Submersible sewage and drainage pumps

GX 40, GM 50

OPERATING INSTRUCTIONS

1. Pump designation

See designation on the pump name-plate or on the bar-code label.

Meaning of the designations:

GX 40 = Stainless steel pump with G 1¹/₂ ISO 228 (DN 40) delivery connection.

GM 50 = Cast iron pump with G 2 ISO 228 (DN 50) delivery connection.

GM 50-65 = Cast iron pump with (DN 65) flanged delivery connection.

C = With two- (**GXC**) or single-passage (**GMC**) impeller.

V = With free-flow (vortex) impeller.

M = With single-phase motor (without indication = with three-phase motor).

2. Operating conditions

Standard construction

- For clean and dirty water, also containing solids with maximum size:
  35 mm for **GX 40**;
  45 mm for **GMC ..**; 50 mm for **GMV ...**.
  With a high solid content or with filamentous par ticles use only the free-flow (vortex) **GXV** and **GMV** construction.
- Maximum liquid temperature: 35 °C.
- Maximum liquid density: 1100 kg/m³.
- Minimum dimensions of installation pit: 0.55x0.55m; depth 0.5 m.
- Minimum immersion depth:
  250 mm for **GX 40**;
  180 mm for **GM 50**.
- Maximum submersion depth: **GX 40** = 5 m; **GM 50** = 10 m (with suitable cable length).
- Maximum starts/hour: 30 at regular intervals.

Sound pressure at minimum immersion depth: < 70 dB (A).

Noise disappears when the pump is submersed.

Do not use in garden ponds, tanks or swimming pools when people are in the water.

The Pump cannot be used in explosive or flammable environments.

3. Installation

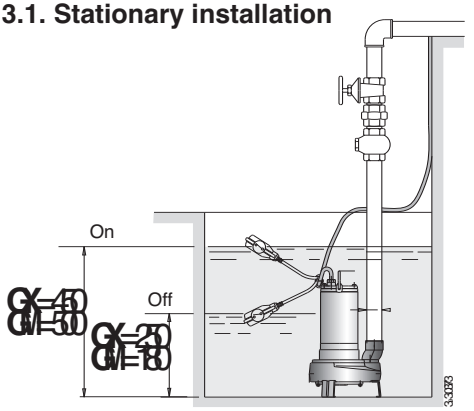
The internal diameter of the delivery pipe must never be smaller than the diameter of the pump connection port:

G 1¹/₂ (DN 40) for **GX 40**;
G 2 (DN 50) for **GM 50**;
(DN 65) for **GM 50-65**.

The pump must be lifted and transported using the handle fitted for this purpose and not pulled by the electrical power cable.

Place the pump, with vertical axis, at the bottom of the pit or at the site of installation.

3.1. Stationary installation



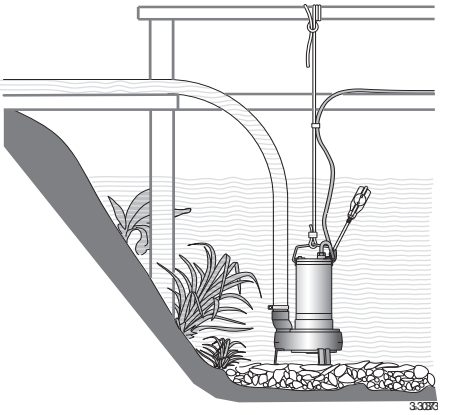
For stationary installation fit a check valve against back flow in the delivery pipe.

Provide for the possibility of removing the pump without having to drain the entire system (if necessary, fit a gate valve and a union coupling).

With the pump in the resting position secure the delivery pipe to a rest, suitable for its length and weight.

If slime deposits are expected to form at the bottom of the installation pit, a support must be provided to keep the pump raised.

3.2. Transportable installation



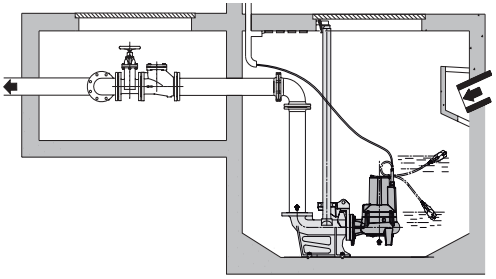
A **safety rope or chain** of non-perishable material should always be used to secure the pump.

