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TO KANES HIRE

DATE 22/3/02 PAGE 1 OF 3

FAX NO 9418 6690

OUR REF _____

ATTENTION CON KANE

SENT BY MELANIE BEESLEY

Dear Con,

REF: LOWARA VORTEX PUMP 2" 240V GLVM55 AUTOMATIC

1. The potential hazards of storing/using above are:-
No storage risks.
Using risk is electrocution.
2. How is the risk assessed?
Inspection for damaged cable, seal chamber leakage.
3. How are the risks controlled?
Must always be installed with ELC protection.

There is not a safety method statement available.

Digital specification, Photos etc can be down loaded from
www.lowara.com.

Please look at Page 2 and 3 for parts breakdown and list.

Kind regards

A handwritten signature in cursive script that reads 'MJBeesley'.

Melanie Beesley

Manual # 450

LOWARA Plant # 1430001

Pump Vortex 2", 240 volt
Automatic

GL-GLV SERIES

SUBMERSIBLE ELECTRIC PUMPS FOR WASTE WATERS

APPLICATIONS

- Circulation of sewage water containing suspended solids.
- Emptying of domestic waste water tanks, dirty water from cesspools and sewage water in general.
- Drainage of excavations and marshy grounds.

FEATURES

- Manufactured in cast iron - shaft and impeller in 304 stainless steel.
- **Motor stator installed** non-toxic, dielectric **oil** for the lubrication of the ball bearings and improved cooling.
- **Volute pump casing.**
- **Mechanical seal** protected by **sand-proof labyrinth.**
- Maximum depth of **immersion: 5 meters.**
- Maximum liquid **temperature: 50°C** with **pump wholly submersed.**
30°C with **pump partially submersed.**
- Motor class F - IP68 - 2900 rpm.
- Single-channel or vortex impeller - cross-section Ø 50 mm.
- Starting panel in the single-phase version.
- Version:
Single-phase 220-230 V 50 Hz.
Three-phase 220-240 V, 50 Hz or 380-415 V 50 Hz.

