PANELLI®

italian excellence since 1906

SUBMERSIBLE ELECTRIC PUMPS

6'' - 8'' -10''-12''-14''



INSTRUCTIONS for INSTALLATION and MAINTENANCE

Type :	.....
S.number :	.....
Capacity :	.....l/min
Total Head :	.....m
Power :	.....KW
Volt:	V
Amp. :	..... A
Phase :	.....
Frequence :	..... Hz
Speed :	.....RPM

MADE IN ITALY

COMPILATION AT CUSTOMER'S CARE

Customer .....

Installation place .....

Installation date .....

Installer .....

Well depth .....

Well diameter .....

Water static level in the well from the ground .....

Water dinamic level at working pump .....

Well capacity according to dinamic level .....

Pump feeding voltage .....

Electric switchgear feeding voltage .....

Line voltage at the installation .....

Customer signature

.....

Fitter signature

.....

INSTRUCTIONS FOR THE USE

These electric submersible pumps are particularly designed for limpid waters.
Their use is subordinated to the directives of the local legislations.
Before the installation and before the use, please read the described instructions.
Panelli S.r.l. declines all responsibility in case of incident or damage due to the negligence or to the non-observance of the instructions described in this pamphlet or various conditions from those indicated in the plate. It also declines every responsibility for damages caused from improper use of the electric submersible pump.

EMERGENCY

Before any participation of control or maintenance, remove tension to the system.
The electric submersible pumps are consistent to Directives 98/037/CEE, 73/23/CEE, 89/336/CEE, included the last modifications.
Before the installation, make sure that the feeding net is equipped of grounding and conform to the norm.
These pumps can not be used to the surge of inflammable liquids or to operate in atmospheres with outbreak danger.
Avoid any contact between the feeding electrical worker and the liquid that has to pump. Do not to modify the components of the electric submersible pump.
In no case the electric submersible pump must be supported or be transported for the feeding cable.

PRELIMINARY INSPECTIONS

Extract from the packaging and verify the integrity. Moreover check that the plate indicated in the data correspond to those wish to you. For any other anomaly, contact the supplier immediately, indicating the nature of the defects.
ATTENTION: in case of doubt on the emergency of the machine, not to use it.

CONDITIONS OF THE USE

The electric submersible pump must be used in the respect of the following conditions:

- Temperature max of the liquid: + 30° C
- Variation of admitted tension: 5%.
- Index of protection: IP 68
- For special executions the temperature of the water can catch up the value of 50°C

INSTALLATION

The installation is an operation that can be more complex. It must therefore be carried out by competent and authorized workmen.
ATTENTION: during the installation, apply all the dispositions of emergency emanated from the competent organs and dictated from the good sense.

Please, evaluate carefully the drowning risk if the installation must be carried out in a sink at one sure depth.
Make sure that there is not injurious danger of toxic exhalations or noxious gases in the job atmosphere.
In the case of welding operations, use all the precautions apt to avoid outbreaks.
Keep in mind the danger of infections and the hygienic-sanitary norms of precaution. The pipe of the delivery bowl may be rigid or flexible; the section of the passage doesn't be inferior to that one of the delivery bowl of the pump. In order to avoid the ebb of the liquid from the exhaust manifold, install after the delivery bowl of the pump one valve of not return.
For the corrected cooling of the motor and in order to prevent that the pump inhales air mixed to water, please make sure that the level of the water never does not come down under the minimal level of 1 m over the suction cage.

CONNECTIONS ELECTRICAL WORKERS

ATTENTION: It is up to the workman to carry out the connection in way in compliance with the enforced norms in the installation country. Before carrying out the connections make sure that there is not tension to the heads of the line conductors.
Verify the correspondence between the data indicated in the plate and the nominal values of line.
Carry out the connection being made sure itself of the existence of an effective earth circuit.
The installation of a differential switch is recommended.
The motors must be protected by the customer.
In the three phases motors, the direction of the rotation can be inverted; in this case the performances are considerably inferior to those nominal. The correct direction of the rotation anti-clockwise, watching the pump from the high.
In order to invert the direction of the rotation, it's enough to invert between they two phases.
The maintenance of the pump made by a non-authorized staff from Panelli Srl involves the decay of the guarantee, and puts in condition to operate with uncertain and potentially dangerous equipments.
ATTENTION: every violation can carry to decay of the performances and danger for persons and/or things.

