Content

Warranty

CENSTAR company limited warrants the original petroleum equipment products supplied by CENSTAR are free from defects in design, material and workmanship under normal use and service for 12 months starting from the date of installation, not to exceed 18 months from the date of bill of lading, whichever occurs earlier. CENSTAR guarantee free service fulfilled by our local distributor or authorized representative for maintenance under normal use and operation. New equipment installation must be registered in CENSTAR within one week upon installation to receive warranty benefits. Otherwise the warranty will not be covered by CENSTAR.

CENSTAR will repair or replace parts or equipment found to be defective in material or workmanship at its own sole judgment during the warranty period by supplying new or rebuilt parts at its option. Parts under the coverage of this policy, if requested by Censtar, shall be returned to CENSTAR with freight prepaid. The replacement parts shall be sent from CENSTAR.

This warranty excludes hose breakaways, hose and fittings, nozzle end swivels, retriever cables, graphic materials specified by customer, fuel filters, belt adjustment, meter calibration, vapor recovery testing, customers specified manufactured by others. Some of these excluded items may be warranted by their manufacturers.

The warranties, as set forth above, are made expressly in lieu of all other warranties, either expressed or implied, including, without limitation, warranties of merchantability and fitness for any particular purpose and of all other obligations or liabilities on our part. Further, we neither assume, nor authorize any other person to assume for us, any other liability in connection with the sale of the all petroleum equipment products which has been subject to accident, negligence, alteration, abuse, or misuse, or which has been subject to any damage from any act of nature or any force majeure.

The sole liabilit[illegible]orth above. We do not warranty against damage caused by accident, abuse, faulty or improper installation or operation. In no event shall CENSTAR be liable for any direct, indirect, incidental or consequential damage or loss of product.

Introduction

Important

Some differences may occur resulting from improving the performance and the reliability and from technique development without prior notice. The documents enclosed in the package are prepared for your reference.

Notes for Metrological Verification

1.Censtar dispensers have undergone strict quality inspections and metrological tests,which meet the requirements of China W&M standards.

2. As required by the relevant stipulations of the Metrological Code, the dispensers can be put into operation only after passing verification by local W&M agency. At the time of dispenser installation, user of Censtar dispensers should apply to local W&M agency for metrological verification, after which the dispensers shall be properly lead-sealed.

3. The dispensers should be tested regularly for accuracy by the customer. If the accuracy is out of tolerance, the customer should apply for verification at once.

4. Censtar is eager to help our customers and local authorities to verify and calibrate the dispensers. However, Censtar will not pay for the following costs:

1) Verification cost

2) Fine by the local metrological agencies

3)Any economic loss due to inaccurate measurement

5.For calibration (accuracy adjustment), see relevant section. Any adjustment relative to accuracy should be done by local metrological control departments, otherwise, the owner should be responsible for any consequences.

Production and Test Standards

Censtar fuel dispensers were designed in accordance with explosion proof requirements, which have passed verificat[illegible]er for Explosion Proof Electrical Products.

Censtar fuel dispensers are manufactured and tested according to the following standards:

1. JJG 443-2015 Verification Regulation for Fuel Dispensers

2. GB/T 9081-2008 National Standard for Motor Vehicle Fuel Dispensers

The state of the art design, perfect manufacture process and strict ISO 9001 quality assurance system make the Censtar dispensers competitive with world top brands.

Package, Storage and Transportation

1.Package are subject to standard transportation packaging as prescribed by GB 191-2008, or customized as per customer's demand.

2.The Conformity Certificate, Warranty Sheet, User's Manual and Parts List will be enclosed in the package.

3.When lifting, the angle of the inclination of the package must not exceed 30 degrees.

4.Care must be taken to avoid severe shake, impact and rain.

5.The dispenser must be stored in a ventilated rain-proof shelter free from metal-corrosive gas.

