

SUNNY-G II

Model: PDA / PSA

Installation Manual

TATSUNO CORPORATION
TATSUNO ENGINEERING AND SERVICE

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MTB*****	09.07.15	Newly created	New creation	***
	13.10.08	Addition Trial Run.	Addition	

DEFINITIONS AND SYMBOLS

The following definitions and symbols are used in this manual.

DANGER 

Unless observed, it may lead to death, major injury, explosion, or fire.

WARNING 

Unless observed, it may lead to death, major injury, explosion, or fire.

CAUTION 

Unless observed, it may lead to injury or physical damage.

Marks representing "caution/ban/instruction"



The triangle () mark alerts caution.

The point of caution is shown inside the triangle (caution to electric shown in this example).

A general caution is indicated by .



The circle () mark shows banning.

What is banned is shown inside the circle (no fire in this example).

A general ban is indicated by .



The black spot () indicates an instruction.

The actual action is shown inside (the example shows turn off the power).

A general instruction is indicated by .

WARNING 

Read this booklet carefully before work.

In particular, the "Preface" explains important matters for preventing casualties and damages of properties. Please read and understand perfectly.

CONTENTS

1. Preface	1
2. Foundation Works.....	2
2-1) Fill piping work	2
2-2) Conduit work.....	3
2-3) Island work.....	3
3. Installation Flow Chart.....	4
4. Installation of Dispensing Unit.....	5
4-1) Method of installation	5
4-2) Flexible pipe mounting parts.....	6
5. Electrical Wiring Works.....	7
5-1) Connection of electric wiring	7
5-2) Wiring of power source line (for Suction type)	8
5-3) Wiring of submersible pump signal	9
5-4) Wiring of POS communication line (RS-485)	11
6. Trial Run	12
7. Appendix	13
7-1) Electric power cable	13
7-2) POS signal cable.....	14
8. Ground Work.....	16

1. Preface

This manual describes the installation work procedure of Tatsuno petrol dispensing pump / dispenser, Neo Sunny. The installation work is explained step by step. Read and understand the contents sufficiently and then start work.

It must be noted that our company is not responsible for any trouble caused by installation not conforming to this instruction.

The trial run after installation should be done by the engineers of the agent and installation work firm authorized by Tatsuno.

Ask your local Tatsuno agent, and transfer the system to the customer in the guaranteed state.

Keeping safety

- Attempt to keep safety by the following preventive measures.



- Enclose the working area with a protective fence or the like to keep off unauthorized vehicle or person.



- Don't use fire in the working area.



- Wear protective cap, shoes and goggles during work.



- Turn off power unless required.

Machines and materials necessary for installation

- **Equipment** for hoisting and moving the dispensing unit and tower unit
- **Stepladder** used for removing eye-bolts of tower unit or fixing the hose
- **Protective fence** or the like to prevent admission of unauthorized people

Electronic calibration

This Dispenser employs the electronic calibration for adjustment on instrumental error. When installation is completed, calibration and sealing are required.

*Mechanical calibration is available as an option.

2. Foundation Works

2-1) Fill piping work

1. For petrol piping work, check the fuel type (prevention of wrong line) and piping position (prevention of center of riser piping = protection of flexible pipe).

Confirm together with the field supervisor.

- Install the riser piping correctly according to the flexible pipe connecting position of the dispensing pump. (See commercial drawings.)

For installation of flexible pipe, conform to the following conditions strictly.

- Maximum allowable range in contracting direction: 20 mm
- Allowance in expanding direction: 0 mm (no expansion allowed)
- Maximum allowable range of center deviation: 60 mm

WARNING



- If the installation position of flexible pipe is wrong, the life of the flexible pipe may be shortened, and it may cause leaks.

- Set up the riser piping vertically and fix provisionally with proper supports to prevent swinging right and left. (Remove the supports when installing the pump. To prevent electrolytic corrosion, when fixing, insert insulator to protect the pipe.)

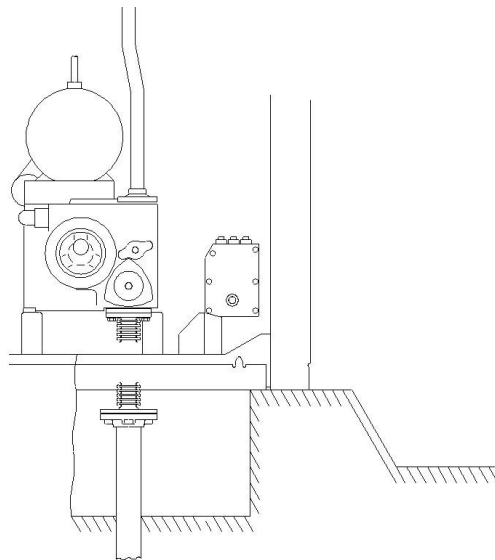
<Suction type>

- Adjust the height of the riser piping so that the transportation flange may be 45 mm below the top surface of the island.

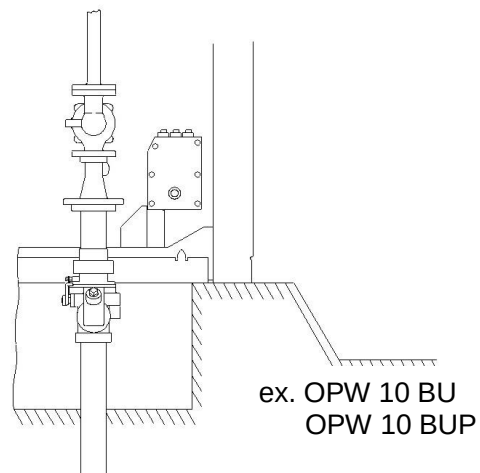
<Pressurized type>

- Install the emergency shut-off valve so that its bottom is positioned 116mm below the island surface.

