	-	216	20	65	69	14	12	175	175	174	298	258	-	6	124 130 159,5
1	B-NM 50/12F/B B-NM 50/12D/A B-NM 50/12A/B-S/B	65	50	100	470 495 495	132	160	260 270 270	-	100	70	240	190	47 45 45	-	-	50	-	14	-	122	137	290 295 295	-	-	10	-	44 52 54,5-54
1*	B-NM 50/160A/B-B/B	65	50	100	583	160	180	320	-	100	70	265	212	49	-	-	50	-	14	-	126	140	334	-	-	12	-	80-74,5
2	B-NM 50/200B/C B-NM 50/200A/C B-NM 50/200S/C	65	50	100	695 745 769	192	200	377	32	100	70	265	212	-	216	20	50	69	14	12	140	153	234	298	258	-	6	123 132 154
2	B-NM 5025/C/C B-NM 5025/B/C B-NM 5025/A/C	65	50	100	685 710 710	192	225	377	12	125	95	320	250	-	216	20	65	69	14	12	175	175	174	298	258	-	6	135 156 161
1	B-NM 65/12E/A	80	65	100	500	160	180	298	-	125	95	280	212	60	-	-	65	-	14	-	130	154	300	-	-	12	-	57,3
1*	B-NM 65/125A/B-C/B	80	65	100	588	160	180	320	-	125	95	280	212	49	-	-	65	-	14	-	130	154	339	-	-	12	-	80,5-74,5
1*	B-NM 65/160D/B B-NM 65/160C/C	80	65	100	583 660	160	200	320 345	-	125	95	280	212	49 40	-	-	65	-	14	-	140	179	334 430	-	-	12	-	80,2 101
2	B-NM 65/160B/C B-NM 65/160A/C-AR	80	65	100	745 770	192	200	377	32	125	95	280	212	-	216	20	65	69	14	12	140	179	234	298	258	-	6	140 152
2	B-NM 65/200B/C-C/C B-NM 65/200A/B	80	65	100	775 825	192 202	225	377 408	12 22	125	95	320	250	- -	216 254	20	65	69 90	14	12 14	159	179	239 245	298 400	258 360	- -	6 42*	167-160 190
	B-NM 65/250C/B	80	65	100	825	202	250	408	2	160	120	360	280	-	254	20	80	90	18	14	179	195	245	400	360	-	42*	210
1*	B-NM 80/160E/B B-NM 80/160D/C	100	80	125	608 685	180	225	340 365	-	125	95	320	250	60 50	-	-	65	-	14	-	153	181	334 430	-	-	12	-	89,4 109
2	B-NM 80/160C/C B-NM 80/160B/C B-NM 80/160A/C	100	80	125	775 800 800	192	225	377	12	125	95	320	250	-	216	20	65	69	14	12	153	181	239	298	258	-	6	149 161 167



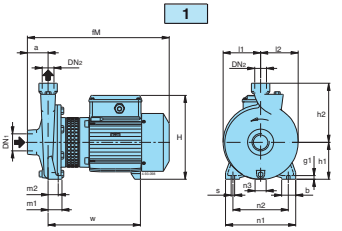




	B-NMS	mm																									kg
		DN1	DN2	a	fM	h1	h2	H	m1	m2	n1	n2	A	n5	w1	b	AA	b1	s	K	s1	l1	l2	w	BB	m4	B	m5	HA	g2	
2	B-NMS 65/250B/A	80	65	100	961	200	250	486	160	120	360	280	-	279	20	80	-	70	18	-	15	179	195	333	-	440	-	400	-	20	
1	B-NMS 65/250A/B	80	65	100	1009	200	250	515	160	120	360	280	318	-	-	80	70	-	18	19	-	200	200	406	355	-	305	-	25	-	353
2	B-NMS 80/200B/A	100	80	125	936	180	250	387	125	95	345	280	-	254	20	65	-	60	14	-	15	175	194	331	-	350	-	310	-	5	
1	B-NMS 80/200A/A	100	80	125	986	180	250	466	125	95	345	280	279	-	-	65	65	-	14	15	-	170	194	394	328	-	279	-	20	-	266
2	B-NMS 80/250E/A	100	80	125	936	200	280	407	160	120	400	315	-	254	20	80	-	60	18	-	15	191	210	331	-	394	-	354	-	6	
2	B-NMS 80/250D/A	100	80	125	986	200	280	486	160	120	400	315	-	279	20	80	-	70	18	-	15	191	212	333	-	440	-	400	-	20	287
1	B-NMS 80/250C/A	100	80	125	1034	200	280	515	160	120	400	315	318	-	-	80	70	-	18	19	-	200	210	406	355	-	305	-	25	-	
1*	B-NMS 80/250B/A	100	80	125	1129	225	280	563	298	258	410	315	356	-	-	-	80	-	18	19	-	225	225	445	361	-	311	-	34	-	
2*	B-NMS 80/250A/A	100	80	125	1198	280	280	690	260	220	410	315	-	406	25	-	-	100	18	-	24	275	275	443	-	500	-	450	-	8	
2	B-NMS 100/200E/A	125	100	125	882	200	280	387	160	120	360	280	-	216	20	80	-	69	18	-	12	180	212	322	-	298	-	258	-	6	250
2	B-NMS 100/200D/A	125	100	125	936	200	280	407	160	120	360	280	-	254	20	80	-	60	18	-	15	180	212	331	-	394	-	354	-	6	
2	B-NMS 100/200C/A	125	100	128	1034	200	280	535	160	120	360	280	-	279	20	80	-	70	18	-	15	180	212	345	-	440	-	400	-	20	
1	B-NMS 100/200B/A	125	100	125	1034	200	280	515	160	120	360	280	318	-	-	80	70	-	18	19	-	200	212	406	355	-	305	-	25	-	352
1*	B-NMS 100/200A/A	125	100	125	1129	225	280	563	298	258	410	315	356	-	-	-	80	-	18	19	-	225	225	445	361	-	311	-	34	-	
2*	B-NMS 100/250B/A	125	100	140	1213	280	280	690	260	220	410	315	-	440	25	-	-	100	18	-	24	275	275	443	-	500	-	450	-	8	
1*	B-NMS 100/250A/A	125	100	140	1286	280	280	713	260	220	410	315	457	-	-	-	100	-	18	24	-	275	275	516	479	-	368	-	40	-	