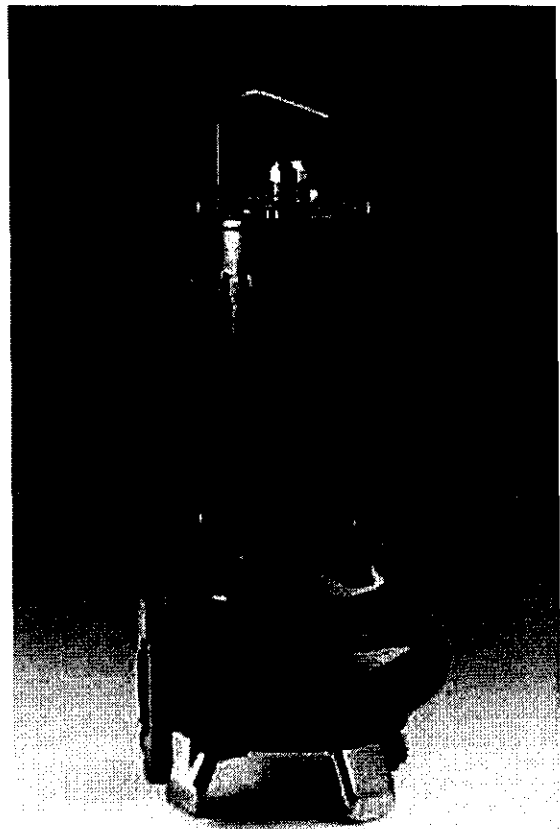


TABLE OF MATERIALS

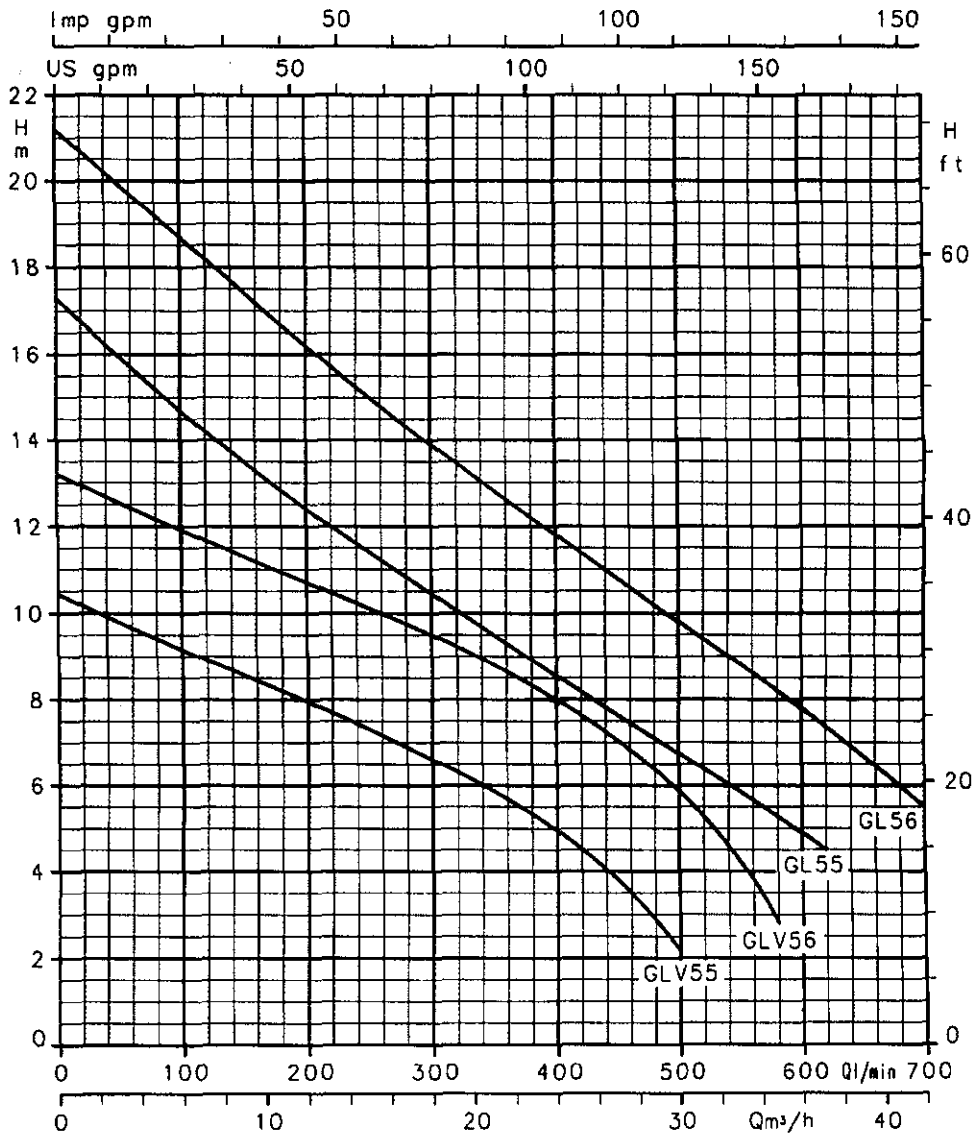
COMPONENT	MATERIAL
Pump casing	CAST IRON* 200 UNI ISO 185
Impeller	CrNi STEEL (AISI 304)
Suction flange	CrNi STEEL (AISI 304)
Support foot	CrNi STEEL (AISI 304)
O-Ring	NITRILE RUBBER
Mechanical seal	CARBON/CERAMIC/ NITRILE RUBBER
Shaft extension	CrNi STEEL (AISI 304)
Motor casing	CAST IRON* 200 UNI ISO 185

* Cast iron with polybutadiene surface treatment for electrophoresis at 180°C

GL-GLV

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WORKING FEATURES AT 2850 rpm



