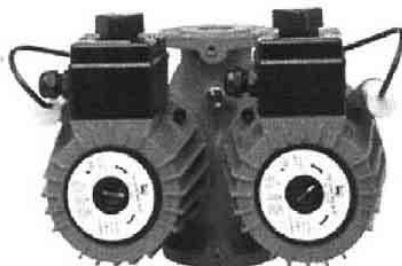
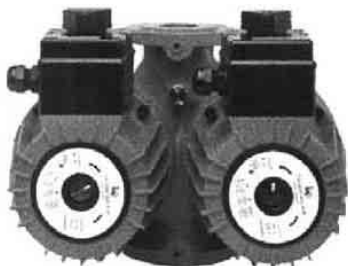


**Circolatori flangiati a tre velocità**  
**Three speeds circulation pumps with flanges**  
**Фланцевый трехскоростной циркуляционный насос**

# NC, NCD

**ISTRUZIONI PER L'USO**  
**OPERATING INSTRUCTIONS**  
**ИНСТРУКЦИИ ПО ЭКСПЛУАТАЦИИ**

Pagina 2  
Page 5  
Стр. 8



CE

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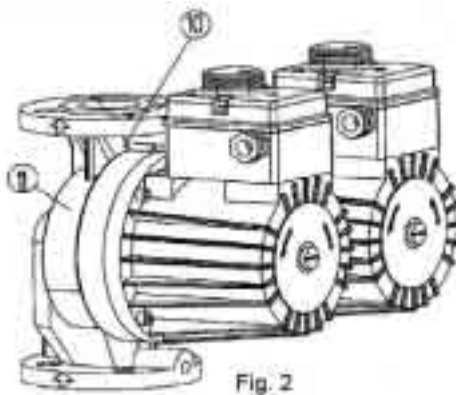
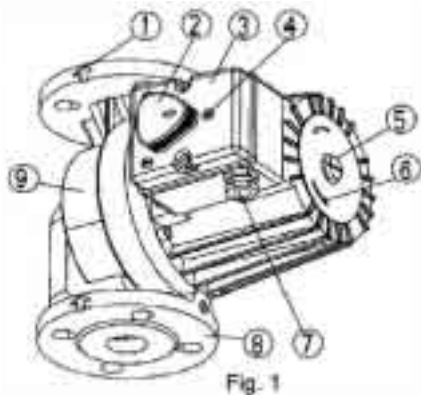
## Three speeds circulation pumps with flanges

# NC, NCD

### ENGINEERING INSTRUCTIONS

#### 1. Introduction

The circulating pumps of the mentioned types are used for the flow of media within the systems of hot-water heating, air-conditioning and ventilation. They are designed as single or double three-speed pumping aggregates.



#### 2. Pump installation

The pump has to be installed into the piping system with the pump axis 1-1 in horizontal position (Fig. 3). It has to be installed into the straight piping section having the length of at least 5-10 D (D = nominal diameter of the pump tube) from the knee. This will ensure its operation with minimum vibration and noise. The direction of water flow through the pump must match the direction indicated by an arrow on the pump casing (Fig. 1 – Pos. 1).

The pump must not be installed into the safety pumping systems. The nominal tube diameter should not be smaller than the nominal diameter of the pump.

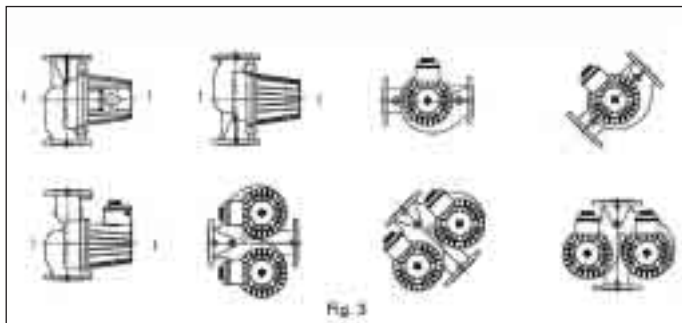
The connecting flanges are NP 6/10 (Fig. 1 – Pos. 8).

The NC and NCM pumps have a single hydraulic casing (Fig. 1 – Pos. 9).