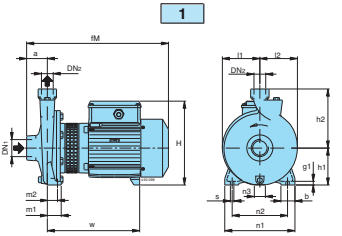
13. ALLEGATI

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



Standard construction

Picture	NM4	DN1 ISO 228	DN2	mm																kg
				a	fM	h1	h2	H	m1	m2	n1	n2	n3	b	s	l1	l2	w	g	
1	NM4 25/12A/A	G 1 1/2	G 1	56	313	90	140	199	37,5	27,5	170	130	9	38	9,5	85	88	250	10	13,5
	NM4 25/160AE-BE			56	380	100	160	228	37,5	27,5	190	150	30	38	9,5	102	102	250	10	17,5
	NM4 25/200B/A-C/A			63	385	125	180	253	45	32,5	245	200	49	45	11,5	125	125	250	11	23-21,5
	NM4 25/200A/C			63	425	125	180	253	45	32,5	245	200	49	45	11,5	125	125	250	11	27

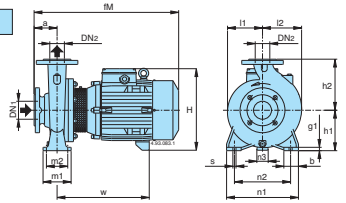


Bronze construction **B-NM4**

Picture	B-NM4	DN1 ISO 228	DN2	mm																kg
				a	fM	h1	h2	H	m1	m2	n1	n2	n3	b	s	l1	l2	w	g	
1	B-NM4 25/160AE-BE	G 1 1/2	G 1	56	380	100	160	228	37,5	27,5	190	150	30	38	9,5	102	102	250	10	19-19
	B-NM4 25/200B/A-C/A			63	400	125	180	253	45	32,5	245	200	49	45	11,5	125	125	250	11	25-23
	B-NM4 25/200A/C			63	440	125	180	253	45	32,5	245	200	49	45	11,5	125	125	250	11	29

13. ALLEGATI 13.1 Dimensioni e pesi - Dimensions and weights

1



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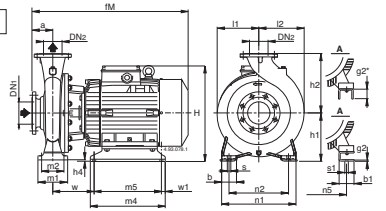
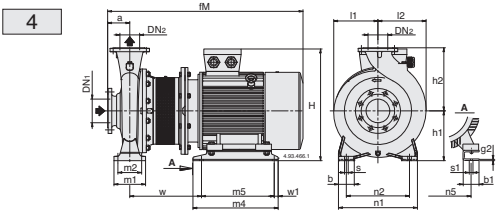