Refer to attached drawings at page 34 to 37 for the details.



Suction type



Pressurized type

- Treat the piping with rust preventives to protect it.

2-2) Conduit work

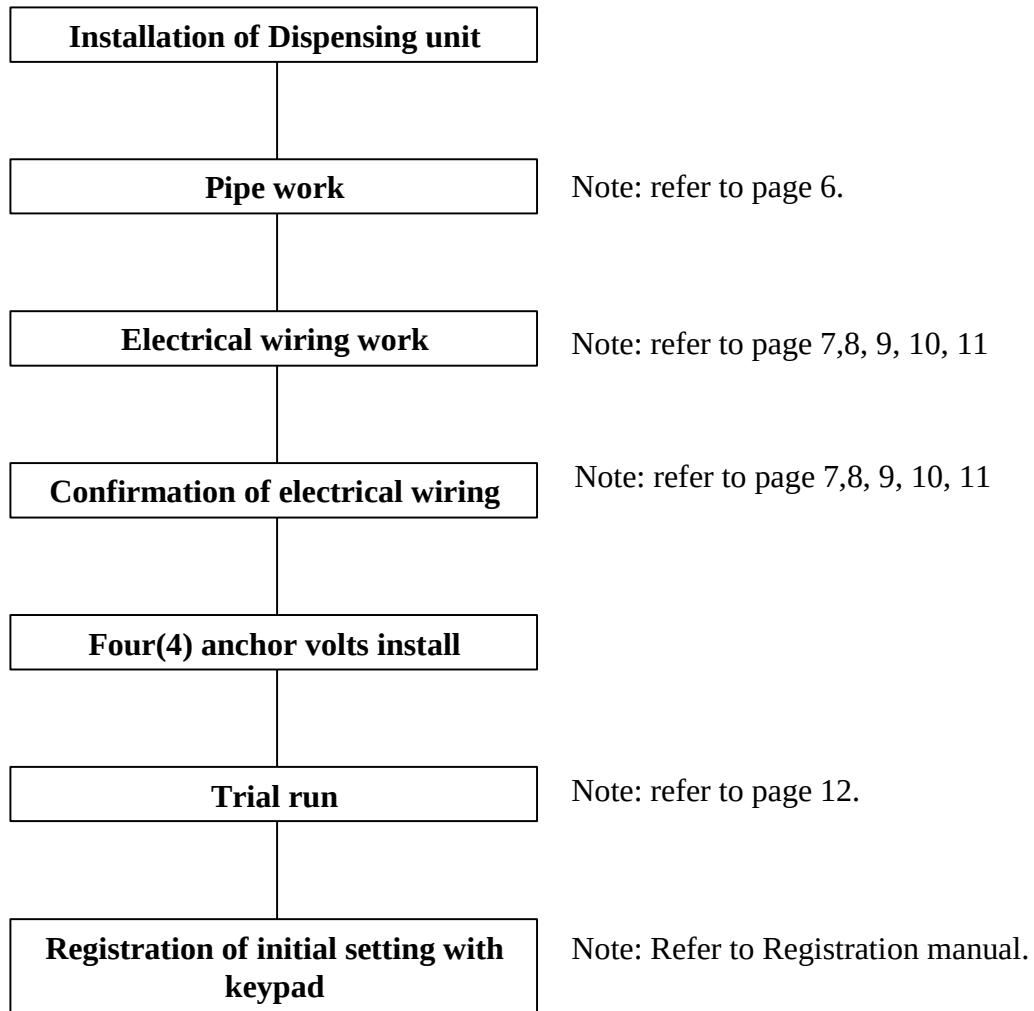
- 1) Refer to the commercial drawings to confirm the starting position of the conduit.
- 2) Layout procedure of conduit
 - Power source line
Install conduit for every dispensing pump from the distribution board.
 - POS
Conform to the installation work instruction of POS.
- 3) Distribution board work
 - Power source line
Furnish every dispensing pump with a branch switch.

2-3) Island work

- 1) Confirmation of island work process
 - The island work is related with the timing of petrol piping work and installation of dispensing pump, and determines the quality of the entire installation work. Carry out according to the work process.
- 2) Checking of island installation status
 - Cure for at least a week or more in order to guarantee strength of the anchor.
 - Make sure the island surface is horizontal, without gradient or undulation.
(To prevent inclination of installation or forming of gap against the base line.)
 - Check the effective dimension of the island pit.
(For keeping the strength of hole-in-anchor and ease of work in the pit.)
- 3) Checking inside of island pit
 - The inside of the pit should be structure so as to keep waterproof.
(To prevent secondary disaster due to penetration or diffusion of fuel or water under the ground.)
 - After installation of the dispensing pump, caulk the surrounding of the pump to prevent en of water into the pump.
(To prevent diffusion of fuel or water under the ground and to protect the piping.)

3. Installation Flow Chart

1. After packing is opened, check the Dispensing unit of the outside and the inside.
2. Confirm the height of the suction pipe (Island surface to the tip of the pipe. For suction type = 45mm, For Pressure type = 116mm), and follow next actions.



4. Installation of Dispensing Unit

WARNING



- During hoisting work, don't allow any person around the machine or under the lifted cargo.