When a plastic or flexible delivery pipe is used, the safety rope or chain should be utilized for lowering, securing and raising the pump.

Never use the electric power cable to suspend the pump.

Attach the power supply cable to the delivery pipe or to the safety rope with cable clamps. The power cable should not be taut: allow for a certain degree of slackness to avoid the risk of strain caused by expansion of the pipe during operation.

3.3. Fixed installation with automatic coupling feet and guide rails.



The automatic coupling system allows for quick and efficient inspection operations.

The coupling foot is fastened to the bottom of the sump together with the delivery pipe; two guiding tubes connect it to the anchoring bracket secured to the edge of the sump cover.

The pump is lowered along the guiding tubes until it reaches the exact coupling position; the seal will be tight thanks to the weight of the pump.

This operation can be repeated any number of times and it makes checking and inspection operations easier; the pump is simply extracted from the sump by means of a chain (even if the system is flooded).

4. 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 always earthed, also with a non-metallic delivery pipe.

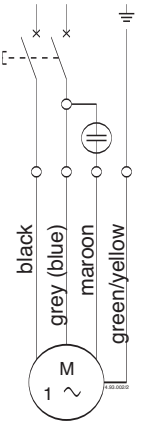
Make sure the frequency and mains voltage correspond with the name plate data.

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 on all poles.
When extension cables are used, make sure the cable wires are of adequate size to avoid voltage drops and that the connection stays dry.

4.1. Single-phase pumps GXCM, GXVM

Supplied with incorporated thermal protector, with power cable type H07 RN8-F, 4G1 mm² and with float switch.
Control box with capacitor supplied on request.



Electrical diagram

4.2. Single-phase pumps GMCM, GMVM

Supplied with incorporated capacitor and thermal protector, with power cable type H07 RN8-F, 3G1.5 mm² with plug and float switch.

4.3. Three-phase pumps GXC, GXV

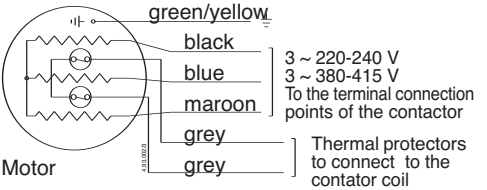
Install in the control box an overload-protective device in accordance with the name-plate current.

4.4. Three-phase pumps GMC, GMV

Fitted with 2 thermal protectors which are connected in series and inserted between two different phases. The thermal protectors, in the three-phase motors, provide protection against overloading and not against operation with a blocked rotor.

The control box must therefore also be fitted with a suitable hot-wire ammeter relay cuopled with the control contactor.

Follow the electrical circuit diagram indicated below



With three-phase pumps, when the water level is not under direct visible control, install a float switch connected to the control box to protect the pump against dry running and to set the water levels to stop and automatically start the pump.

5. Starting

With a three-phase power supply make sure the direction of rotation is correct.
Before installation, momentarily start the motor to check through the suction opening that the rotation of the impeller is as shown by the arrow on the pump. Otherwise disconnect electrical power and reverse the connections of two phases in the control box.
Operation with wrong direction of rotation will cause vibration and loss of delivery capacity.
Reverse rotation can also demage the mechanical seal.
When in doubt, take the pump out of the water and check rotation of the impeller by sight.

Never introduce fingers in the suction opening unless it is absolutely certain the electric power has been disconnected (that the pump cannot be accidentally switched on) and the impeller has stopped rotating completely.

The motors with supply current directly switched by thermally sensitive switches can start automatically.
Never take the pump out of the water while the pump is still operating.

Avoid running dry.

Construction with float switch:
the float switch, connected directly to the pump, controls starting and stopping.

Check that the float switch is free from any obstacle.

If necessary, adjust the float-switch cable (secure the length with screw ₉6.0₉).