	NM4	mm																							kg
		DN1	DN2	a	fM	h1	h2	H	h4	m1	m2	n1	n2	n3	n5	w1	b	b1	s	s1	l1	l2	w	m4	m5	g1	g2	
2	NM4 32/16AE-BE	50	32	80	410	132	160	260	-	100	70	240	190	47	-	-	50	–	14	-	120	120	255	-	-	12	-	30,5-30
	NM4 32/20BE NM4 32/20A/B	50	32	80	410 450	160	180	288	-	100	70	240	190	62	-	-	50	-	14	-	140	140	255	-	-	12	-	35 42
	NM4 40/16B/A-C/A NM4 40/16A/C	65	40	80	410 450	132	160	268	-	100	70	240	190	47	-	-	50	-	14	-	121	121	255	-	-	10	-	32,4-30,6 39
	NM4 40/20A/B-B/B	65	40	100	495	160	180	298	-	100	70	265	212	62	-	-	50	-	14	-	142	142	295	-	-	12	-	49,6-49
	NM4 40/25C/C NM4 40/25A/B-B/C	65	40	100	495 528	180	225	308 340	-	125	95	320	250	60	-	-	65	-	14	-	175	175	300 279	-	-	15	-	67,7 78-76,6
	NM4 50/16A/C-B/C	65	50	100	495	160	180	298	-	100	70	265	212	62	-	-	50	-	14	-	126	140	295	-	-	12	-	40-39,5
	NM4 50/20B/C-C/C NM4 50/20A/C	65	50	100	505 528	160	200	288 320	-	100	70	265	212	62 60	-	-	50	-	14	-	140	153	310 279	-	-	14	-	52,5-44,5 57
	NM4 50/25C/C-D/B NM4 50/25A/B-B/B	65	50	100	528	180	225	340	-	125	95	320	250	60	-	-	65	-	14	-	175	175	279	-	-	15	-	68 85,5-78
	NM4 65/16A/C-B/C-C/C NM4 65/16S/A	80	65	100	495 528	160	200	288 320	-	125	95	280	212	62 60	-	-	65	-	14	-	140	161	300 279	-	-	12	-	53-49,3-48,7 62,3
	NM4 65/20A/B-B/C	80	65	100	528	180	225	340	-	125	95	320	250	60	-	-	65	-	14	-	159	178	279	-	-	12	-	69-68,7
	NM4 65/25B/C NM4 65/25A/B	80	65	100	543 645	200	250	360 385	-	160	120	360	280	60	-	-	80	-	18	-	179	195	294 405	-	-	15	-	97,4 118
	NM4 65/31C/B-B/B NM4 65/31A/B	80	65	125	670 720	225	280	410	-	160	120	400	315	75	-	-	80	-	18	-	220	220	415 465	-	-	20	-	153-164 176
	NM4 80/16B/C-C/B NM4 80/16A/C	100	80	125	520 553	180	225	308 340	-	125	95	320	250	62 60	-	-	65	-	14	-	153	181	300 279	-	-	12	-	59,6-55,6 69,8
	NM4 80/20A/A-B/A-C/B	100	80	125	563	180	250	340	-	125	95	345	280	60	-	-	65	-	14	-	170	194	289	-	-	15	-	91-82-74,5
	NM4 80/25C/A NM4 80/25B/B-A/B	100	80	125	563 670	200	280	360 385	-	160	120	400	315	60	-	-	80	-	18	-	191	210	289 415	-	-	20	-	102 124-135
	NM4 80/31C/B	100	80	125	720	250	315	435	-	160	120	400	315	90	-	-	80	-	18	-	222	234	465	-	-	17	-	181
3	NM4 80/31A-B	100	80	125	787	260	315	466	10	160	120	400	315	-	254	20	80	74	18	14	222	234	147	435	395	-	6	269-248
2	NM4 100/20B/A-C/A NM4 100/20A/C	125	100	125	563 665	200	280	360 385	-	160	120	360	280	60	-	-	80	-	18	-	180	212	289 400	-	-	20	-	99-90 109
	NM4 100/25B/B NM4 100/25A/B	125	100	140	685 735	225	280	410	-	160	120	400	315	75	-	-	80	-	18	-	205	233	415 465	-	-	20	-	143 152
3	NM4 100/31B-C	125	100	140	802	260	315	466	10	160	120	400	315	-	254	20	80	74	18	14	230	250	147	435	395	-	6	280-261
2	NM4 125/25E/B-D/B NM4 125/25C/B	150	125	140	685 735	250	355	435	-	160	120	400	315	90	-	-	80	-	18	-	235	268	415 465	-	-	20	-	149-161 173
3	NM4 125/25A-B	150	125	140	802	260	355	466	10	160	120	400	315	-	254	20	80	74	18	14	235	268	147	435	395	-	6	261-243