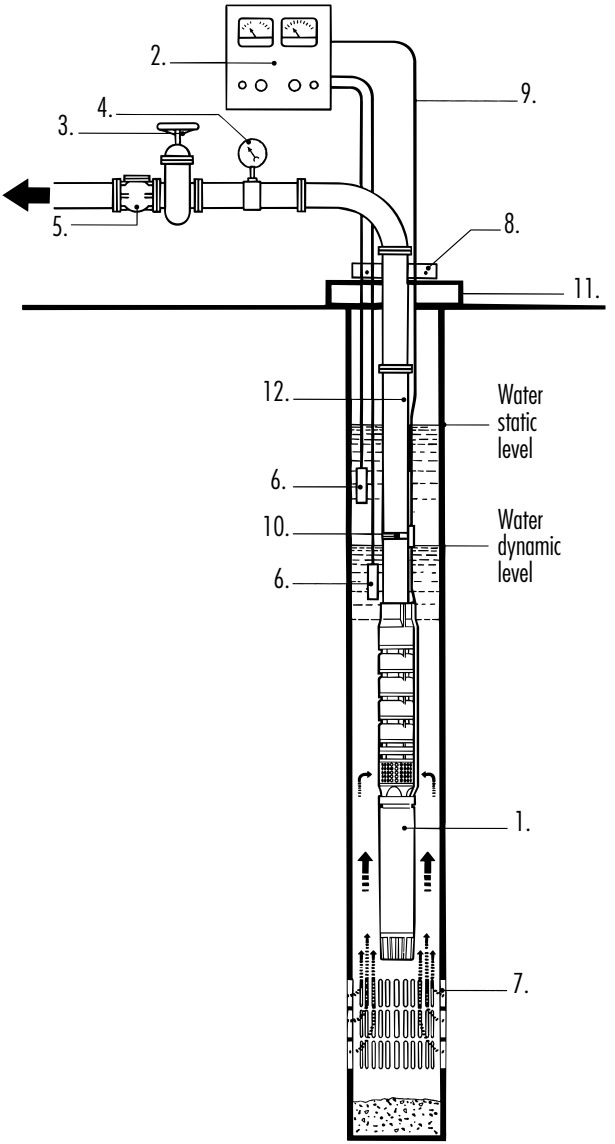
PERIODIC CONTROLS

Before every check, please make sure itself that the tension is switched off and there are not are possibility of accidental connections.
It's advisable to verify periodically:

- The state of cable conservation and press cables, especially in the points of connection
- The usury of the impellers, pain the decay of the performances; for the substitution please address to the Panelli retailer
- The cleanliness of the suction cage

The use of the pump in hard waters or containing high quantity of sand can shorten the life of the equipment.

INSTALLATION DIAGRAM
SUBMERSIBLE ELECTRIC PUMPS

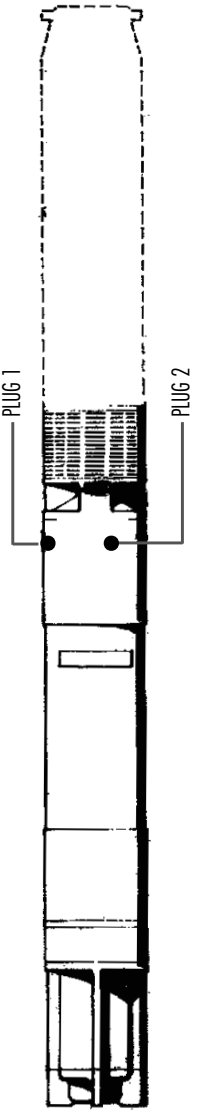


1. Electric submersible pump
2. Electric check panel
3. Gave valve
4. Pressure gauce
5. Non-return valve
6. Level control detectors
7. Well strainer
8. Pipe clamps
9. Power supply cable
10. Cable d'alimentation
11. Watertight head
12. Delivery pipe