Execessive cable length may cause the motor to overheat and the pump to run dry.

Construction without float switch:
start the pump only if immersed at least 250 mm (GX 40) or 180 mm (GM 50) in the liquid to be raised.

6. Maintenance

Under normal operating conditions the pump will not require maintenance.

If freezing may be expected while the pump remains inactive and it is not submersed at a safe depth, remove the pump from the water and leave in a dry place.

If the pump is temporarily used with incrusting liquids (prone to crystallization or liquids with particles that solidify when exposed to air in stagnant conditions) **or water containing chloride,** flush the pump briefly with water immediately after use to remove any deposit.

If the pump has not been used for a long time and does not start or gives no water (but electrical connections are in order), the pump must be removed from the water and checked to see if it is choked by any foreign matter or blocked by sediment, deposits or any other cause.

INSTRUCTIONS FOR SAFETY, HYGIENE AND HEALTH PROTECTION AT WORK.

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

The pump may have been immersed in hazardous substances or products emanating toxic gases, or may be located in an environment which is toxic due to other reasons; make sure all necessary precautionary measures are taken to avoid accidents.

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

Hose down all accessible parts with a jet of water.

In order to avoid the risk of mechanical or electrical injury all portable pumps should be securely isolated from electrical power supply prior to their relocation.

7. Dismantling

For disassembly and reassembly, refer to the cross-section drawing.
To inspect the impeller (28.00), to clean the internal parts and to check whether the impeller turns freely when moved by hand, remove the nuts (GX) or the screws (GM) (12.20) and casing cover (12.00).
To dismantle the impeller remove the nut (28.04). Use the threaded dismantling holes to remove the **GMV** impeller.

Others parts should not be dismantled.
The pump function can be impaired by erroneous procedure or tampering with internal parts.

If the mechanical seal (36.00) and the oil chamber are to be inspected, follow these instructions.

CAUTION: there may be slight pressure in the oil chamber.
Care must be taken to avoid a sudden spurting of oil.
Once the plug (14.46) with washer (14.47) have been removed, adjust the hole to the downward position and empty the chamber completely.
Do not dispose of the waste oil in the enviroment.

The mechanical seal (36.00) can be inspected by removing the impeller key (28.20), the screws (14.24) and the pump casing (14.00).
When re-filling with fresh oil, remember that the chamber must not be completely filled; a sufficient quantity of air must remain inside it in order to compensate for overpressure caused by

thermic dilation of the oil.

The quantity of oil to be inserted in the chamber is:

0.2 litres for **GX 40**;

0.5 litres for **GM 50**.

Use white oil suitable for food machinery and pharmaceutic use.

For the **GM 50** pumps a normal engine oil of the SAE 10W-30 type can also be used.