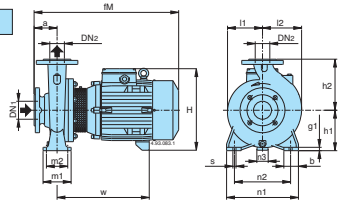
4



	NMS4	mm																							kg
		DN_1	DN_2	a	fM	h1	h2	H	m1	m2	n1	n2	n5	w1	b	b1	s	s1	l1	l2	w	m4	m5	g2	
4	NMS4 80/315S	100	80	125	968	250	315	536	160	120	400	315	279	25	80	70	18	15	222	234	312	432	382	6	
	NMS4 80/400C/B	125	80	125	973	280	355	566	160	120	435	355	279	25	80	70	18	15	268	269	318	520	435	6	339
	NMS4 80/400B/B	125	80	125	1003	280	355	566	160	120	435	355	279	25	80	70	18	15	268	269	318	520	435	6	355
	NMS4 80/400A/B	125	80	125	1051	280	355	595	160	120	435	355	318	25	80	83	18	19	268	269	334	540	455	6	413
	NMS4 80/400S	125	80	125	1118	280	355	618	160	120	435	355	356	55	80	103	18	19	268	269	380	540	460	8	490
	NMS4 100/315A/A	125	100	140	983	250	315	536	160	120	400	315	279	25	80	70	18	15	230	250	312	432	382	6	308
	NMS4 100/400C/A	125	100	140	1018	280	355	566	200	150	500	400	279	25	100	70	22	15	268	280	318	520	435	6	366
	NMS4 100/400B/A	125	100	140	1066	280	355	595	200	150	500	400	318	25	100	83	22	19	268	280	334	540	455	6	419
	NMS4 100/400A/A	125	100	140	1138	280	355	618	200	150	500	400	356	55	100	103	22	19	268	280	385	540	460	8	506
	NMS4 125/315C/A	150	125	140	988	280	355	566	200	150	500	400	279	25	100	70	22	15	247	278	318	520	435	6	331
	NMS4 125/315B/A	150	125	140	1018	280	355	566	200	150	500	400	279	25	100	70	22	15	247	278	318	520	435	6	350
	NMS4 125/315A/A	150	125	140	1066	280	355	595	200	150	500	400	318	25	100	83	22	19	247	278	334	540	455	6	409
	NMS4 125/400C/A	150	125	140	1138	315	400	653	200	150	500	400	356	25	100	103	22	19	280	305	410	540	461	8	524
	NMS4 125/400B/A	150	125	140	1198	315	400	653	200	150	500	400	356	25	100	103	22	19	280	305	410	540	461	8	574
	NMS4 125/400A/A	150	125	140	1237	315	400	725	200	150	500	400	406	25	100	100	22	24	280	305	454	540	461	8	665
	NMS4 150/315D/A	200	150	160	1008	280	400	566	200	150	550	450	279	25	100	70	22	15	260	298	318	520	435	6	349
	NMS4 150/315C/A	200	150	160	1038	280	400	566	200	150	550	450	279	25	100	70	22	15	260	298	318	520	435	6	374
	NMS4 150/315B/A	200	150	160	1086	280	400	595	200	150	550	450	318	25	100	83	22	19	260	298	334	540	455	6	421
	NMS4 150/315A/A	200	150	160	1158	280	400	618	200	150	550	450	356	55	100	103	22	19	260	298	385	540	460	8	501
	NMS4 150/400C/A	200	150	160	1218	315	450	653	200	150	550	450	356	25	100	103	22	19	295	328	410	540	461	8	594
	NMS4 150/400B/A	200	150	160	1257	315	450	725	200	150	550	450	406	25	100	100	22	24	295	328	454	540	461	8	681
	NMS4 150/400A/A	200	150	160	1330	315	450	748	200	150	550	450	457	45	100	100	22	24	295	328	482	625	535	6	845

13. ALLEGATI 13.1 Dimensioni e pesi - Dimensions and weights

1



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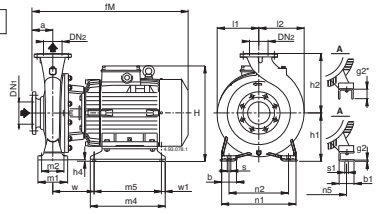
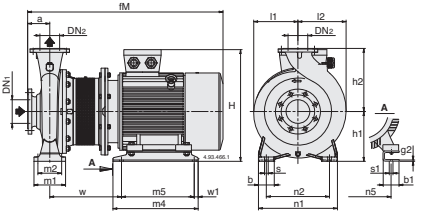


	B-NM4	mm																							kg
		DN1	DN2	a	fM	h1	h2	H	h4	m1	m2	n1	n2	n3	n5	w1	b	b1	s	s1	l1	l2	w	m4	m5	g1	g2	
2	B-NM4 32/16A-B	50	32	80	410	132	160	260	-	100	70	240	190	47	-	-	50	-	14	-	120	120	255	-	-	12	-	38-38
2	B-NM4 32/20B B-NM4 32/20A/A	50	32	80	410 450	160	180	288	-	100	70	240	190	62	-	-	50	-	14	-	140	140	255	-	-	12	-	41 45
2	B-NM4 40/16B-C B-NM4 40/16A/B	65	40	80	410 450	132	160	260	-	100	70	240	190	47	-	-	50	-	14	-	121	121	255	-	-	10	-	36,6-34,7 43
	B-NM4 40/20A/B-B/B	65	40	100	495	160	180	298	-	100	70	265	212	62	-	-	50	-	14	-	142	142	295	-	-	12	-	55-55
3	B-NM4 4025/C/C B-NM4 4025/A/B-B/C	65	40	100	535 560	190	225	318 350	10	125	95	320	250	- -	140 190	15	65	54 60	14	10 12	175	175	156 125	205 280	175 250	-	6	73 89-73
2	B-NM4 50/16A/B-B/B	65	50	100	495	160	180	298	-	100	70	265	212	62	-	-	50	-	14	-	126	140	295	-	-	12	-	55-55
3	B-NM4 5025/C/C-D/B B-NM4 5025/A/B-B/B	65	50	100	560	190	225	350	10	125	95	320	250	-	190	15	65	60	14	12	175	175	125	280	250	-	6	79,5 105-92
2	B-NM4 65/16A/C-B/C-C/C B-NM4 65/16S/A	80	65	100	495 528	160	200	306 320	-	125	95	280	212	62 60	-	-	65	-	14	-	140	161	300 279	-	-	12	-	60-57-66 69,8
	B-NM4 65/20A/A-B/A	80	65	100	528	180	225	340	-	125	95	320	250	60	-	-	65	-	14	-	159	179	279	-	-	12	-	-
2	B-NM4 65/25B/B B-NM4 65/25A/C	80	65	100	540 645	200	250	360 385	-	160	120	360	280	60	-	-	80	-	18	-	179	195	345 405	-	-	15	-	109 128
2	B-NM4 65/31C/B-B/B B-NM4 65/31A/B	80	65	125	670 720	225	280	410	-	160	120	400	315	75	-	-	80	-	18	-	220	220	415 465	-	-	20	-	170-.. -
	B-NM4 80/20A-B-C	100	80	125	560	180	250	340	-	125	95	345	280	60	-	-	65	-	14	-	170	194	340	-	-	15	-	97,2-89,7-..
	B-NM4 80/25C/A	100	80	125	565	200	280	360	-	160	120	400	315	60	-	-	80	-	18	-	191	210	335	-	-	20	-	115
	B-NM4 80/31C	100	80	125	720	250	315	435	-	160	120	400	315	90	-	-	80	-	18	-	222	234	465	-	-	17	-	-
	B-NM4 100/20B/A-C/A B-NM4 100/20A/C	125	100	125	565 665	200	280	360 385	-	160	120	360	280	60	-	-	80	-	18	-	180	212	330 400	-	-	20	-	109-103 129