ASSEMBLING EQUIPMENT

Set up the gin-pole having a capacity able to bear the weight of the electropump and the full-of-water pipe, in connection with the vertical of the well.

NEVER INSTALL THE UNIT MANUALLY OR USING THE CABLE TO SUPPORT IT.



FILLING OF THE MOTOR 6" - 8" - 10"

THE SUBMERSIBLE ELECTROPUMP IS LUBRICATED WITH WATER. IT IS THEREFORE NECESSARY TO FILL THE MOTOR WITH CLEAN WATER.

Place the electropump in vertical position. unscrew the 1st and 2nd plug situated in connection with the suction strainer (see dwg.).

Pour clean water in the hole 1 until the water goes out from the hole 2.

Wait for some minutes and repeat the operation with the utmost care, topping up more times in order to facilitate the total air outlet from the motor and so it is possible to get the complete filling of the motor with water.

Retighten the 1 and 2 plugs.

After this operation the electropump must lie in vertical position in order to avoid the minimum outlet of water from the motor.

INSTALLATION

Before starting with the fitting up, carefully verify that the electric cable has not suffered any damage during the transport.
IN NO EVENT THE CABLE MUST BE USED FOR LIFTING OR PULLING THE SUBMERSIBLE PUMP.
The unit must be handled with care and attention AVOIDING ANY KNOCKS AND BLOWS.
Place the electropump under the ginpole and start with the installation as follows:

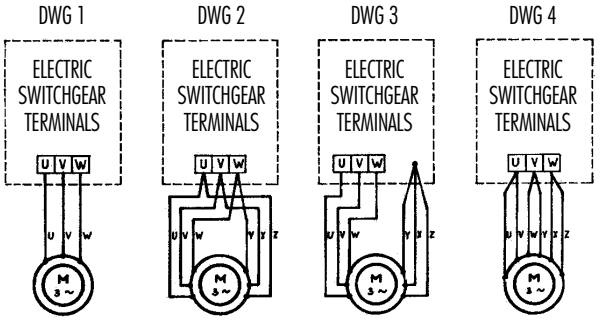
a) Verify that the bolts of the counterflange applied to the pump delivery mouth are well tight.
b) Fix one of the two clamps to the upper end of the first pipe.
c) FIX TO THE PIPE THE POWER FEED CABLE MY MEANS OF THE PROPER CABLE CLAMPS.
d) Lift by the hoist the electropump and lower it into the well until the clamp leans on the well head.
e) Apply to the first pipe the second one after having fitted the other clamp to its upper end.
f) Take away the first clamp and lower all until the second clamp leans on the well head.
g) Repeat the operation so as to reach the foreseen depth.

The laying depth of the pump should be fixed AT LEAST at mt. 5,00 BELOW THE DYNAMIC LEVEL of the well water.
ABSOLUTELY AVOID TO LAY THE UNIT ON THE BOTTOM OF THE WELL.
The camp fixed on the last pipe and leaned on the well head, supports the electropump and the pipe. On the pipe out of the well it is advisable to insert horizontal non return valve and a gate valve for the regulation of the electropump according to its performances.

ELECTRIC CONNECTION

Connect the electropump, by means of its cable, to the electric switchgear for starting, checking and protection as follows:

a) Electropump at fixed voltage with threepoles cable: see dwg. 1.
b) Electropump suitable for double voltage, with six poles cable (for example V. 220/380):
   for connection at V. 220, see dwg. 2
   for connection at V. 380, see dwg. 3
c) Electropump of high power, at fixed voltage, with six poles cable: see dwg. 4.



