

**PLEASE KEEP THIS BOOK  
NEAR TO YOUR GPS**



## **INPRO GPS INSTALLATION MANUAL**



INVESTIGACIÓN Y PRODUCCIÓN S.A.

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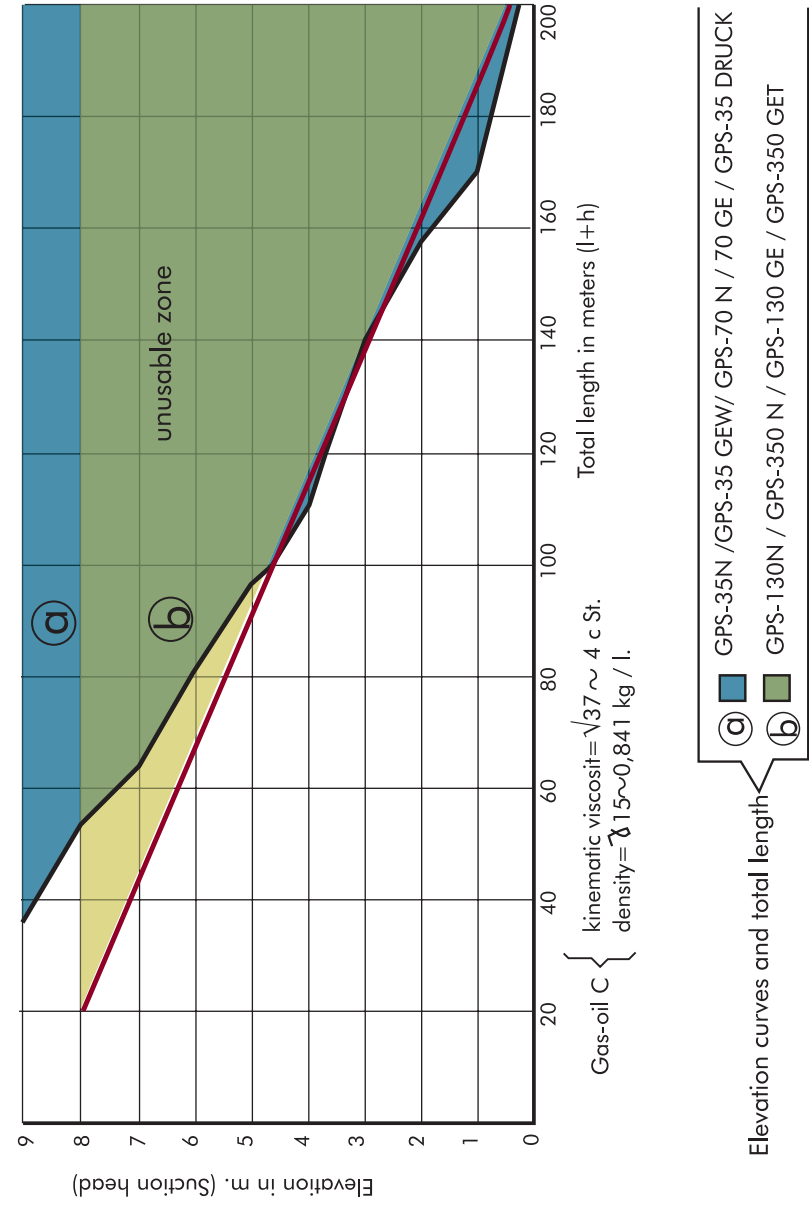




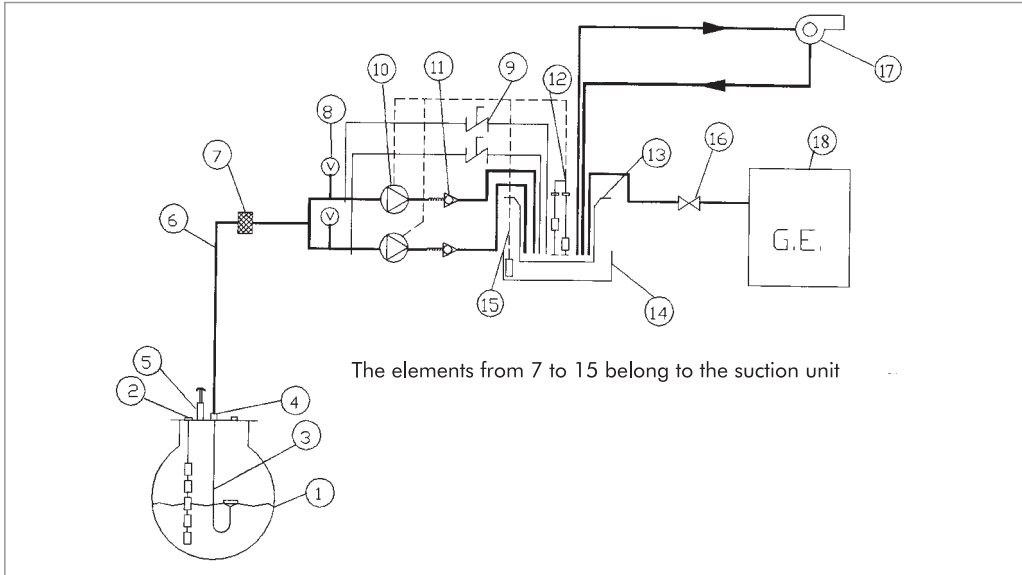
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**BUILT, TESTED AND CERTIFIED UNDER  
DIN-12514-1 FOR EU**