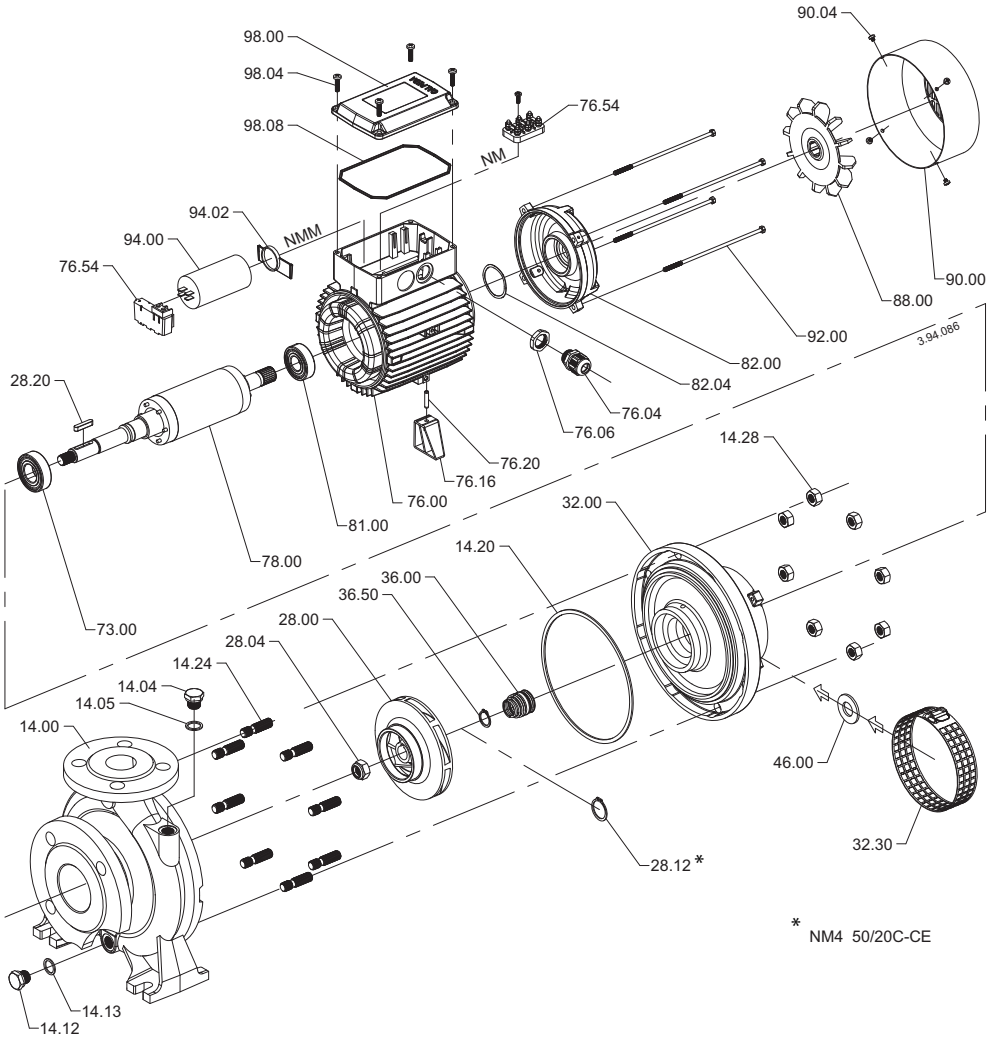
4



	B-NMS4	mm																							kg
		DN1	DN2	a	fM	h1	h2	H	m1	m2	n1	n2	n5	w1	b	b1	s	s1	l1	l2	w	m4	m5	g2	
4	BNMS4 80/250A/A-B/A	100	80	125	807	200	280	387	160	120	400	315	216	20	80	69	18	12	191	210	322	298	258	6	181-171
4	BNMS4 80/315B/B	100	80	125	948	250	315	457	160	120	400	315	254	20	80	60	18	15	222	234	271	435	395	6	
4	BNMS4 80/315A/B	100	80	125	948	250	315	457	160	120	400	315	254	20	80	60	18	15	222	234	271	435	395	6	
4	BNMS4 80/315S	100	80	125	968	250	315	536	160	120	400	315	279	25	80	70	18	15	222	234	312	432	382	6	
4	BNMS4 80/400C/B	125	80	125	973	280	355	566	160	120	435	355	279	25	80	70	18	15	268	269	318	520	435	6	
4	BNMS4 80/400B/B	125	80	125	1003	280	355	566	160	120	435	355	279	25	80	70	18	15	268	269	318	520	435	6	
4	BNMS4 80/400A/B	125	80	125	1051	280	355	595	160	120	435	355	318	25	80	83	18	19	268	269	334	540	455	6	
4	BNMS4 80/400S	125	80	125	1118	280	355	618	160	120	435	355	356	55	80	103	18	19	268	269	380	540	460	8	
4	BNMS4 100/250B/A	125	100	140	822	225	280	412	160	120	400	315	216	20	80	69	18	12	205	233	322	298	258	6	192
4	BNMS4 100/250A/A	125	100	140	872	225	280	412	160	120	400	315	216	20	80	69	18	12	205	233	322	298	258	6	206
4	BNMS4 100/315C/A	125	100	140	966	250	315	457	160	120	400	315	254	20	80	60	18	15	230	250	274	435	395	6	284
4	BNMS4 100/315B/A	125	100	140	966	250	315	457	160	120	400	315	254	20	80	60	18	15	230	250	274	435	395	6	300
4	BNMS4 100/315A/A	125	100	140	983	250	315	536	160	120	400	315	279	25	80	70	18	15	230	250	312	432	382	6	
4	BNMS4 100/400C/A	125	100	140	1018	280	355	566	200	150	500	400	279	25	100	70	22	15	268	280	318	520	435	6	
4	BNMS4 100/400B/A	125	100	140	1066	280	355	595	200	150	500	400	318	25	100	83	22	19	268	280	334	540	455	6	
4	BNMS4 100/400A/A	125	100	140	1138	280	355	618	200	150	500	400	356	55	100	103	22	19	268	280	385	540	460	8	