PUMP TYPE		IMPELLER TYPE	kW	HP	ABSORBED POWER IN AMP.		CAPACITOR		MOTOR RATED CURRENT			Q = CAPACITY						
SINGLE-PHASE 220-240 V 50 Hz	THREE-PHASE 220-240/380-415 V 50 Hz				SINGLE-PHASE	THREE-PHASE	μF	V	SINGLE-PHASE 220-240 V	THREE-PHASE 220-240 V	380-415 V	V/min	100	200	300	400	500	600
										m³/h	6	12	18	24	30	36	42	
GLVM 55	GLV 55	VORTEX	1,5	1,1	1,7	1,7	30	450	8,3	5,6	3,2	9	8	6,5	5	2		
	GLV 56	VORTEX	2	1,5	-	2,2	-	-	-	6,6	3,8	12	10,5	9,5	8	6		
GLM 55	GL 55	CHANNEL	1,5	1,1	1,75	1,75	30	450	8,5	5,7	3,3	14,5	12,5	10,5	8,5	6,5	5	
	GL 56	CHANNEL	2	1,5	-	2,2	-	-	-	6,6	3,8	18,5	16	14	12	10	8	5,5

These performances are valid for liquids with density $\rho = 1.0 \text{ kg/dm}^3$ and kinematic viscosity $\gamma = 1 \text{ mm}^2/\text{sec}$.

GL-GLV

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Manual # 451
plant # 1430001

pump VORTEX 2" 240 volt auto.