4-1) Method of installation

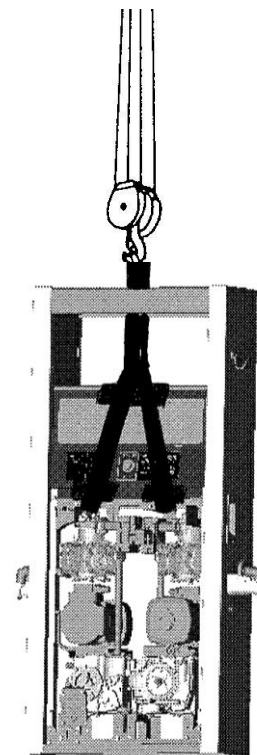
- 1) At the time of construction for the island, mount the anchor bolts in preparation for the dispenser installation.
- 2) Apply center frame of the dispensing unit, and lift by hoist or similar, and set on the island.

Note

When lifting, adjust the hoisting rope so as not to damage the panel.

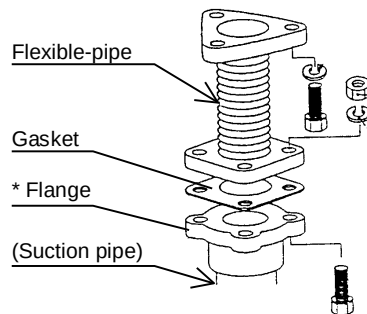
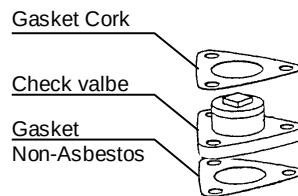
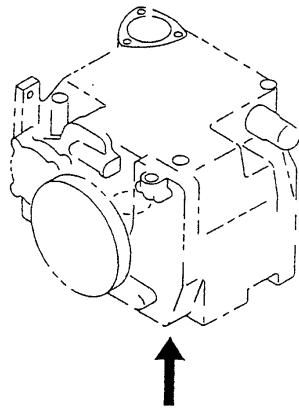
Note

Do not climb on top of the top case while working. This will deform the top panel.



4-2) Flexible pipe mounting parts

This is suction type (Model: EP-1001)



5. Electrical Wiring Works

WARNING



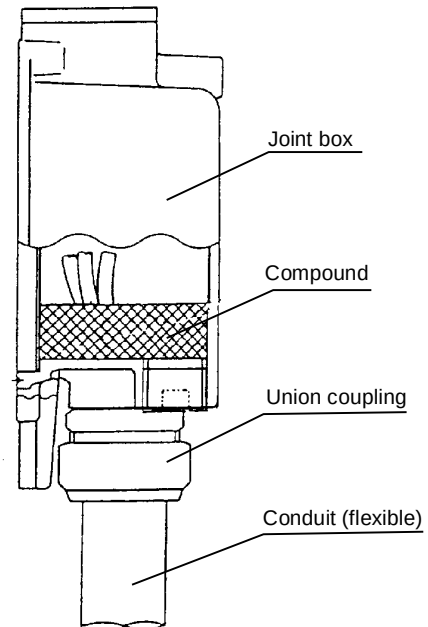
- Make sure the power source is cut off.

5-1) Connection of electric wiring

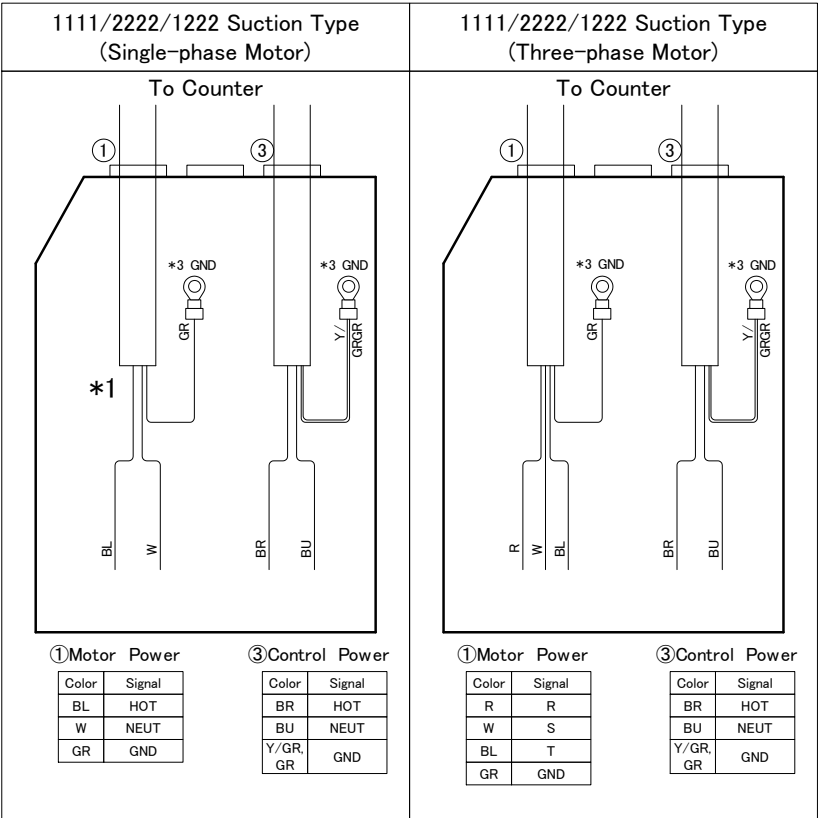
- For electric wiring, connect the wire for power source (local voltage) and wire for control circuit and POS up to the island under the ground, and further connect to the wire and crimped terminal in each joint box of the dispensing pump.