4	BNMS4 125/250D/A-E/A	150	125	140	822	250	355	437	160	120	400	315	216	20	80	69	18	12	235	268	322	298	258	6	
4	BNMS4 125/250C/A	150	125	140	872	250	355	437	160	120	400	315	216	20	80	69	18	12	235	268	322	298	258	6	
4	BNMS4 125/250B/A	150	125	140	951	250	355	457	160	120	400	315	254	20	80	60	18	15	235	268	259	435	395	6	265
4	BNMS4 125/250A/A	150	125	140	951	250	355	457	160	120	400	315	254	20	80	60	18	15	235	268	259	435	395	6	273
4	BNMS4 125/315C/A	150	125	140	988	280	355	566	200	150	500	400	279	25	100	70	22	15	247	278	318	520	435	6	383
4	BNMS4 125/315B/A	150	125	140	1018	280	355	566	200	150	500	400	279	25	100	70	22	15	247	278	318	520	435	6	395
4	BNMS4 125/315A/A	150	125	140	1066	280	355	595	200	150	500	400	318	25	100	83	22	19	247	278	334	540	455	6	
4	BNMS4 125/400C/A	150	125	140	1138	315	400	653	200	150	500	400	356	25	100	103	22	19	280	305	410	540	461	8	
4	BNMS4 125/400B/A	150	125	140	1198	315	400	653	200	150	500	400	356	25	100	103	22	19	280	305	410	540	461	8	
4	BNMS4 125/400A/A	150	125	140	1237	315	400	725	200	150	500	400	406	25	100	100	22	24	280	305	454	540	461	8	
4	BNMS4 150/315D	200	150	160	1008	280	400	566	200	150	550	450	279	25	100	70	22	15	260	298	318	520	435	6	380
4	BNMS4 150/315C/A	200	150	160	1038	280	400	566	200	150	550	450	279	25	100	70	22	15	260	298	318	520	435	6	395
4	BNMS4 150/315B/A	200	150	160	1086	280	400	595	200	150	550	450	318	25	100	83	22	19	260	298	334	540	455	6	467
4	BNMS4 150/315A/A	200	150	160	1158	280	400	618	200	150	550	450	356	55	100	103	22	19	260	298	385	540	460	8	544
4	BNMS4 150/400C/A	200	150	160	1218	315	450	653	200	150	550	450	356	25	100	103	22	19	295	328	410	540	461	8	
4	BNMS4 150/400B/A	200	150	160	1257	315	450	725	200	150	550	450	406	25	100	100	22	24	295	328	454	540	461	8	
4	BNMS4 150/400A/A	200	150	160	1330	315	450	748	200	150	550	450	457	45	100	100	22	24	295	328	482	625	535	6	