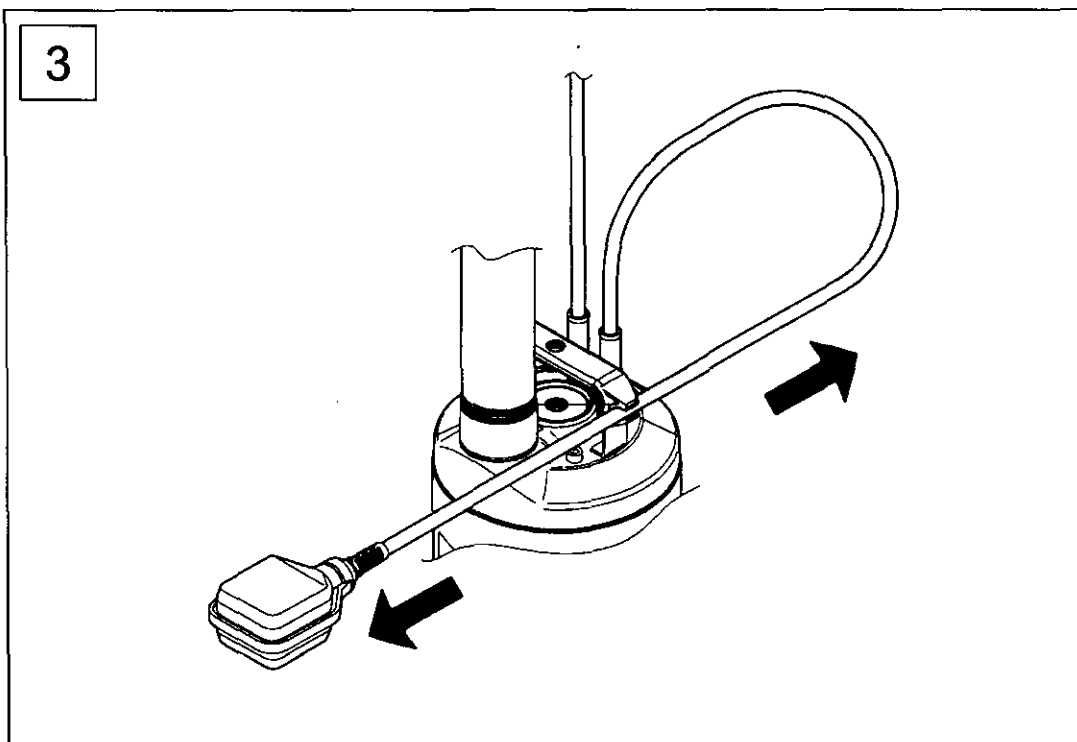
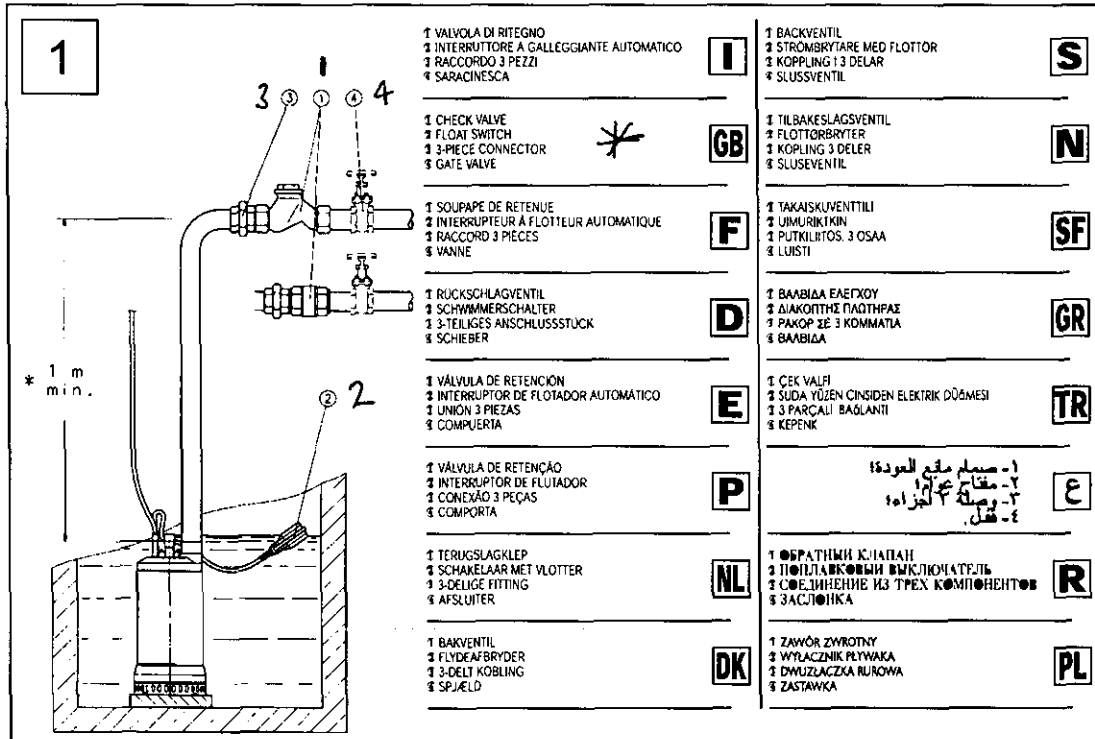