Notes

1. Treat the underground wiring side with compound according to the specification of pressure-tight explosion-proof work.
2. When closing the cover of joint box, make sure the peripheral waterproof packing is securely fitted in the groove.
3. When closing the cover, be careful not to pinch the cable.
4. As the flexible tube used between $\varnothing 22$ underground conduit and joint box, the size $\varnothing 16$ is convenient for the work. However, the screw size for joint box connection should correspond to $\varnothing 22$.
5. Cover the riser connection hole of the joint box which is not used, with a plug.
6. Connect the wiring so that the motor rotates clockwise as seen from the pulley side.
7. After completion of all wiring, check the wiring, and measure the insulation resistance and grounding resistance.



5-2) **Wiring of power source line (for Suction type)**



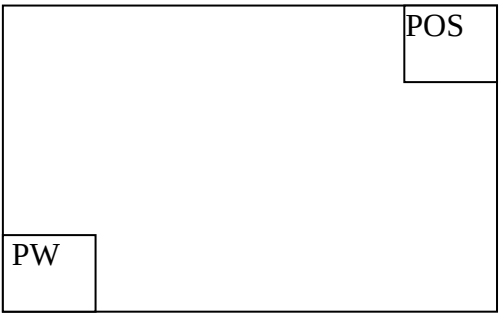
Notes

Top view of Dispenser

Suction Type

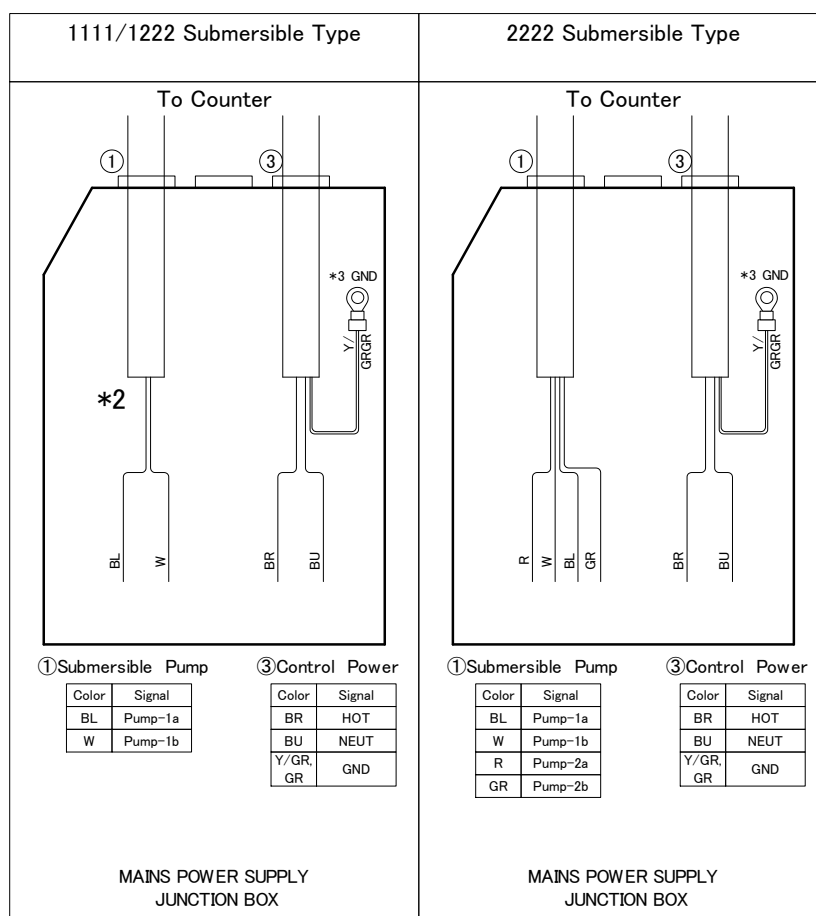
Model : 1111. 2222. 1222

Side 2



Side 1

5-3) Wiring of submersible pump signal

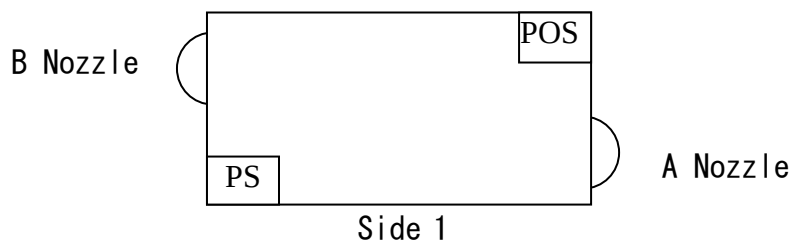


Notes

Top view of Dispenser

Pressurized Type

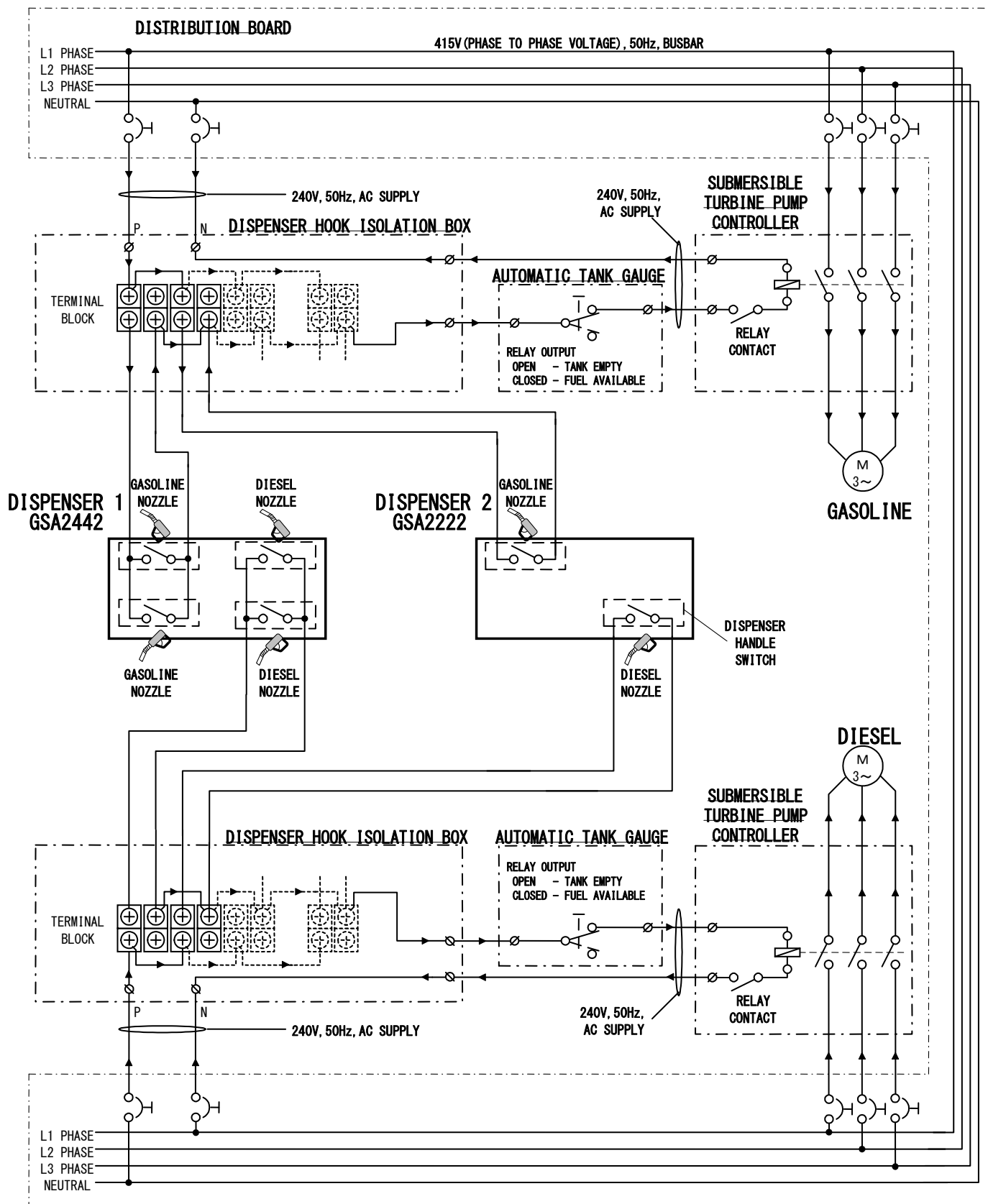
Model : 111. 2222. 1222



Notes

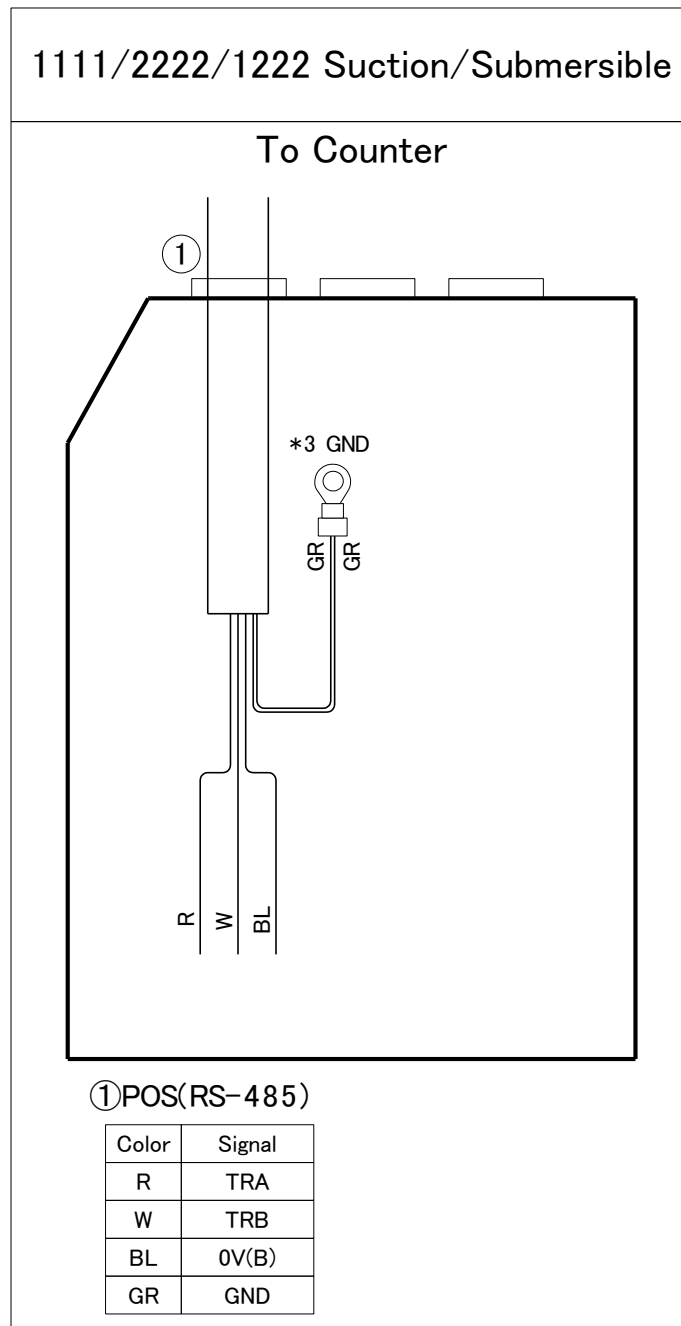
PW: Power source, PS: Pump Signal

Typical Electrical connection between STP and Dispenser



5-4) Wiring of POS communication line (RS-485)

In case of a dispenser is connected with POS



6. Trial Run

WARNING



- To be done by the service engineer of Tatsuno agent.
- Read all related manuals sufficiently beforehand.