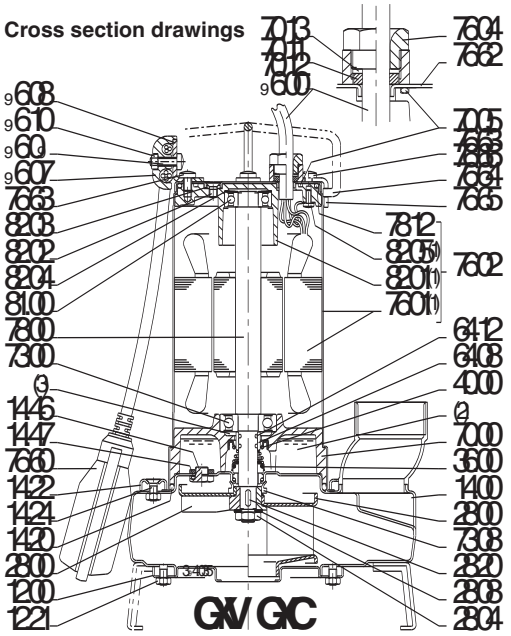
8. Queries and spare parts

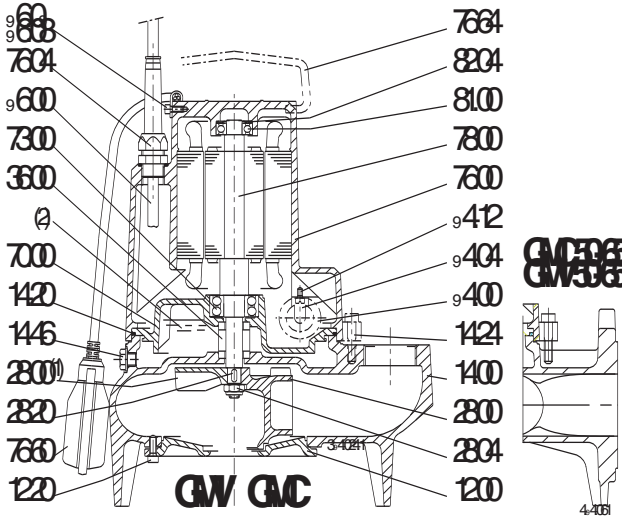
In your queries and orders please mention the pump name-plate data. Alternatively, if the bar-code label has been saved, mention the numbers on the label or enclose a photocopy of it.

When ordering spare parts quote part designations and drawing position numbers.

Changes reserved.

Cross section drawings





Nr.	Designation
12.00	Casing cover
12.20	Screw
12.21	Nut
14.00	Pump casing
14.20	Casing gasket
14.22	Fastening ring
14.24	Screw
14.46	Plug
14.47	Gasket
28.00	Impeller
28.04	Impeller nut
28.08	Washer
28.20	Key
36.00	Mechanical seal
40.00	Radial shaft seal
64.08	Shaft sleeve
64.12	O-ring
70.00	Motor cover, pump side
70.05	O-ring
70.11	Cable gland ring (float switch)
70.12	Cable gland ring
70.13	Washer
73.00	Pump side bearing
73.08	V-Ring
76.00	Motor casing with winding
76.01	Motor jacket with winding (1)
76.02	Kit, motor jacket
76.04	Cable gland
76.60	Float switch
76.62	Jacket cover
76.63	Screw
76.64	Handle
76.65	Handle clamp
76.66	Washer
78.00	Shaft with rotor packet
78.12	O-ring
81.00	Bearing
82.01	Motor end-shield, non-drive end (1)
82.02	Screw
82.03	O-ring
82.04	Compensating spring
82.05	Screw (1)
94.00	Capacitor
94.04	Capacitor collar
96.00	Cable
96.07	Cable fastener
96.08	Clamp
96.09	Screw
96.10	Nut

(1) Cannot be supplied separately
(2) Oil
(3) Grease

(I) DICHIARAZIONE DI CONFORMITÀ

Noi CALPEDA S.p.A. dichiariamo sotto la nostra esclusiva responsabilità che le Pompe GXC, GXCM, GXV, GXVM, GMC, GMCM, GMV, GMVM, tipo e numero di serie riportati in targa, sono conformi a quanto prescritto dalle Direttive 2004/108/CE, 2006/42/CE, 2006/$_{s}$5/CE e dalle relative norme armonizzate.

(GB) DECLARATION OF CONFORMITY

We CALPEDA S.p.A. declare that our Pumps GXC, GXCM, GXV, GXVM, GMC, GMCM, GMV, GMVM, with pump type and serial number as shown on the name plate, are constructed in accordance with Directives 2004/108/EC, 2006/42/EC, 2006/$_{s}$5/EC and assume full responsability for conformity with the standards laid down therein.

(D) KONFORMITÄTSERKLÄRUNG

Wir, das Unternehmen CALPEDA S.p.A., erklären hiermit verbindlich, daß die Pumpen GXC, GXCM, GXV, GXVM, GMC, GMCM, GMV, GMVM, Typbezeichnung und Fabrik-Nr. nach Leistungsschild den EG-Vorschriften 2004/108/EG, 2006/42/EG, 2006/$_{s}$5/EG entsprechen.

(F) DECLARATION DE CONFORMITE

Nous, CALPEDA S.p.A., déclarons que les Pompes GXC, GXCM, GXV, GXVM, GMC, GMCM, GMV, GMVM, modèle et numero de série marqués sur la plaque signalétique sont conformes aux Directives 2004/108/CE, 2006/42/CE, 2006/$_{s}$5/CE.