Main Parameters

Flow rate:	**(5～50)L/min**
Maximum Permissible Error:	**± 0.25%**
Minimum Measured Quantity:	**5L**
Noise Level:	**⩽ 72dB(A)**
Applications:	**Gasoline, diesel oil and kerosene**
Price per Liter:	**1～9999 /L(GAL)**
Single Sale:	**Volume: 0～99999.99 L(GAL)**
	Money: 0～9999999
Cumulative Total:	**Volume: 0～42949672.95 L(GAL)**
	Money: 0～42949672.95
Power Supply:	**DC10V~DC30V**
Work pressure(Oil inlet):	**(0.18~0.20)MPa**
Flow rate(Oil inlet):	**50~70L/min**
Filtering Precision:	**50μm**
Ambient Temperature:	**-25℃～+55℃**
Relative Humidity:	**30%～95%**
Explosion-proof Mark:	**Ex d ib mb Ⅱ A T3 Gb**
Explosion-proof Certificate No. :	**CNEx13.1101**
Measurement Apparatus Manufacture Licence:	**YUZHI00000198**

Working Principle

The pressurized fuel goes through the filter into the flow meter and drives its pistons to move in turn. The meter revolves the slotted plate of the pulser to produce pulses, which will be registered on the computer for measurement. One cycle of the pistons' movement indicates that certain quantity of fuel has been delivered. After the fuel has been measured and registered on the computer, the gasoline goes through the discharge tube and the solenoid valve into the hose and the nozzle to the customer container.

Additionally, an internal backup battery will power the displays in the case of a power failure. The main parameters, such as the last sale, the totalizing volume and totalizing money, price per liter will be saved and the last displays will last for 15 minute.