## Fuel Supply for a Generator Unit and Burner via INPRO Twin Suction Unit



- |                              |  |
|------------------------------|--|
| 1. Main storage tank.        | 9. (*) 2 by-pass valve.                  |
| 2. Remote level gauge.       | 10. (*) 2 electric gear pump.            |
| 3. Floating suction.         | 11. (*) 2 anti-return valve.             |
| 4. Manhole.                  | 12. (*) Safety/service switches (level). |
| 5. Ventilation tee.          | 13. (*) Tank.                            |
| 6. Intake pipe.              | 14. (*) Drip tray.                       |
| 7. (*) Self-cleaning filter. | 15. (*) Spillage detection gauge.        |
| 8. (*) Vacuum gauge.         | 16. Quick shut-off valve.                |
|                              | 17. Burner / Boiler.                     |
|                              | 18. Generator unit.                      |

The suction units must be placed on a flat and strong surface, so that they do not slide either vertically or horizontally.

The drip tray is installed on the floor below the equipment.

Attach the drip detection device to the clip on the tray.

Then put the PVC-covered copper or aluminium pipe into position (this is the pipe that is used in Europe for hydrocarbons); this pipe runs from the tank to the intake. It is recommended that the pipe be composed of one single section so that it is completely airtight.

### DO NOT USE FOOTVALVE

This is not necessary because it is an automatic suction pump. Such actions increase the head loss. It prevents the return action from taking place.

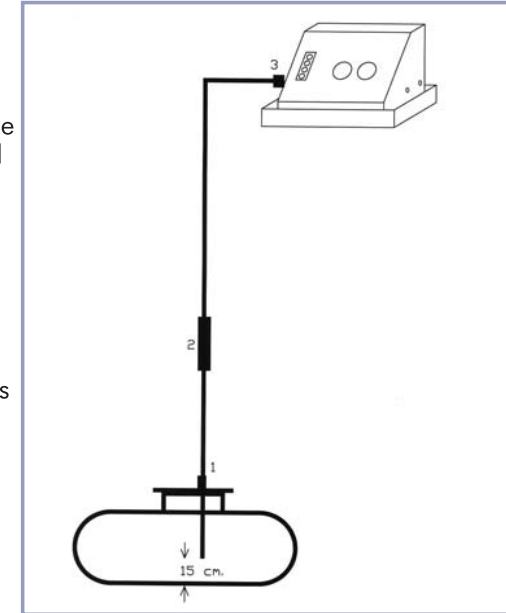
Use ring-shaped compression connectors for Gaskets 1, 2 and 3.

Either be a gap of 15 cm must be left between the intake pipe and the bottom of the tank or a floating intake system must be used.

Gasket 2 will make the process of removing the "manhole" easier. Connector 1 must serve as a passer to the intake pipe. Gasket 3 will connect the pipe to the unit filter.

The outdoor intake pipe must be insulated.

The diameters for the piping are shown in the technical characteristics table (Table 1). The intake distances are shown on the graph concerned (Graph 1).

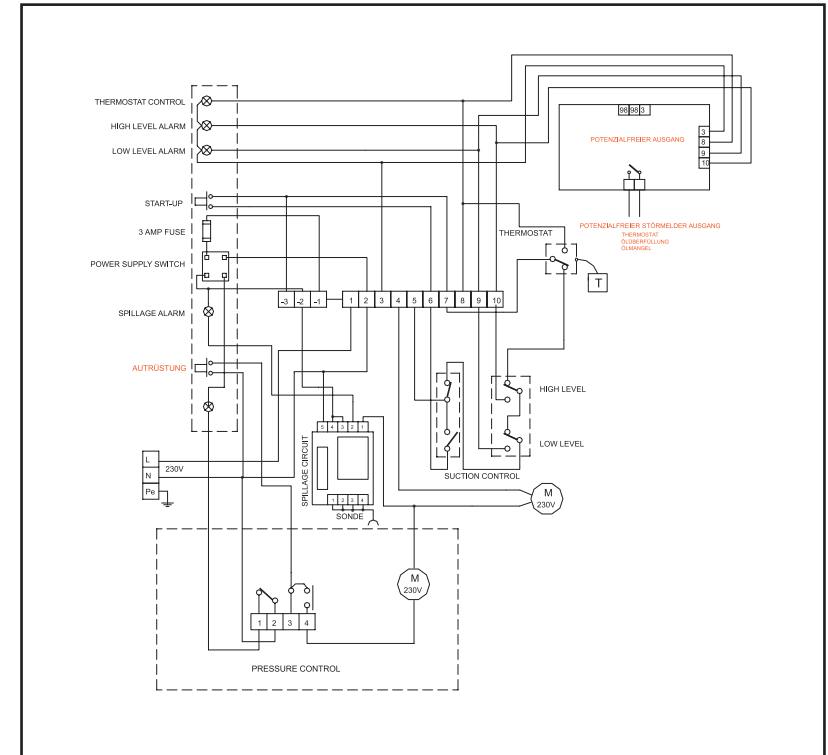


Finally, the outlet(s) to the burner(s) must be connected taking into account the fact that it is a two-way system. The electrical connection must be put in place as soon as the hydraulic connection has been correctly attached, and this is done by inserting the plug for the equipment into the socket.