(E) DECLARACION DE CONFORMIDAD

En CALPEDA S.p.A. declaramos bajo nuestra exclusiva responsabilidad que las Bombas GXC, GXCM, GXV, GXVM, GMC, GMCM, GMV, GMVM, modelo y numero de serie marcados en la placa de caracteristicas son conformes a las disposiciones de las Directivas 2004/108/CE, 2006/42/CE, 2006/$_{s}$5/CE.

(DK) OVERENSSTEMMELSESERKLÆRING

Vi CALPEDA S.p.A. erklærer hermed at vore pumper GXC, GXCM, GXV, GXVM, GMC, GMCM, GMV, GMVM, pumpe type og serie nummer vist på typeskiltet er fremstillet i overensstemmelse med bestemmelserne i Direktiv 2004/108/EC, 2006/42/EC, 2006/$_{s}$5/EC og er i overensstemmelse med de heri indeholdte standarder.

(P) DECLARAÇÃO DE CONFORMIDADE

Nós, CALPEDA S.p.A., declaramos que as nossas Bombas GXC, GXCM, GXV, GXVM, GMC, GMCM, GMV, GMVM, modelo e número de série indicado na placa identificadora são construìdas de acordo com as Directivas 2004/108/CE, 2006/42/CE, 2006/$_{s}$5/CE e somos inteiramente responsáveis pela conformidade das respectivas normas.

(NL) CONFORMITEITSVERKLARING

Wij CALPEDA S.p.A. verklaren hiermede dat onze pompen GXC, GXCM, GXV, GXVM, GMC, GMCM, GMV, GMVM, pomptype en serienummer zoals vermeld op de typeplaat aan de EG-voorschriften 2004/108/EU, 2006/42/EU, 2006/$_{s}$5/EU voldoen.

(SF) VAKUUTUS

Me CALPEDA S.p.A. vakuutamme että pumppumme GXC, GXCM, GXV, GXVM, GMC, GMCM, GMV, GMVM, malli ja valmistusnumero tyyppikilvcstä, ovat valmistettu 2004/108/EU, 2006/42/EU, 2006/$_{s}$5/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 GXC, GXCM, GXV, GXVM, GMC, GMCM, GMV, GMVM, pumptyp och serienummer, visade på namnplåten är konstruerade enligt direktiv 2004/108/EC, 2006/42/EC, 2006/$_{s}$5/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 GXC, GXCM, GXV, GXVM, GMC, GMCM, GMV, GMVM, με τύπο και αριθμό σειράς κατασκευής όπου αναγράφετε στην πινακίδα της αντλίας, κατασκευάζονται σύμφωνα με τις οδηγίες 2004/108/ΕΟΚ, 2006/42/ΕΟΚ, 2006/95/ΕΟΚ, και αναλαμβάνουμε πλήρη υπευθυνότητα για συμφωνία (συμμόρφωση), με τα στάνταρς των προδιαγραφών αυτών.

(TR) UYGUNLUK BEYANI

Bizler CALPEDA S.p.A. firması olarak GXC, GXCM, GXV, GXVM, GMC, GMCM, GMV, GMVM, Pompalarımızın, 2004/108/EC, 2006/42/EC, 2006/$_{s}$5/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 GXC, GXCM, GXV, GXVM, GMC, GMCM, GMV, GMVM, тип и серийный номер которых указывается на заводской табличке соответствуют требованиям нормативов 2004/108/CE, 2006/42/CE, 2006/95/CE.

(中文) 声明

我们科沛达泵业公司声明我们制造的 GXC, GXCM, GXV, GXVM, GMC, GMCM, GMV, GMVM, 系列水泵 （在铭牌上标示水泵的型号和序列号）均符合以下标准的相应目录要求: 2004/108/CE, 2006/42/CE, 2006/95/CE . 本公司遵循其中的标准并承担相应的责任

Il Presidente

Licia Mettifogo

Montorso Vicentino, 01.2010