The NCD, NCDM pumps have a double hydraulic casing (Fig. 2 – Pos. 11) where a tiltable flap is built-in (Fig. 2 – Pos. 10) tilting automatically, depending on the flow direction of one or another pump.

With an additional order a cover can be supplied to be used on the NCD and NCDM pump types after dismantling a defective motor. Upon closing the opening on the hydraulic casing, the neighbouring motor can continue to operate in an undisturbed manner.

The correct position of the pump:



### 3. Electric mains connection

The pumps NC, NCD are provided with a built-in three-phase electric motor to be connected to a.c. mains of 3x400V, 50Hz. The electric motor is provided with a thermal cut-out that will switch off the electric motor by means of a relay or contactor when it is overheated. For each version a device isolating all the poles from the mains has to be built into a fixed installation, with a gap of 3mm between open contacts.

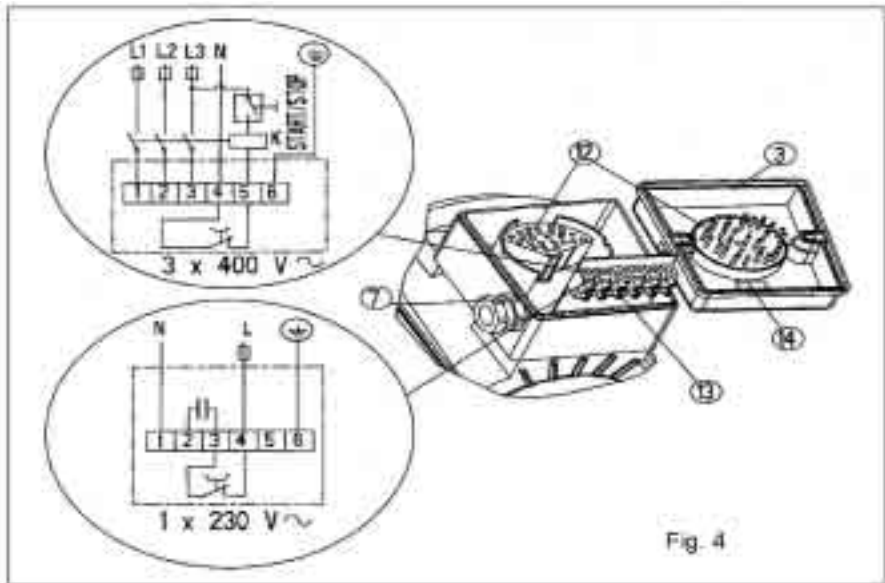
The connecting wire has to be connected over a cable entry Pg 16 (Fig. 4 – Pos. 7), and has to be "T" version due to the pump warm-up being higher than 50K.

The pump versions NCM, NCDM are provided with a built-in single-phase electric motor 1x 230V, 50Hz. The electric motor is provided with a thermal cut-out that will switch it off when it is overheated.

### 4. Electrical connection of pumps

The electrical connection of pumps has to be carried out according to the wiring diagram (Fig. 4 – Pos. 14) that is glued on the motor cover (Fig. 4 – Pos. 3) up to the connecting terminals (Fig. 4 – Pos. 13).

In Fig. 4, Pos. 12 a male and female parts of connector are designated, they are put together when the pump is operating.



### 5. Setting operating characteristics of pumps

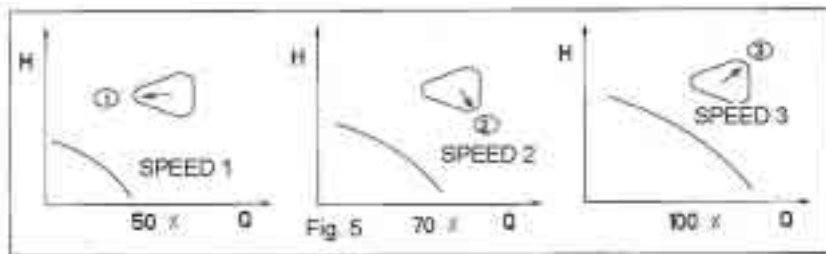
Each pump is able to cover three hydraulic fields, and for this reason such pumps are provided with electric motors for three different speeds. The characteristics or speed desired (3, 2, 1) can be selected using the connector marked with an arrow (Fig. 1 - Pos.2).