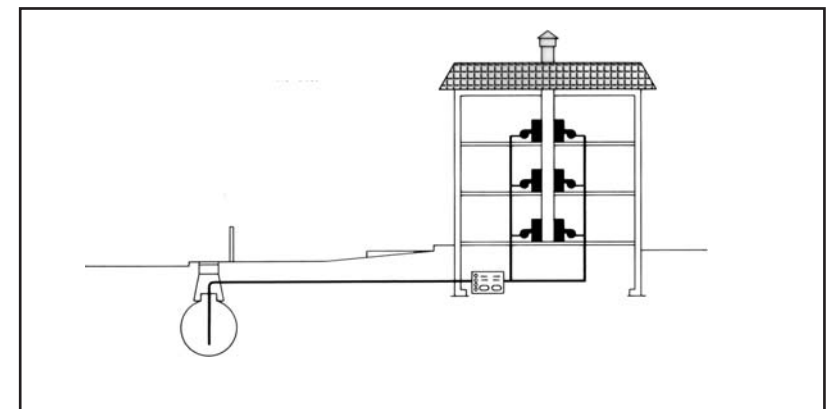
Intake pipe burner.

- a) Use a pipe with the same characteristics as for the intake. See Table 1
- b) Prepare the intake as shown in the diagram.

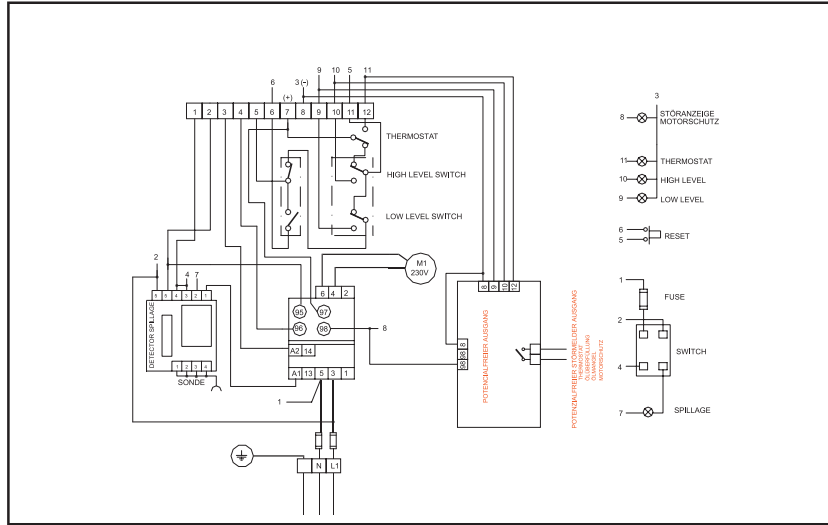
## Electrical Diagram for GPS-35 Druck



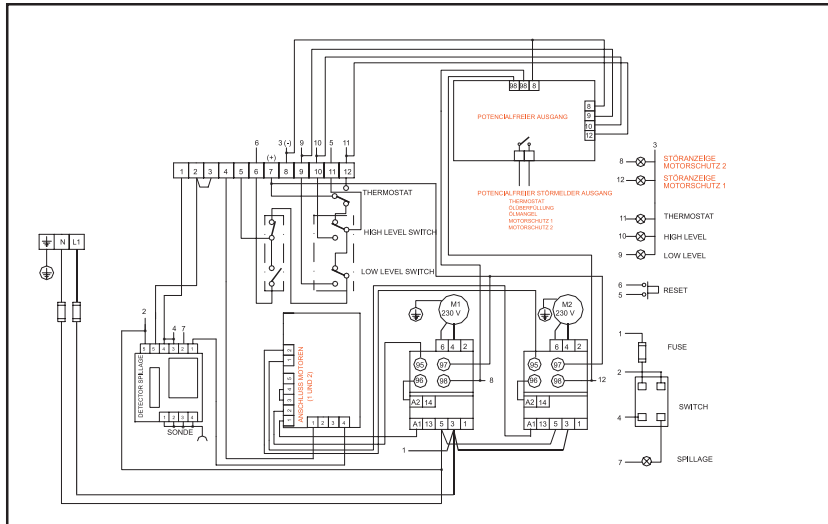
## Installation Example



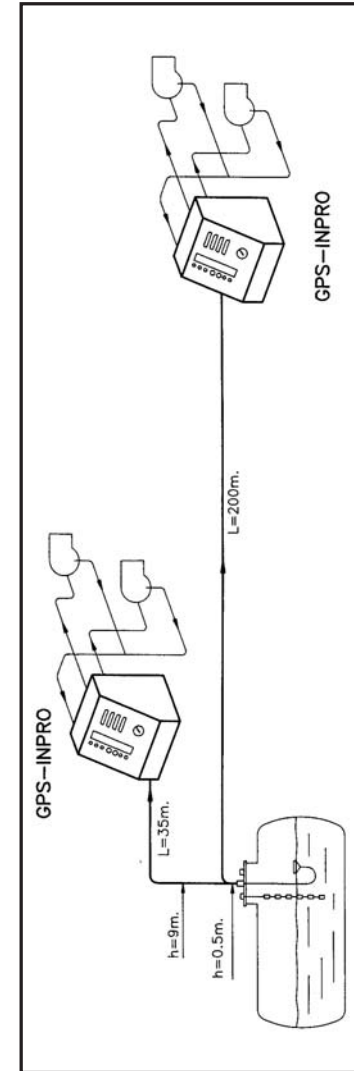
## Electrical Diagram GPS- 350 NWP



## Electrical Diagram GPS- 350 GEDP



## Installation Diagram



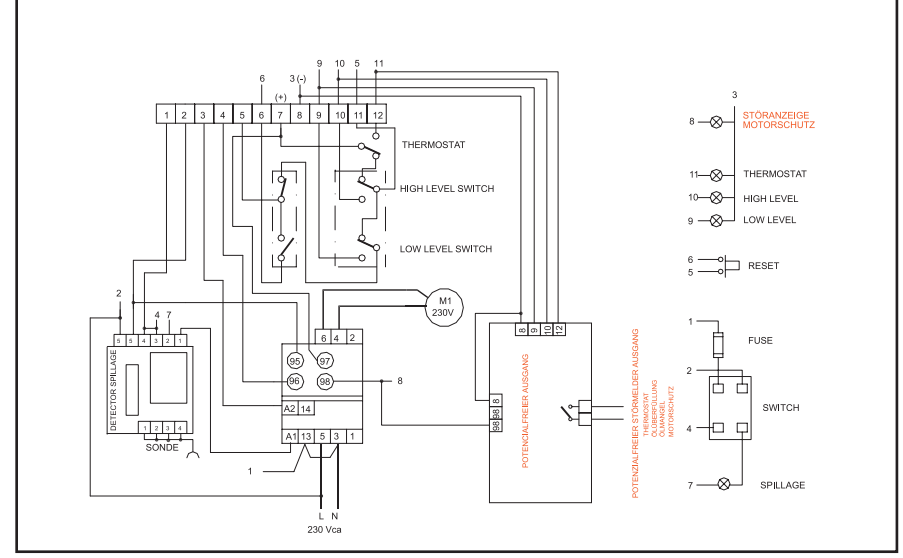
Graphic 2

## Technical Characteristics of the Suction Units GPS

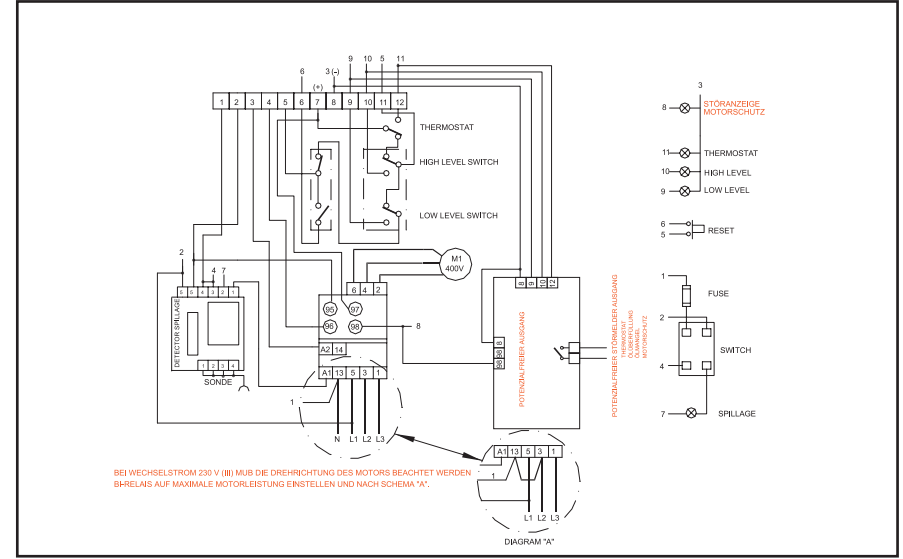