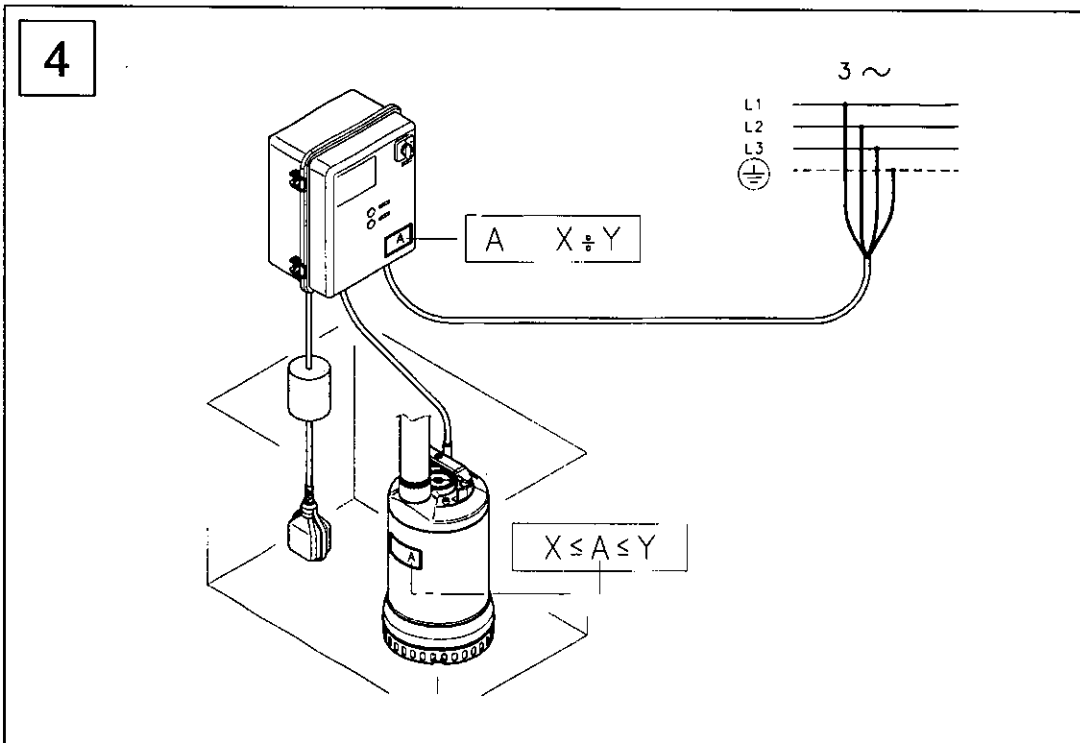
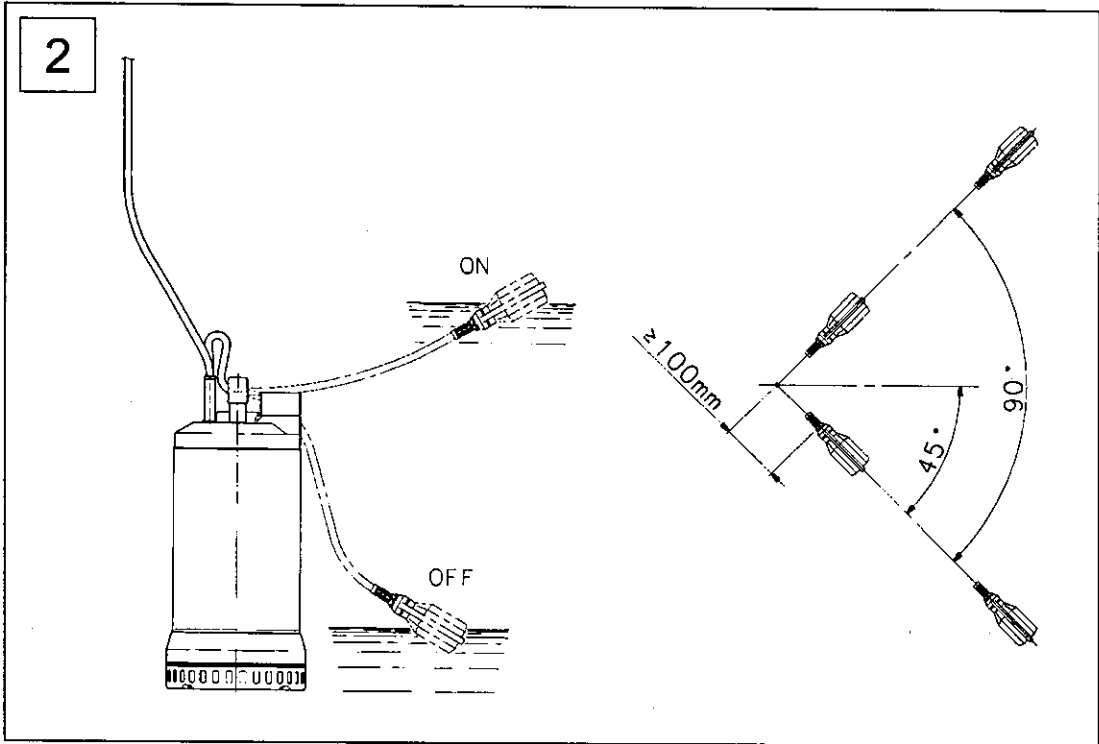
cod. 001073246 03/01