Set the speed as follows:

- Disconnect the pump from the mains by switching off the ON-OFF switch.
- Pull out the button of the three-position connector (Fig. 1 – Pos. 2) on the electric motor cover (Fig. 1 – (Pos. 3), rotate it to the speed desired (1, 2, 3), and push it down to end stop.
- Connect the pump to the mains using ON-OFF switch.

A nominal permissible pressure for the pump is NP6/10bar. Maximum pressure height is 11m water column. The ambient temperature of the pump is 0 to 40°C.

NEVER SWITCH OVER THE CONNECTOR BUTTON WHEN THE PUMP MOTOR IS ALIVE!



## 6. Bringing pumps into operation

With the pumps of types NC, NCD (NCM, NCDM) the rotor of electric motor is submerged and provided with water-lubricated bearings. Before putting the pump into operation, it has to be filled with water and deaerated. Deaerate the pump by unscrewing a screw on the back side of the electric motor (Fig. 1 – Pos. 5). Air will flow out through the cleft between the motor shaft and bearing. When water starts to flow out, close the valves at both the suction and pressure side of the pump. Start the pump and check the direction of shaft rotation. It has to match that indicated on the electric motor nameplate (Fig. 1 – Pos. 6). In case of a wrong direction, interchange with the three-phase pumps the phases L1 and L2 (Fig. 4). For single-phase pumps the rotation direction is always correct. When a correct rotation of the pump shaft has been established, tighten the screw (Fig. 1 – Pos. 5), and open the valves at both the suction and pressure side of the pump.

## 7. Maintenance of pumps

The pumps are high-quality products. For that reason they can operate in normal conditions several years without maintenance. If a pump didn't operate for a long period of time, it can be blocked when attempting to start it. To deblock it proceed as follows: Switch off the pump, unscrew the vent screw, and with a screwdriver inserted into the shaft slot rotate the shaft until the friction forces have released. Then screw on the vent screw.

NOTE: DEAERATE AND START UP THE PUMP ONLY WHEN THE CONNECTOR IS SWITCHED TO SPEED (3).

## 8. Lifetime of the product, provision period for spare parts

This is the time period when the supply of spare parts and serviceability will be ensured in order to ensure normal operation of the product under normal operating conditions, and under observance of the engineering instructions. The lifetime of this product is 7 years following the warranty expiration date.

## 9. Risks encountered during the maintenance and use

- Don't use the pump for pumping inflammable substances.
- Disconnect the pump from the electric mains before any intervention at the switch cabinet.
- During the operation and with high temperatures of the pumping fluid the pump will warm up. Don't touch it – risk of burns!
- The pumping fluid can be very hot and under high pressure. The risk of scalding is present, therefore empty the piping system before proceeding to dismantling operations.
- When deaerating the pump very hot fluid can squirt out. Take care not to injure people or damage the environment.
- If the pump is out of operation during the winter period, take care to prevent the fluid in it from freezing that could result in damaging the pump.

**I****DICHIARAZIONE DI CONFORMITÀ**

Noi CALPEDA S.p.A. dichiariamo sotto la nostra esclusiva responsabilità che le Pompe NC, NCM, NCD, NCDM, tipo e numero di serie riportati in targa, sono conformi a quanto prescritto dalle Direttive 89/336/CEE, 92/31/CEE, 73/23/CEE, 98/37/CE e dalle relative norme armonizzate.

**GB****DECLARATION OF CONFORMITY**

We CALPEDA S.p.A. declare that our Pumps NC, NCM, NCD, NCDM, with pump type and serial number as shown on the name plate, are constructed in accordance with Directives 89/336/EEC, 92/31/EEC, 73/23/EEC, 98/37/EC and assume full responsibility for conformity with the standards laid down therein.

**D****KONFORMITÄTSERKLÄRUNG**

Wir, das Unternehmen CALPEDA S.p.A., erklären hiermit verbindlich, daß die Pumpen NC, NCM, NCD, NCDM, Typbezeichnung und Fabrik-Nr. nach Leistungsschild den EG-Vorschriften 89/336/EG, 92/31/EG, 73/23/EG, 98/37/EG entsprechen.