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

NM 0,55 - 2,2 kW
NM4 0,37 - 1,1 kW



13.2. Disegno per lo smontaggio ed il rimontaggio
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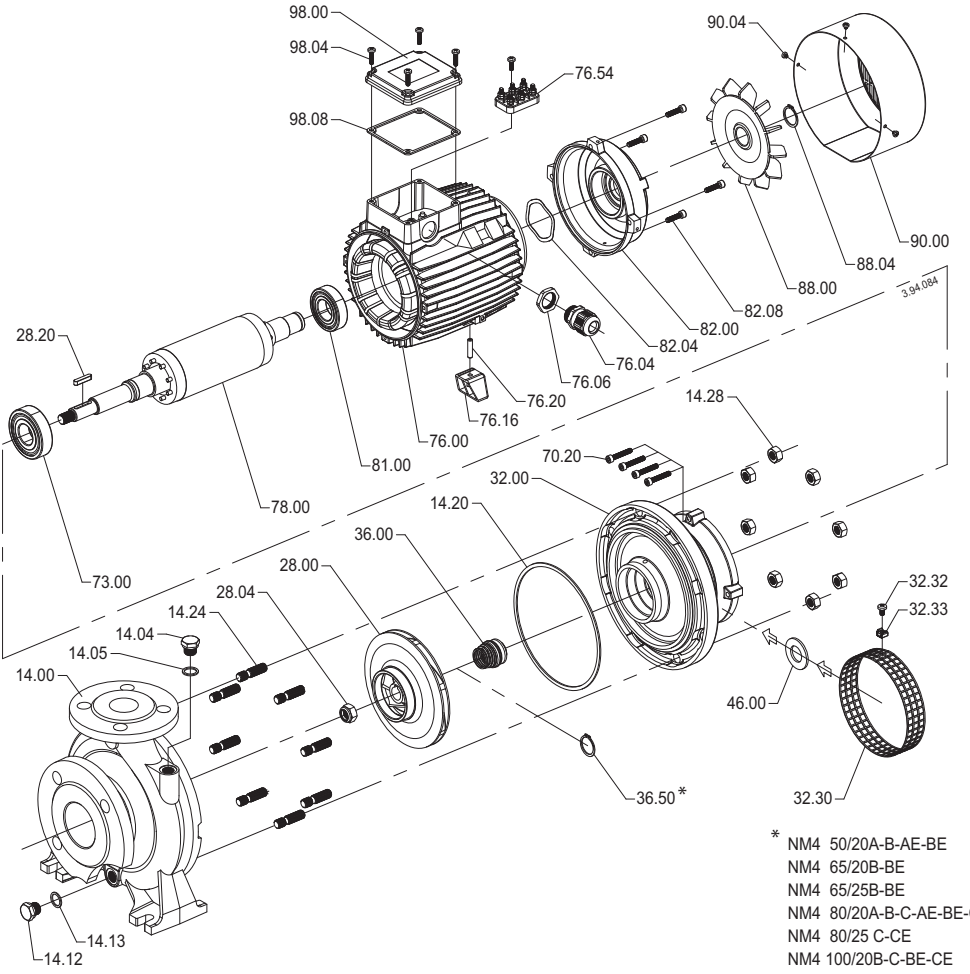
Onderdelentekening
Чертеж для демонтажа и сборки
组装与分解图

NM 3 - 30 kW
NM4 1,5 - 15 kW



* NM4 50/20A-B-AE-BE
NM4 65/20B-BE
NM4 65/25B-BE
NM4 80/20A-B-C-AE-BE-CE
NM4 80/25 C-CE
NM4 100/20B-C-BE-CE

13.2. Disegno per lo smontaggio ed il rimontaggio
Drawing for dismantling and assembly
Zeichnung für Demontage und Montage
Dessin pour démontage et montage
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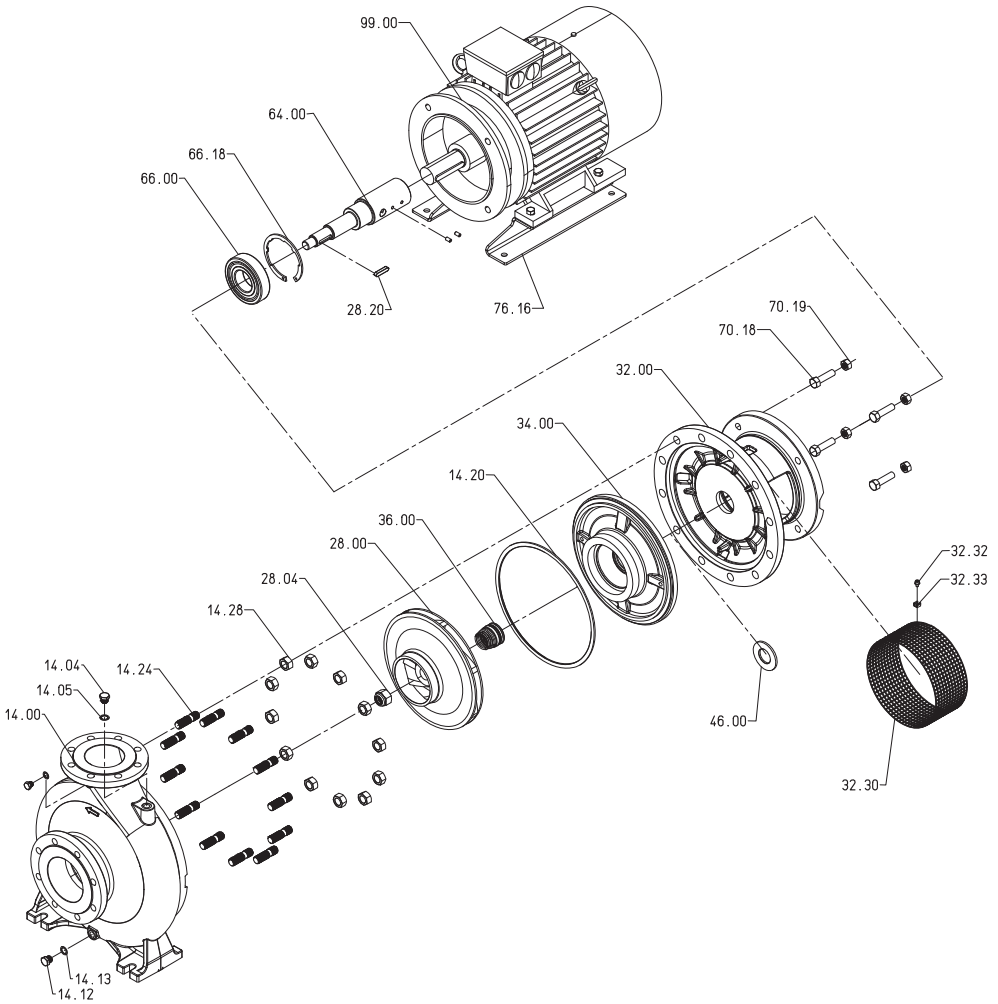
Onderdelentekening
Чертеж для демонтажа и сборки
组装与分解图