INSTALLATION RULES FOR ELECTRIC SWITCHGEAR

The electric switchgears generally used are:
- type "AD" for direct starting at d.c.
- type "ARS" at statoric resistances
- type "AIS" at statoric impedances
- type "AST" at star-delta
- type "AUT" at autotransformer.

The electric switchgears, special cases excepted, must be rigidly fixed on a support in such a way to be reached by a man, and however, at least 50 cm. from the ground.

a) Verify that the electric switchgear is suitable for the line tension.
b) Connect the electric feed line to the proper terminals (see the scheme inside the electronic switchgear).
c) Connect the poles of the electropump cable to the proper terminals (see point 4 "Electric connection").
d) Make an "electrical bonding" connecting by a suitable copper wire the ground terminal of the electric switchgear to an earth plate.

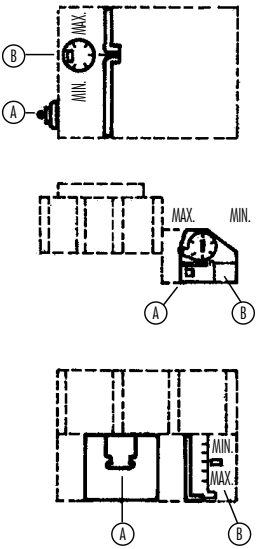
We advise against the use of the electropump or well pipe as earth plate.

PLANT STARTING

Make the current arrive by operating on the general main switch.

a) Close almost completely the gate valve place on the pipe out the well.
b) Press the "A" reconnection push button placed on the electric switchgear.
c) Move the "B" push button or trigger of the electric switchgear thermic relay into the maximum calibration position.
d) Operate the electropump pressing the "start" (red) push button or operating the proper commutatop on the "manual" or "automatic" position.
e) Open slowly the gate valve until the requested performances are obtained.
   IF THE PUMP DOESN'T GIVE THE REQUESTED PERFORMANCES, INVERT THE ROTATION DIRECTION, exchanging two poles of the feed cables in the electric switchgear terminals.
f) Let the pump run for about an hour, checking its absorption on the ammater.
g) Regulate the thermic relay push button, or trigger, at the calibration point which must be about 10-15% higher than the electropump absorption.

In case the relay should switch off the running, it's necessary to verify if there are some external reasons (low tension, lack of phase, etc.) which cause this failure.



IRREGULARITIES THAT MAY OCCUR AND HOW TO ELIMINATE THEM

CAUSES	REMEDIES
1) THE ELECTROPUMP GIVES SCARCE CAPACITY AT LOW HEAD	
a) The motor turns backwards.	**- Invert the connection of 2 of the 3 phases.**
b) Voltage and frequency lower than the normal.	**- Check the voltage and frequency while the unit is running. Call the electric power supply Company's attention to the matter. If possible, increase the feed cable section.**
c) Broken gaskets leakings in the delivery pipe, loose flanges or joints.	**- Draw out the unit and check.**
d) Owing to sand in the water, the impellers and diffusers are worn out.	**- Draw out the unit and send it to the factory or agent to replace the worn out parts.**
2) THE UNIT RUNS BUT DOES NOT DELIVER WATER	
a) The check valve is jammed.	**- Draw out the unit and check.**
b) The dynamic level of the well has fallen below the strainer. In this case, the current absorption is less than that specified.	**- Adjust the drawing of water from the well, closing the gate so as to prevent the sudden falling of the dynamic level. Install the AP.53 protection device against dry running.**
3) THE TELEOVERLOAD CUT-OUT TRIPS, STOPPING THE ELECTROPUMP	
a) Lack of phase.	**- Check the incoming voltage at the meter. Check the teleoverload fuses. verify that the closing of the contacts is exact.**
b) Low voltage and consequent elevated current absorption.	**- Check the transformer voltage and power. Call the electric power supply Company's attention to the matter. If possible, increase the feed cable section.**
c) Erroneous calibration of the thermic relay.	**- Repeat the calibration, following this instruction-book at item 6.**
d) Ambient temperature above 20° C.	**- If possible, move the unit to a cooler place. Otherwise increase the thermic relay calibration.**
e) The unit tends to jam, increasing the current absorption.	**- Perhaps the unit is obstructed by sand. in this case, by inverting 2 phases and provoking the unit reverse, it will probably be freed from obstruction. Otherwise draw out the unit and send it to the factory or agent for a check-up.**
f) The unit gives performances higher than the specified ones. An elevated current absorption will be noticed.	**- Adjust the gate-valve until the specified absorption is achieved.**
4) ON STARTING THE UNIT, THE TELEOVERLOAD CUT-OUT TRIPS, BLOWING OUT THE FUSES	
a) Cable or joint broken.	**- Test the sequency, proceeding by elimination.**
b) The motor winding is earthed.	**- Check with an ohmmeter. In the affermative, draw out the unit and send it to the factory or agent to replace the winding.**