Model	Flow Rate (L/h)	Supply Voltage (VOLTS)	Consumption (AMPERE)	Capacity (CV)		Intake (mmØ) Pipe	Out and Return Burner (mmØ) Pipe	Tank Capacity (Litros)	Sound Level (dB/A)
				Capacity	Consumption				
<b>GPS-35 N</b>	30	230 Single-Phase	1.38	1/6	12	12	8	46	
<b>GPS-35 GE</b>	30	230 Single-Phase	1.38	1/6	12	12	27	46	
<b>GPS-35 DRUCK</b>	30/30	230 Single-Phase	1.38	1/6	12	12	8	46	
<b>GPS-70 N</b>	70	230/400 Three-Phase(*)	0.9/0.43	1/4	15	15	35	48	
<b>GPS-70 GE</b>	70	230/400 Three-Phase(*)	0.9/0.43	1/4	15	15	60	48	
<b>GPS-130 N</b>	130	230/400 Three-Phase(*)	1.15/0.55	1/3	15	15	35	49	
<b>GPS-130 GE</b>	130	230/400 Three-Phase(*)	1.15/0.55	1/3	15	15	60	49	
<b>GPS-350 N</b>	350	230/400 Three-Phase	1.65/0.9	1/2	18	18	217	49	
<b>GPS-350 GE</b>	350	230/400 Three-Phase	1.65/0.9	1/2	18	18	217	49	