- Detach front panel, and conduct trial run in the following procedure.

<Suction type>

- 1) Check the rotating direction of the pump motor in the procedure below.
 1. Remove V-belt
 2. Turn on branch switch of dispensing pump.
Make sure both displays are shown.
 3. Unhook the nozzle.
 4. Make sure the pump motor rotates clockwise.
 5. Put back the nozzle on hook, and turn off branch switch of dispensing pump.
 6. Put back V-belt
- 2) Pump operation.
 1. When trial run don't run pump in dry condition more then four(4) minutes continuously.
Otherwise the pump should be damaged or broken.
 2. Don't operate 'Closed Pump Running' more then ten(10)minutes continuously.
Otherwise the pump should be damaged or broken.

Note: 'Closed Pump Running' means just running a motor and pumping unit
By closing nozzle and not fueling.
- 3) Pass oil to flush the piping.
Check piping parts for fuel leak.
 - After flushing, clean the pump strainer.
 - After cleaning, force out air from the piping.

Note

If air remains in the piping, when the nozzle is unhooked, the safety stop function is actuated to stop the pump.
In this case, by pressing the nozzle switch with the nozzle detached, the pump rotates again.

- 4) Check the operation of functions according to the instruction manual.

<Pressurized type>

Detach the front panel and conduct a trial run in the following procedures.

- 1) Turn the power of dispenser ON, and confirm that the displays on the both sides light up.
- 2) Start the in-oil pump to spill the oil for flushing.

7. Appendix

7-1) Electric power cable

Arrange electrical wires through the underground conduit from office to the island, and connect the wires in "Junction box" of the dispensing pump correctly.

The applicability of the length and area of the electrical wires between distribution board and dispensing pump are next:

Local Voltage	Motor (W)	Cable Diameter in mm ²				Remarks
		2.0 mm ² AWG 14	3.5 mm ² AWG12	5.5 mm ² AWG10	8.0 mm ² AWG8	
1-Phase 220 to 240 V	400 W	65 m	115 m	180 m	250 m	
	750 W	65 m	65 m	100 m	140 m	
3-Phase 380 to 415 V	400 W	100 m	200 m	300 m	400 m	
	750 W	100 m	200 m	300 m	400 m	

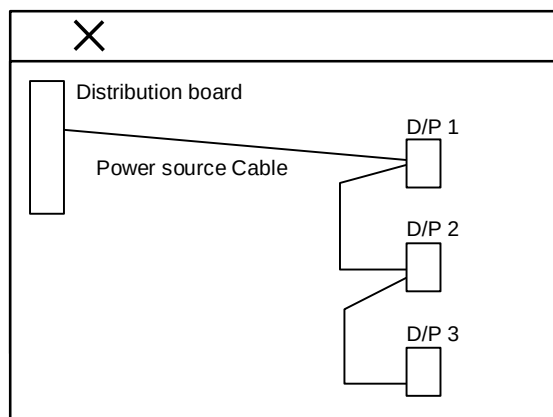
* Each wiring length (m) surrounded by stands for each recommendable diameter of wiring for use.

Even if the value of wiring length is out of , please make use of the wiring applied to each recommendable diameter.

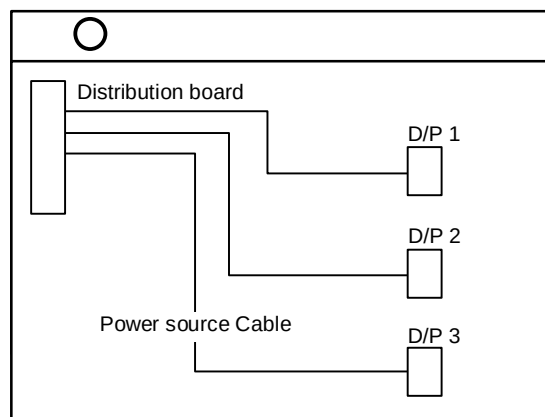
CAUTION

If the wiring is done by such as the sample (1), it occurs to make the voltage down, and may cause troubles . We recommend the wiring work like the sample (2).

Sample (1)



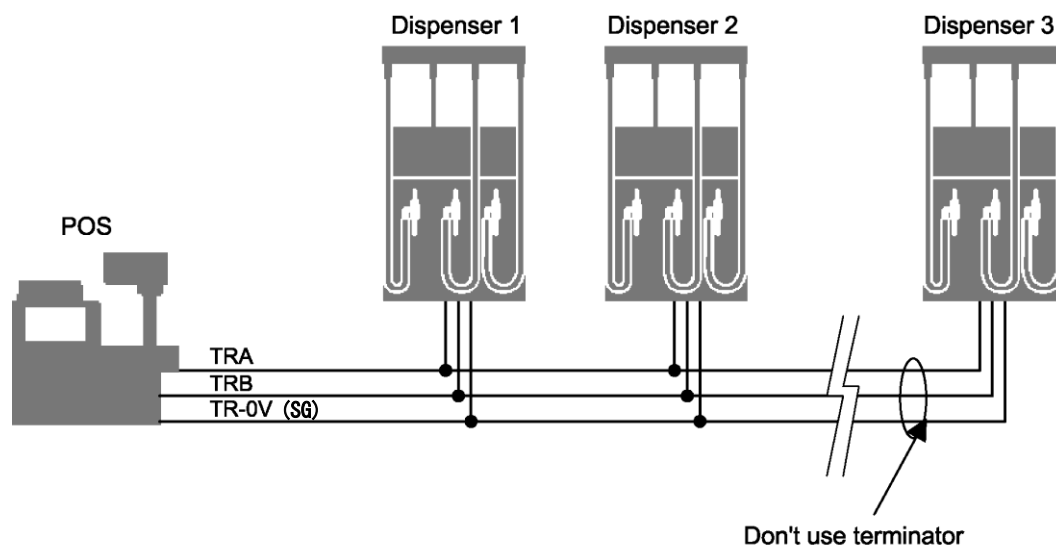
Sample (2)