ENGLISH

I	DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA - DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV	Istruzioni installazione ed uso - Sicurezza - Dichiarazione di conformità
GB	DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA - DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV	Instructions for installation and use - Safety - Declaration of conformity
F	DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA - DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV	Instructions pour installation et l'emploi - Sécurité - Déclaration de conformité
D	DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA - DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV	Installations- und Bedienungsanleitungen - Sicherheit - Konformitätserklärung
E	DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA - DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV	Instrucciones de instalación y uso. Seguridad. Declaración de Conformidad.
P	DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA - DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV	Instruções instalação e uso - Segurança - Declaração de conformidade
NL	DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA - DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV	Aanwijzingen voor de installatie en het gebruik - Veiligheidsvoorschriften - Verklaring van overeenstemming
DK	DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA - DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV	Instruktioner vedrørende installation og brug - Sikkerhed - Overensstemmelseserklæring
S	DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA - DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV	Instruktioner för installation och användning - Säkerhet - Försäkran om överensstämmelse
N	DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA - DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV	Instruksjoner for installasjon og bruk - Sikkerhet - Overensstemmelseserklæring
SF	DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA - DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV	Asennus- ja käyttöohjeet - Turvallisuus - vakuutus yhdenmukaisuudesta
GR	DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA - DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV	Οδηγίες εγκατάστασης και χρήσης - Ασφάλεια - Δήλωση συμμόρφωσης
TR	DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA - DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV	Yerleştime ve kullanım bilgileri - Emniyet Uygunluk beyanı
ع	DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA - DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV	تعليمات التركيب والاستخدام والأمان تصريح صناعة طبق الأصول
R	DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA - DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV	Инструкции по установке и эксплуатации - Безопасность - Декларация соответствия
PL	DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA - DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV	Instrukcja obsługi - Zasady Bezpieczeństwa - Deklaracja zgodności

- * 1. check valve
- 2. Float switch
- 3. 3-piece connector
- 4. gate valve





GB 1. HANDLING

The product must be lifted and handled with care, using the handle or the eyebolt.

2. APPLICATIONS

The pump is suitable for the transfer of clean, dirty or turbid liquids, with suspended solids not exceeding the dimensions indicated below. The most common uses are: drainage of domestic wastewater collection tanks, of rainwater collection tanks, of flooded rooms, of excavations and trenches in the building industry. The versions with the VORTEX impeller are also suitable for liquids with suspended filaments.

3. WORKING LIMITS



EN standard 60335-2-41 forbids the use of the pump in tanks or swimming pools while people are in the water, and requires the use of the 10 m cable version for external applications.

Liquid temperature: $\leq 35^{\circ}\text{C}$

N.B. When operating continuously the pumps must be entirely submersed, with the exception of the DOC and DIWA models.

Maximum immersion depth: 5 m (7 m for the DIWA models)

Max. diameter of suspended solids (mm)

DN	DIP-DIWA	DOC	DOCVX	DOMO 7	DL80, 90 105 VORTEX- MINIVORTEX	DOMO 10, 15 DL109, 125 GL, DLV 100, 115 GLV
5	8	10	20	35	45	50

Max. number of starts per hour

DN-DL-DLV-GL-GLV VORTEX-MINIVORTEX	DIWA-DOMO	DOC-DIP
20	25	40

4. INSTALLATION (typical diagram FIG. 1)

The well dimensions must be such as to prevent an excessive number of starts per hour (FIG. 2). The float is adjusted by increasing or diminishing the free length of the cable (FIG. 3).