(\*) Also available in 230 version single-phase (W) - Motor Protection IP-55 (except GPS-35, which is IP-50)

### Electrical Diagram GPS-70/130 NWP

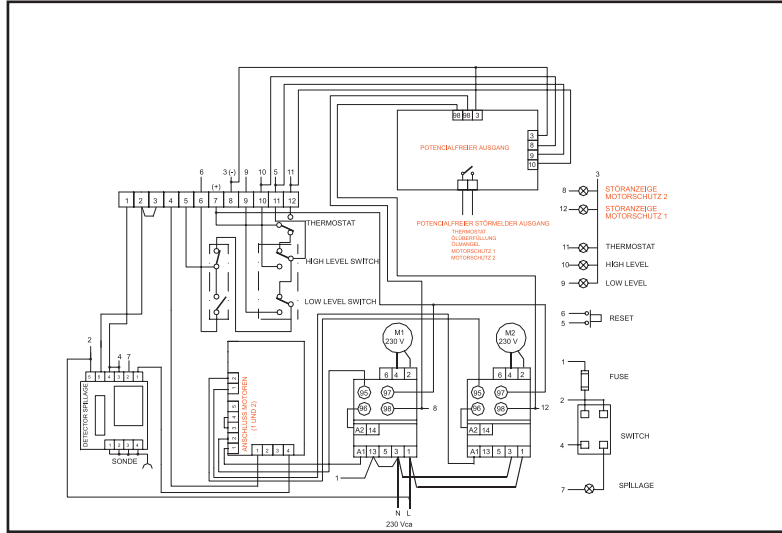


### Electrical Diagram GPS- 70/130 NDP

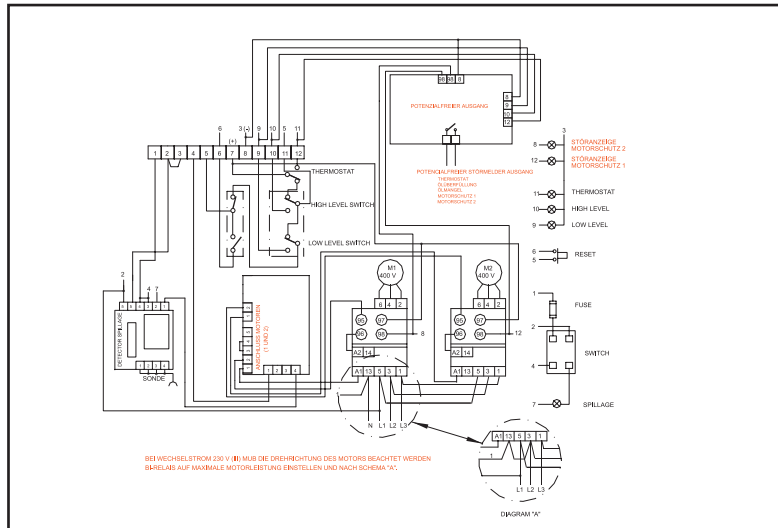




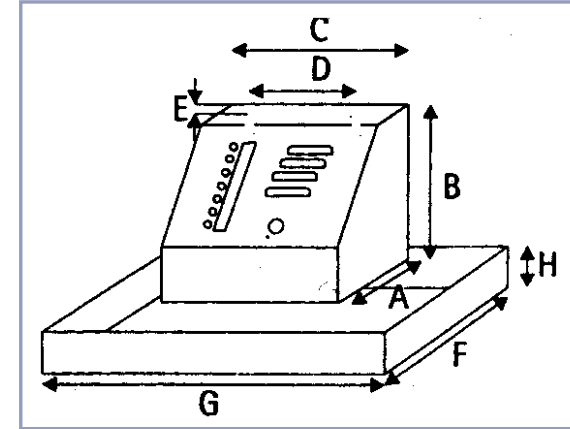
## Electrical Diagram GPS-70/130 GEWP



## Electrical Diagram GPS-70/130 GEDP



## Size (mm)



GPS -35N GPS-35 GE GPS -35 DRUCK GPS -70N GPS-70GE GPS-130N GPS-130GE GPS-350N GPS -350 GE

A	238	260	238	312	312	312	312	500	500
B	350	350	350	640	640	640	640	930	930
C	340	640	582	420	760	420	760	650	980
D	240	540	482	0	0	0	0	0	0
E	20	20	20	0	0	0	0	0	0
F	400	400	400	480	480	480	480	480	480
G	500	500	740	710	940	710	940	950	130
H	85	85	85	110	110	110	110	150	150
Approximate Weight (kg)	10	18	37,5	35	48	36	48	75	97

All the items of equipment leave the manufacturing plant connected for three-phase networks at 400 V., with neutral, except for special models.

The contactor coils are invariably supplied at 230 V.  
For three-phase networks at 230 V, the following must be modified:

- a) The power supply (Bridge BS...).
- b) Temperature regulation as shown in the regulation table.

### Signals.

- Temperature pilot 1 and 2: indicates the temperature device for M1 or M2 has blown.
- Thermostat pilot: indicates locking due to high temperature in the tank (> 40° C)
- High level pilot: indicates locking due to high level in the tank.
- Low level pilot: indicates locking due to low level in the tank.
- Spillage pilot: indicates locking due to spillage from the suction unit.