NMS 37 - 75 kW
NMS4 18,5 - 75 kW



13.3. Sezione minima dei conduttori
Minimum cross-sectional area of conductors
Kleinster Querschnitt der Leiter
导体最小截面积

Tab. 1 TAB 1IEC 60335-1

Corrente nominale dell'apparecchio Rated current of appliance Bemessungsstrom des Gerätes 设备额定运行电流 A	Sezione nominale Nominal cross-sectional area Nennquerschnitt 导体额定截面积 mm ^{2}
>0,2 ÷ ≤3	0,5 [a]
>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

a Questi cavi possono essere usati solo se la loro lunghezza non supera 2 m tra il punto in cui il cavo o la sua protezione entra nell'apparecchio e l'entrata nella spina.

These cords may only be used if their length does not exceed 2 m between the point where the cord or cord guard enters the appliance and the entry to the plug.

Diese Leitungen dürfen nur verwendet werden, wenn ihre Länge 2 m zwischen dem Punkt, an dem die Leitung oder die Biegeschutztülle in das Gerät eintritt, und dem Eintritt in den Stecker nicht überschreitet.

电源线插头到电线末端尾档的长度不应超过2米。

IT **DICHIARAZIONE DI CONFORMITÀ**

Noi CALPEDA S.p.A. dichiariamo sotto la nostra esclusiva responsabilità che le Pompe NM, NMS, NM4, NMS4, 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 NM, NMS, NM4, NMS4, 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 responsability 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 NM, NMS, NM4, NMS4, Typbezeichnung und Fabrik-Nr. nach Leistungsschild den EG-Vorschriften 2006/42/EG2009/125/EG, 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 NM, NMS, NM4, NMS4, 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 Nº 547/2012, 640/2009.

E **DECLARACION DE CONFORMIDAD**

En CALPEDA S.p.A. declaramos bajo nuestra exclusiva responsabilidad que las Bombas NM, NMS, NM4, NMS4, modelo y numero de serie marcados en la placa de caracteristicas 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 **OVERENSSTEMMELSESERKLÆRING**

Vi CALPEDA S.p.A. erklærer hermed at vore pumper NM, NMS, NM4, NMS4, 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 NM, NMS, NM4, NMS4, 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 NM, NMS, NM4, NMS4, malli ja valmistusnumero tyyppikilvcstä, 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. intygar att pumpar NM, NMS, NM4, NMS4, 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 NM, NMS, NM4, NMS4, typ oraz numer umieszczone na tabliczkach znamionowych , są zgodne z zaleceniami Dyrektyw 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 NM, NMS, NM4, NMS4, με τύπο και αριθμό σειράς κατασκευής όπου αναγράφετε στην πινακίδα της αντλίας, κατασκευάζονται σύμφωνα με τις οδηγίες 2006/42/ΕΟΚ, 2009/125/ΕΟΚ, 2014/30/ΕΕ, 2014/35/ΕΕ και αναλαμβάνουμε πλήρη υπευθυνότητα για συμφωνία (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 NM, NMS, NM4, NMS4, Pompalarımızın, 2006/42/EC, 2009/125/EC, 2014/30/EU, 2014/35/EU, direktiflerine uygun olarak imal edildiklerini beyan eder ve bu standartlara uygunlug˘una dair tüm sorumlulug˘u üstleniriz. 547/2012, 640/2009 sayılı Komisyon Yönetmeliği.

RU **ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ**

Компания “Calpeda S.p.A.” заявляет с полной ответственностью, что насосы серий NM, NMS, NM4, NMS4, 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 **声明**

我们科沛达泵业有限公司声明我们制造的NM,NMS,NM4,NMS4,(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.

Il Presidente
Marco Mettifogo

Montorso Vicentino, 07.2018

calpeda®

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