**F****DECLARATION DE CONFORMITE**

Nous, CALPEDA S.p.A., déclarons que les Pompes NC, NCM, NCD, NCDM, modèle et numero de série marqués sur la plaque signalétique sont conformes aux Directives 89/336/CEE, 92/31/CEE, 73/23/CEE, 98/37/CE.

**E****DECLARACION DE CONFORMIDAD**

En CALPEDA S.p.A. declaramos bajo nuestra exclusiva responsabilidad que las Bombas NC, NCM, NCD, NCDM, modelo y numero de serie marcados en la placa de características son conformes a las disposiciones de las Directivas 89/336/CEE, 92/31/CEE, 73/23/CEE, 98/37/CE.

**DK****OVERENSSTEMMELSEERKLÆRING**

Vi CALPEDA S.p.A. erklærer hermed at vore pumper NC, NCM, NCD, NCDM, pumpe type og serie nummer vist på typeskiltet er fremstillet i overensstemmelse med bestemmelserne i Direktiv 89/336/EEC, 92/31/EEC, 73/23/EEC, 98/37/EC og er i overensstemmelse med de heri indeholdte standarder.

**P****DECLARAÇÃO DE CONFORMIDADE**

Nós, CALPEDA S.p.A., declaramos que as nossas Bombas NC, NCM, NCD, NCDM, modelo e número de série indicado na placa identificadora são construídas de acordo com as Directivas 89/336/CEE, 92/31/CEE, 73/23/CEE, 98/37/CE e somos inteiramente responsáveis pela conformidade das respectivas normas.

**NL****CONFORMITEITSVERKLARING**

Wij CALPEDA S.p.A. verklaren hiermede dat onze pompen NC, NCM, NCD, NCDM, pomptype en serienummer zoals vermeld op de typeplaat aan de EG-voorschriften 89/336/EU, 92/31/EU, 73/23/EU, 98/37/EU voldoen.

**SF****VAKUUTUS**

Me CALPEDA S.p.A. vakuutamme että pumppumme NC, NCM, NCD, NCDM, malli ja valmistusnumero tyypikilvstä, ovat valmistettu 89/336/EU, 92/31/EU, 73/23/EU, 98/37/EU direktiivien mukaisesti ja CALPEDA ottaa täyden vastuun siitä, että tuotteet vastaavat näitä standardeja.

**S****EU NORM CERTIFIKAT**

CALPEDA S.p.A. intygar att pumpar NC, NCM, NCD, NCDM, pumptyp och serienummer, visade på namnplåten är konstruerade enligt direktiv 89/336/EEC, 92/31/EEC, 73/23/EEC, 98/37/EC. Calpeda åtar sig fullt ansvar för överensstämmelse med standard som fastställts i dessa avtal.

**GR****ΔΗΛΩΣΗ ΣΥΜΦΩΝΙΑΣ**

Εμείς ως CALPEDA S.p.A. δηλώνουμε ότι οι αντλίες μας αυτές NC, NCM, NCD, NCDM, με τύπο και αριθμό σειράς κατασκευής όπου αναγράφετε στην πινακίδα της αντλίας, κατασκευάζονται σύμφωνα με τις οδηγίες 89/336/ΕΟΚ, 92/31/ΕΟΚ, 73/23/ΕΟΚ, 98/37/ΕΟΚ, και αναλαμβάνουμε πλήρη υπευθυνότητα για συμφωνία (συμμόρφωση), με τα στάνταρς των προδιαγραφών αυτών.

**TR****UYGUNLUK BEYANI**

Bizler CALPEDA S.p.A. firması olarak NC, NCM, NCD, NCDM, Pompalarımızın, 89/336/EEC, 92/31/EEC, 73/23/EEC, 98/37/EC, direktiflerine uygun olarak imal edildiklerini beyan eder ve bu standartlara uygunluğuna dair tüm sorumluluğu üstleniriz.

**RU****ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ**

Компания "Calpeda S.p.A." заявляет с полной ответственностью, что насосы серий NC, NCM, NCD, NCDM, тип и серийный номер которых указывается на заводской табличке соответствуют требованиям нормативов 89/336/CEE, 92/31/CEE, 73/23/CEE, 98/37/CE.