### CONTACTOR

This component leaves the manufacturing plant adjusted and connected to 400 V.  
(See electrical wiring diagram).

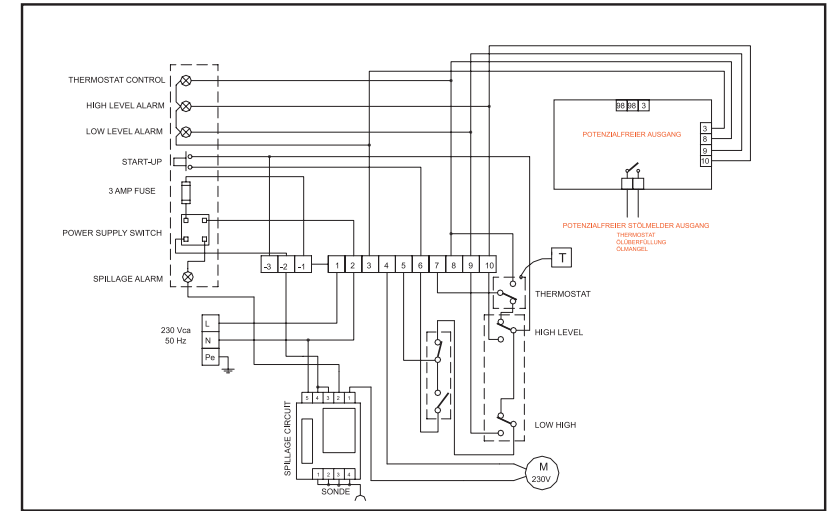
The unit is prepared for working at 230/400 V.

If it has to be installed, connect it at 230 V (three-phase), the following changes have to be made:

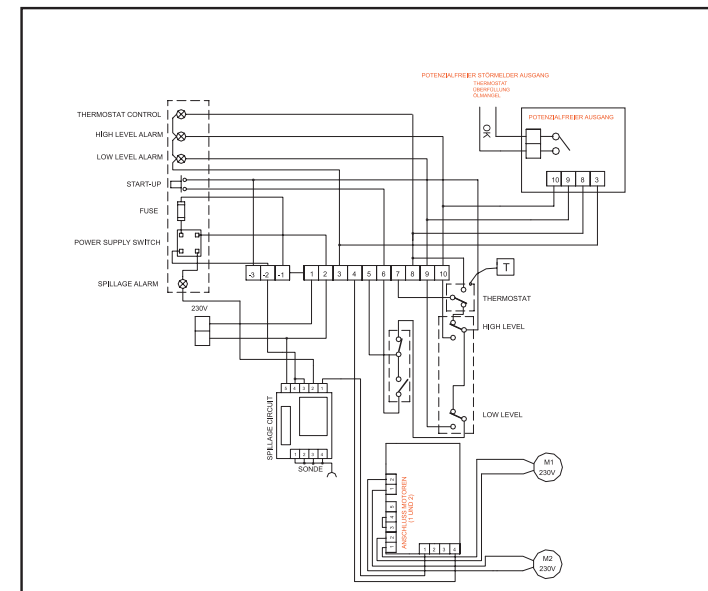
- 1°) Connect the motor in star-formation
- 2°) Bridge B with S
- 3°) Regular the temperature relay as shown in the table:

	230 (III)	400 (III)
<b>GPS 70</b>	0,7	Minimum
<b>GPS 130</b>	1,7	Minimum
<b>GPS 350</b>	2,8	Minimum

## Electrical Diagram GPS-35 NWP



## Electrical Diagram GPS-35 GEWP

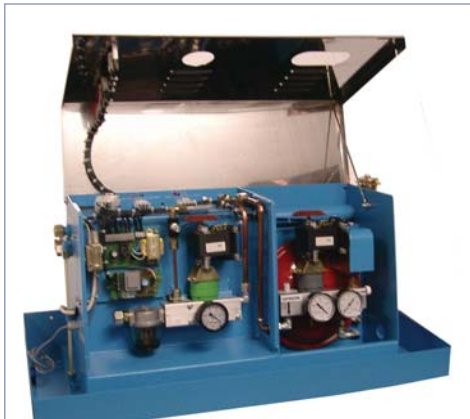


## Suction Unit

GPS-35 DRUCK



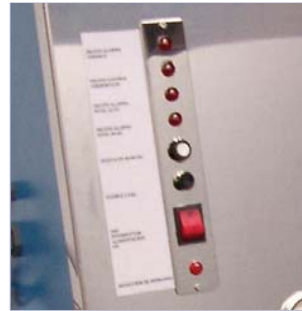
GPS-35 DRUCK



The user must look at the front of the SUCTION UNIT and follow the order shown below:

- 1) When the main switch is switched on, the "Low Level" pilot lights up. The pumping motor will start working, but if it does not, push the "restart" button, and the pumping motor will start up.
- 2) Check the way the pumping motor rotates, if it is rotating in the wrong direction exchange two phases.
- 3) Open the by-pass valve slightly until the gas oil runs in from the main tank. This will ensure that the pump remains lubricated until the fuel arrives.
- 4) Allow the gas oil tank to fill up until the "Low Level" pilot goes off.
- 5) As soon as the gas oil reaches the SUCTION UNIT tank, shut off the by-pass valve so that the equipment devotes its entire suction capacity to bringing gas oil from the tank.
- 6) When the gas oil has filled up the SUCTION UNIT tank, the service circuit breaker will stop the pump.
- 7) THE EQUIPMENT IS NOW READY TO START THE BURNER(S), BECAUSE THE SUCTION PUMP WILL AUTOMATICALLY MANAGE THE FUEL SUPPLY FOR THEM.