Improper adjustments may cause malfunctions.

5. ELECTRICAL CONNECTION

SINGLE-PHASE VERSIONS: insert the plug in a standard power outlet.

NOTE: The single-phase version electric pumps are fitted with a built-in automatic reset magneto-thermal protection.

THREE-PHASE VERSION: FIG. 4

5.1 Direction of rotation (only for three-phase version)

The proper rotation direction is clockwise when looking at the pump from above. Check by observing the pump performance.

The correct direction of rotation is the one that generates higher Q/H performances for single-channel and double-channel versions, and lower rates of absorption for the VORTEX impeller versions.

6. MAINTENANCE



The pump should be serviced by qualified personnel only, and after having been disconnected from the power mains.

The pump does not require any routine maintenance. It may occasionally be necessary to clean the suction screen (DIP-DOC-DIWA-DN) or the impeller. To access the impeller on models equipped with a screen, loosen the screws that fasten the screen.

GB 7. SAFETY INSTRUCTIONS

FIG. 5 The pump is not suitable for use with flammable or dangerous liquids.

FIG. 6 Do not use the power supply cable to lift or move the pump.

FIG. 7 Do not allow the pump to run dry or operate out of the water.

FIG. 8 As the pump can start and stop automatically, never insert your hands or other objects in it while it is connected to the power mains.

FIG. 9 The power plug and capacitor carrier (if any) must never be submerged.

FIG. 10 Pay attention to the working limits. Improper use may damage the pump and other property, and injure people.

FIG. 11 Make sure that the rated voltage matches the mains voltage.

FIG. 12 If the pump is a three-phase model, make sure that the mains connection and grounding are performed by qualified personnel (certified electrician).

FIG. 13 As additional protection from lethal electric shock, install a high sensitivity differential switch (0.03 A).

FIG. 14 Make sure that unauthorized persons do not have access to the pump.

FIG. 15 Disconnect the electric pump, or unplug it (for models fitted with a plug) before moving it or carrying out any maintenance or cleaning operations.

FIG. 16 Use the pump only within the specified limits shown on the rating plate.

FIG. 17 Caution! Avoid icing.

FIG. 18 Protect the pump from clogging.

FIG. 19 Prevent any accidental power failure (for example, use a battery operated back-up power supply).

FIG. 20 Wear gloves during any pump servicing operations.

8. TROUBLESHOOTING

THE PUMP DOES NOT START: • Make sure that the plug is properly inserted in the power socket and that the line is live. Reset the ground fault interrupter or circuit breaker if it has kicked off. • The thermo-ampereometric protection incorporated in the single-phase versions may have activated; it will reset automatically after a few minutes, once the motor has cooled. If any one of the three protections mentioned above kicks off again, call a qualified electrician.

THE MOTOR STARTS BUT THE PUMP DOES NOT DELIVER: • Make sure that the water level is not too low and that the suction port or delivery pipe are not clogged.

THE PUMP'S DELIVERY IS REDUCED: • Check for clogs and make sure that the rotation direction on the three-phase models is correct.

THE PUMP WORKS INTERMITTENTLY: • The float is positioned incorrectly • The well is too small • Excessive power consumption • Clogged pump or pipes

9. NOISE

Not applicable when the pump works completely submerged; in any case, below 70 dB(A) if the pump is operating partially submerged.

10. DECLARATION OF CONFORMITY

PRODUCTS: DIP-DOC-DOCVX-DOMO-DOMOVX-DIWA-DN-DL-DLV-VORTEX-MINIVORTEX-GL-GLV

Manufactured by **LOWARA - Montecchio Maggiore (VI) - Italy**

The products listed above comply with the safety prescriptions of Machine Directive 98/037/EEC, Low Voltage Directive 73/23/EEC and related addenda, European Standard EN 60204-1, Electromagnetic Compatibility Directive 89/336/EEC and related addenda.


SIGNATURE/TITLE: Amedeo Valente (Director of Engineering)