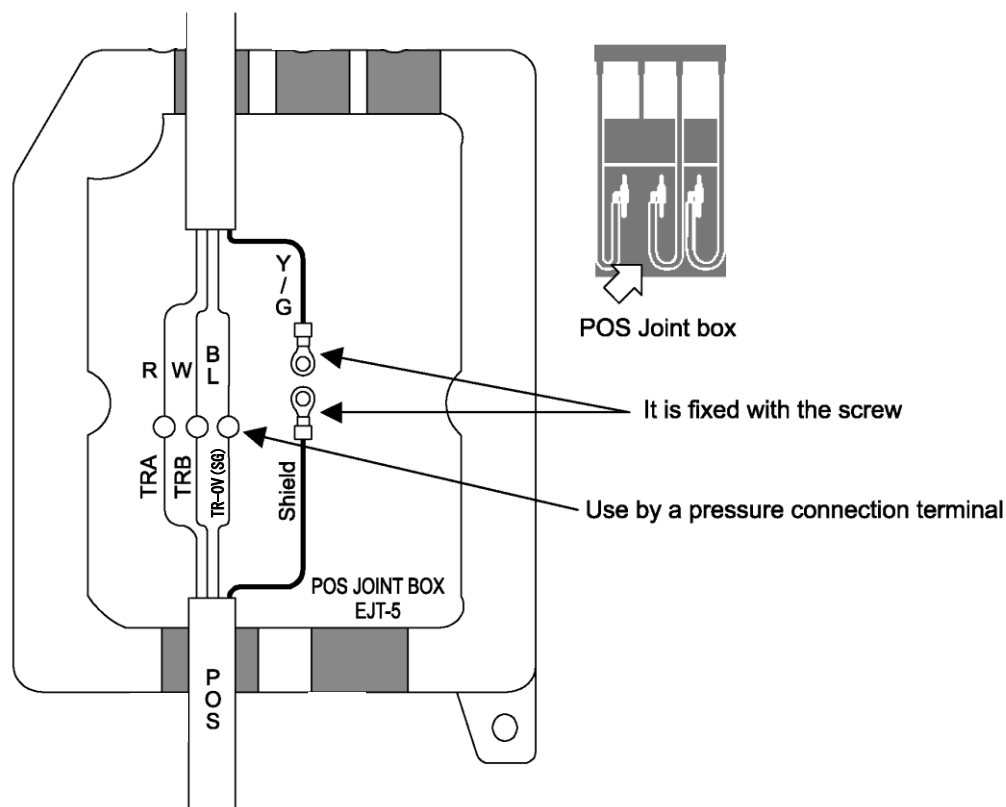
7-2) POS signal cable

Recommendable cable is shielded cable, $0.75\text{mm}^2 \times 4$ core.

■ Connection of POS and dispenser



◆ When a dispenser is connected with POS

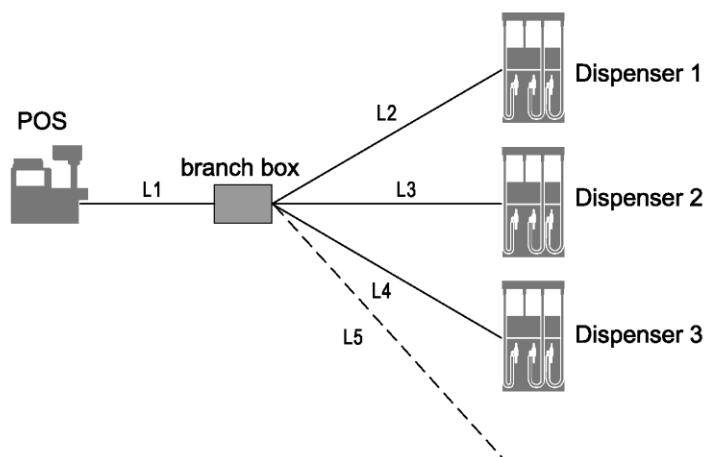


■ Maximum length of RS-485

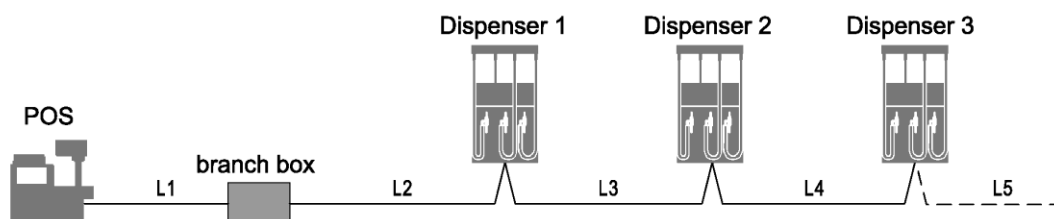
◇ Term: Connecting-cable (L1 ~ L5 ...) specification
 $4 \times 0.75 \text{ mm}^2$ Shielded cable (1 core reserve)