IF THERE ARE ANY PROBLEMS WITH THE CONNECTIONS OR THE COMMISSIONING PROCESS FOR YOUR INPRO SUCTION EQUIPMENT, DO NOT HESITATE TO GET IN TOUCH WITH US AT THE FOLLOWING NUMBER: TELEPHONE (+34) 91 871 92 94 OR THROUGH YOUR DISTRIBUTOR AND WE WILL DEAL WITH YOUR QUERIES.



Control Panel



Priming and Ventilation



Bypass Valve

## VACUUM GAUGE

This informs the user about any incidents that affect the intake circuit (depression) when air is being taken in. If air is taken in when the pump stops, the pointer will drop to zero.

If only a small amount of air is taken in, it will take longer (that is to say, it will drop very slowly, 1 hour, 2 hours or more).

If there are any obstructions, it will indicate a lot (50 - 55 cm/Hg), and this indicated the following:

- Intake pipe obstructed.
- Foot valve or some other mechanical obstruction.
- Dirty filter.

If the motor is working, the needle will mark "0" and it will not draw.

- Lack of fuel in the tank.
- The intake of air is considerable.
- The pump is dry (apply grease to it).



## MANOEUVRING CIRCUIT

Only for twin units.

This is responsible for switching from one pump to another. The duration time for the motors is regulated by the potentiometers. If the user wishes to cancel Motor 1, the potentiometer has to be turned to the left, in an anticlockwise direction, as far as it can go. This will stop the current supply reaching it and only Motor 2 will operate.

The same applies to Motor 2, that is to say, the potentiometer has to be turned to the right, in a clockwise direction, as far as it can go.

## THERMOSTAT

This controls the temperature in the tank and cuts off the power supply to the equipment when the temperature rises above 40° C.

## Suction Unit

GPS-130 GET



GPS-350 GET



## Suction Unit

GPS-70 NW



GPS-70 NW



### LEVEL CONTROL CIRCUIT

This circuit is responsible for controlling the start-up and shutdown for the unit depending on the level in the tank.

It cuts off the system when the level is too high or low, and the respective alarms go off.

### SPILLAGE CIRCUIT

This is for the unit when the spillage gauge detects the liquid from the drip tray.

### BY-PASS VALVE

This valve primes the pump(s) for major intakes or when the pump is dry.



### **Application:**

If the user wishes to prime the pump, first the nut has to be turned slightly to the left, and this causes it to prime itself and draw correctly.

This valve must be closed as soon as the equipment has taken in, that is to say, it must be turned as far to the right as possible, so that the equipment can concentrate all its suction capacity on drawing gas oil from the tank.



## FILTER

When the vacuum gauge marks more than normal, clean the box or, if it is of the self-cleaning type, turn the handle several times.

Once a year for each type of cleaning system.

Make sure that the gaskets are properly put back in place after the filter has been disassembled and reassembled. (Use oil to put the gaskets back in place).

If the material is cracked or has holes, "Replace it".

**Tools:** Set of spanners- Oil can. (Normal greasing oil)

**Spare parts:** Boxes - Screws - Nuts – "O"-Ring Gaskets – Plastic Cups and Complete Filters.

## FLEXIBLE PIPES

No special maintenance is required. However, as the rubber is nitrilic, it is advisable to replace it every 5 or 6 years.

**Tools:** Set of spanners (14 to 26).

### **Spare parts:**

Straight steel connector 10 x 3/8"

Straight steel connector 15 x 1/2"

Curved steel connector 10 x 3/8"

Curved steel connector 15 x 1/2"

Straight jacks 10 x 10 x 410

Straight jacks 15 x 15 x 450

Bent jack 15 x 15 x 450



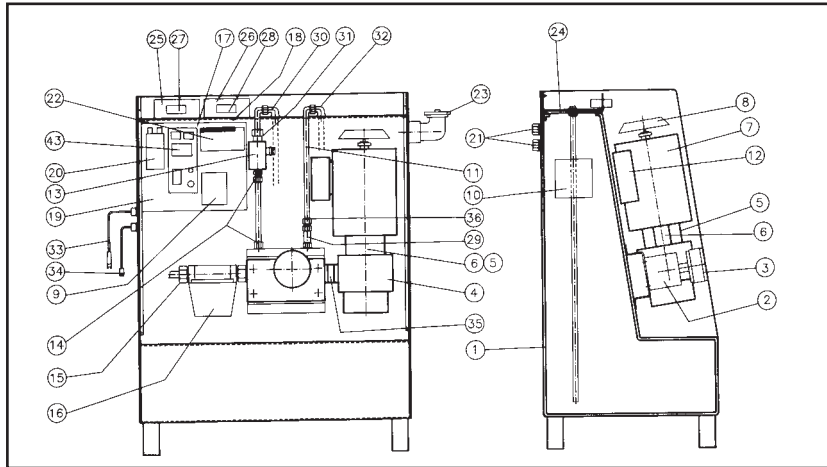
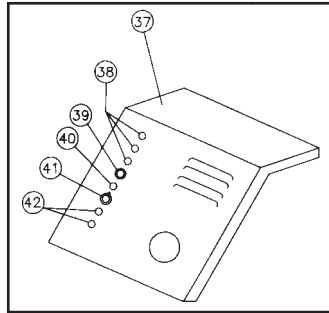
## Suction Unit