The customer may proceed for the elimination of irregular operating of the unit if this comes from the external plant of the electropump.
THE AGENT OR THE FACTORY ARE NOT RESPONSIBLE IF THE CUSTOMER INTERVENES ON THE ELECTROPUMP WITHOUT HAVING BEFORE CONSULTED ONE OF THE TWO PARTIES.
It is always necessary to state the type of electropump, its serial number, the date of its installation, the customer's name to whom the electropump has been sold.

CE

Declaration of Conformity

The Manufacturer : PANELLI s.r.l.
Via Rana n.63, Zona Industriale D5
15122 Spinetta Marengo, **Alessandria - ITALIA**
tel.: +39 0131 619506
fax: +39 0131 619017
web: www.panellipumps.it

Declares, under his own responsability, that the borehole pumps :

4'' Models : 95 PR - 95 PRX - 95 PRG - 95 SX - 95 REC
6'' Models : 140 PR - 140 PRX - 140 PSX - 140 PS - 140 RX - 140 SX -140 REC
8' ' Models : 180 RX - 180 SX - 180 REC
10'' Models : 230 REC - 230 SX
12'' Models : 270 REC – 270 SX
14' Models : 330 SX

Are in conformity with the following European Directives :

- ***2006/42/CE (Machines Directive)***

And are in conformity with :

- ***EN 9906 - Rotodynamic pumps .Hydraulic performance acceptance test. Grades 1,2 and3.***
- ***EN 809 - Pumps and pump units for liquids. Common safety requirements.***
- ***EN 12162 –Liquid pumps.Safety requirements.Procedure for hidrostatic testing.***

The Manufacturer declines all responsibilities in case of use not shown in the instructions manual supplied together with every pump.

The Technieal file is available at the company headquarters.

Spinetta Marengo (AL),03/06/2019

The Legal Representative
Ing. Secondo Mariani

CE

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Declares, under his own responsibility, that the submersible motors single phase and threephase :

4'' Models : P4005 - P4007 - P4010 - P4015 - P4020 - P4030 - P4040 - P4055 - P4075 - P40100

6'' Models : P 605 - P 607 - P 610 - P 612 - P 615 - P 617 - P 620 - P 625 - P 630 - P 635 - P 640 - P650

8'' Models : P 850 - P 860 - P 875 - P 890 - P 8100 - P 8125

10'' Models : P 10100 - P 10125 - P 10150 - P 10175

Are in conformity with the following European Directives :

- ***2014/35/CE (Lov Tension Directive)***
- ***2014/30/CE (EMC directive))***
- ***2011/65/CE (RoHS)***

The Manufacturer declines all responsibilities in case of use not shown in the instructions manual supplied together with every motor.

The Technical file is available at the company headquarters.

Spinetta Marengo (AL),02.01.2019

The Legal Representative
Ing. Secondo Mariani



italian excellence since 1906

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