◇ Maximum length of RS-485
 $1200\text{m} > L1 + L2 + L3 + L4 + L5 + \dots$

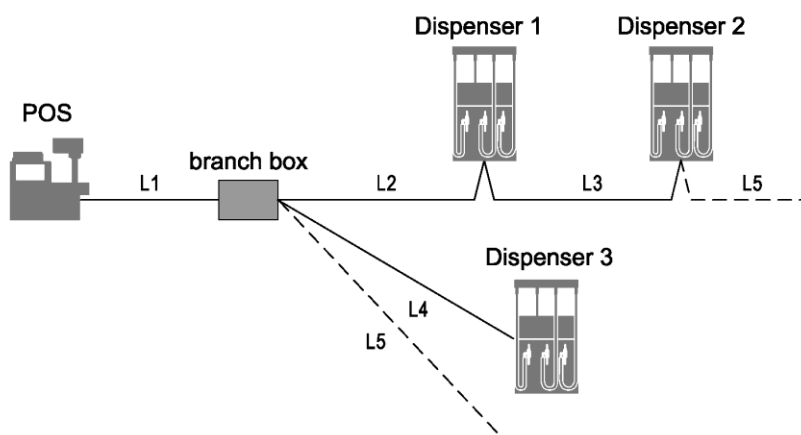
① Star connection method



② Bus connection method

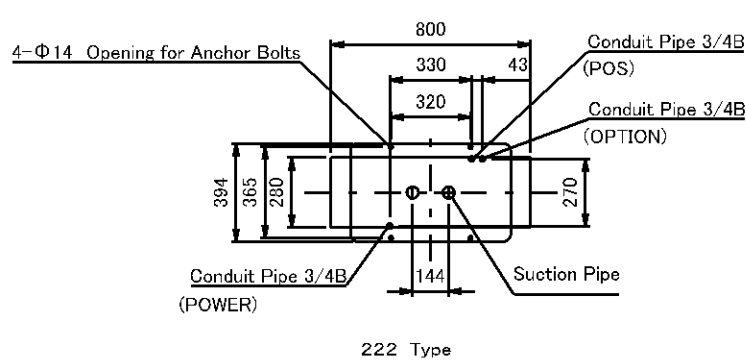
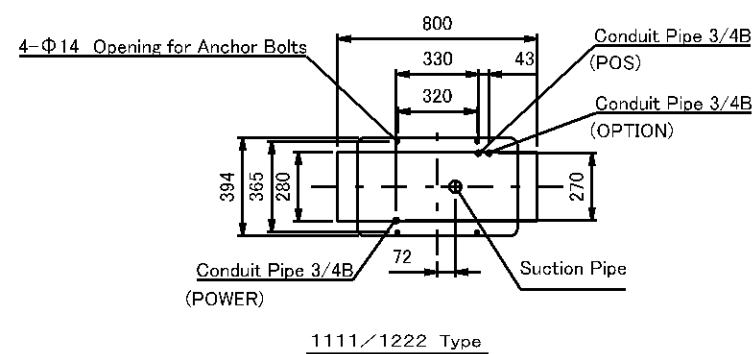
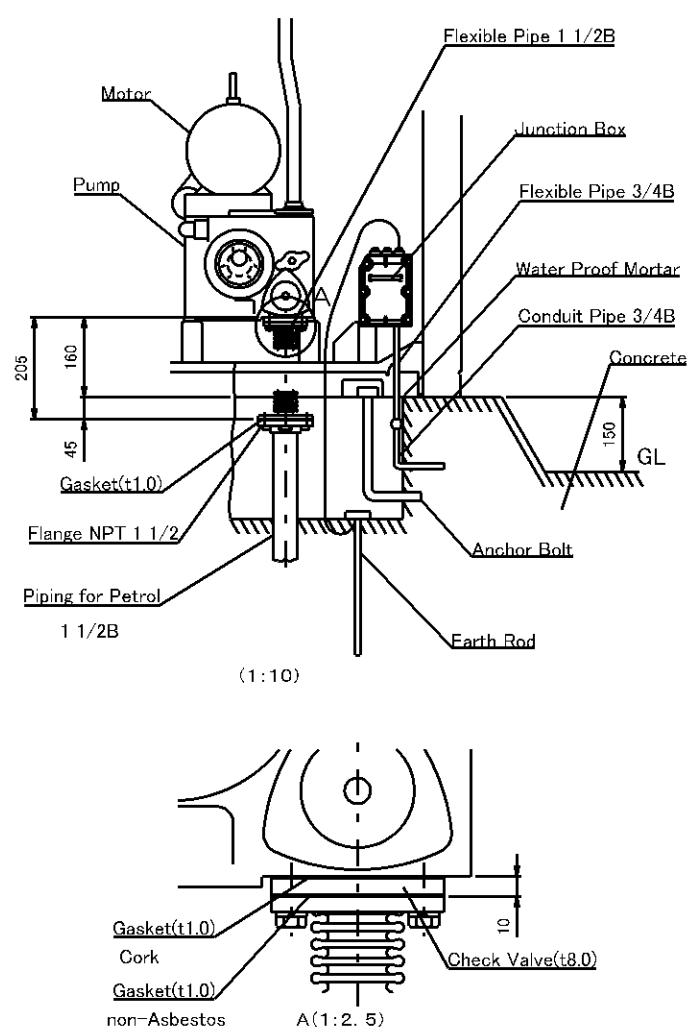


③ Mixture connection method



8. Ground Work

Suction Type



Submersible Type