GPS-35 NW



GPS-35 NW





- |                                    |                                    |
|------------------------------------|------------------------------------|
| 1. Tank                            | 23. Filler top                     |
| 2. Manifold                        | 24. Cover with gasket              |
| 3. Vacuum gauge                    | 25. Service level outer cover      |
| 4. Pump                            | 26. Safety level outer cover       |
| 5. Connecting flange               | 27. Safety level connector         |
| 6. Coupling                        | 28. Safety level connector         |
| 7. 220 V motor                     | 29. Anti-return valve              |
| 8. Fan                             | 30. Elbow feed through (6 x 6)     |
| 9. Connector                       | 31. Elbow connector 1/8 x 6        |
| 10. Magnet floater                 | 32. Feed through (10 x 10)         |
| 11. Filing pipe                    | 33. Spillage detection gauge       |
| 12. Motor 16 condenser             | 34. Power supply cable with plug   |
| 13. By-pass valve                  | 35. Hydraulic connector (10 x 1/4) |
| 14. Straight connector 1/8 x 6     | 36. Straight connector (10 x 3/8)  |
| 15. Straight connector 1/2 x 15    | 37. Rustproof cover                |
| 16. Filter                         | 38. Neon pilot (12 V)              |
| 17. Service level gauge (Complete) | 39. Push button                    |
| 18. Safety level gauge (Complete)  | 40. Fuse                           |
| 19. Circuit support                | 41. "ON" switch                    |
| 20. Thermostat                     | 42. Level control pilots           |
| 21. Feed through (15 x 15)         | 43. Level control circuit          |
| 22. Spillage control circuit       |                                    |

### PUMP

If it has gone dry ( through running empty, water transfer, etc.). Squirt oil into the intake, while at the same time pressing on and off, on the reset button, until the gear mechanism is bathed in oil. ( If this is not successful ) Replace it. It is recommended that the retainer be changed???

**Tools:** Set of spanners (6 to 15) – Oil can. (Oil for normal greasing)

**Spare parts:** Pumps with sets of connectors mounted.

### CONNECTION (CLUTCH)

During the regular servicing every three months.

**Check:** Cotters and bolts (Love-Joil Model and clutch spring).

**Tools:** Set of Allen Keys from 2.5 to 6. Medium-sized screwdriver.

**Spare parts:** Sets of Love-Joil and clutch spring GPS-35.

### MOTOR

If the paintwork goes dark-coloured, this is due to overheating. Excess heat means that the motor is not running regularly.

A) Inspect the phase consumption (the consumption for all three phases must be the same)

B) If there are any noises: check the bearings to see if they are rubbing. If they are rubbing, replace them, it is recommended that the repairs be carried out in the workshop.

**Tools:** Multi-purpose tester, set of screwdrivers. Socket wrench (7). Set of spanners (6 – 15).

**Spare parts:** Complete motor – fan turbine.





## NON RETURN VALVE

A hard solid might enter causing the seal to shut incorrectly, but it is possible to remove it without dismantling, by releasing the jack. If this is not possible, replace it (remove it by heating the base, taking great care not to burn any other elements).

**Tools:** Set of spanners (14 – 26). Plumber's blowtorch (Butane).

**Spare parts:** Valves for all the models.

## CIRCUIT / MANOEUVRING / SPILLAGE CONTROL

Find out which circuit is causing the unit to operate poorly by measuring the voltage, continuity, etc, with the help of the electrical system.

**Tools:** Multi-purpose tester, electric screwdriver, electrical plans.

**Spare parts:** Electrical / electronic circuits for the suction units.

## MOTOR HOUSING

If it has deteriorated considerably as a result of the weather. Replace it completely.

If it does not work even though it is receiving current:

- a) Reset temperature.
- b) Check that there is continuity.
- c) Check the coil.

Whenever a failure is detected REPLACE.

**Tools:** Multi-purpose tester, electric screwdriver, electrical plans.

**Spare parts:** Coil (230 / 400), different temperature devices, contactor / temperature block.



## VACUUM GAUGE

This element does not require any maintenance, if it breaks down it should be replaced.

**Tools:** Butane gas blowtorch – Spanner Num. 14.

**Spare parts:** Vacuum gauge (53 and 63 ).

**Other spare parts:** Steel rings and nuts for pipes (10 and 15).



## OTHER PROBLEMS

- 1°) The pump revolves but does not draw:
  - Is there any fuel in the tank?
  - Has it become dry due to running empty? Grease.
  - Does the pumping motor turn in the right direction?
- 2°) The motor revolves but the pump does not:
  - Check the clutch spring or the connection.
- 3°) The motor does not work:
  - Is it receiving the right electricity supply?
  - Is the pilot light indicating low level / high level/ thermostat/ spillage / temperature lit up?
  - Press reset / lower the level / decrease the temperature/ get rid of the spillage / reset the temperature.