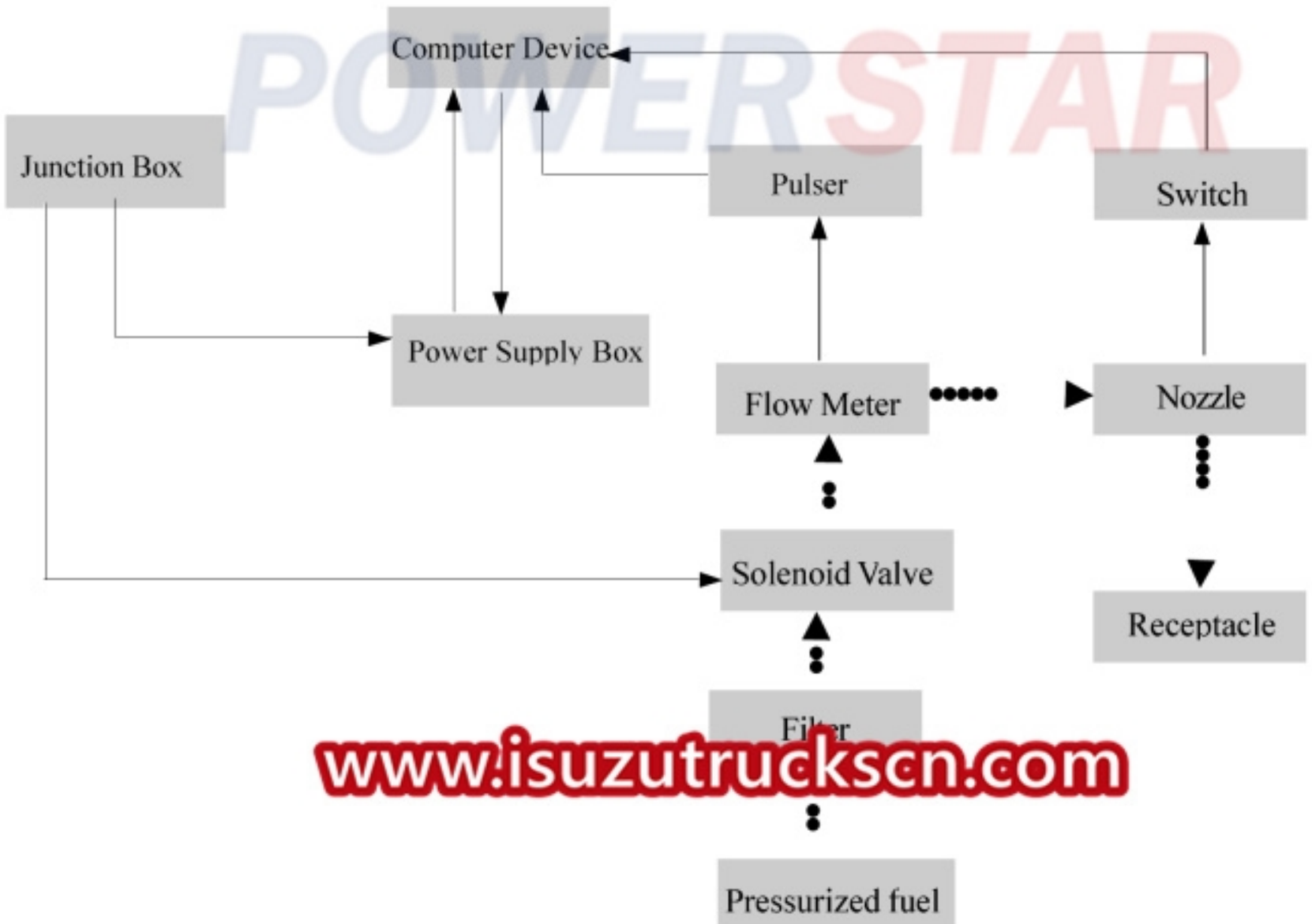


Fig.1 Flow chart of Censtar Fuel Dispenser

Delivery direction of current, signal, and mechanical movement:——►

Flow direction of gasoline: •••• ►

Installation

Important

1. When installed in the oil truck, the dispenser must be protected under a canopy from weathering action.The installation of the dispensers should comply with relevant local regulations concerning service station construction and fire prevention.

2.The newly installed pipes must be cleaned to remove sand, iron debris and foreign materials before equipment installation.

3.Oil resistant gasket must be installed on the inlet flange.

4. After delivering fuel for the first time, the filter must be inspected and purged to avoid reducing the flow rate and damaging the hydraulic components.

5.Power supply to the dispenser must be cut off prior to servicing. Be careful not to damage the flame-proof joint when opening the electric box. Clean the inside chamber and the flame-proof joint before reassembly. To ensure the explosion-proof feature, the cable should be tightly sealed, none of the gasket, metal washer and screws can be omitted.

6. The dispenser can only be powered when the generator is running smoothly, with the output voltage ranging from DC10V to DC30V , to prevent computer parts from burning out because of surge voltage at generator starting.

7.The pipeline should be equipped with bypass valve, if not, please indicate it in purchase order and require that the dispenser must be fitted with bypass valve to avoid damaging the dispenser.

8.The newly installed pipes must be cleaned to remove sand, iron debris and foreign materials before equipment installation.

9. Before servicing or electric wiring, always turn off all power to the dispenser.

10. The dispenser must be installed and used by authorized or trained service represintative.

Dispenser installation

1. All cables connecting the dispenser should go through conduits. The installation of the dispensers should comply with relevant local regulations concerning service station construction and fire prevention.
2. The dispenser base should be mounted on the truck with anchor bolts, whose installation dimensions are shown in the relevant installation diagram.
3. The flexible metallic pipe should be flanged with the oil pipe. Install a gasket between the two flanges and tighten them with bolts.

Power lines installation

1. The main power switch should be installed in safe place. The capacity of the switch's fuses should be in compliance with the dispenser's rated amperage.
2. Connect the power lines to the connection box. Make sure that the outside diameter of the power cables suit to the inside diameter of the seal at the cable entry port . When the lines are connected, tighten the nut to hold the cable firmly in place in order to ensure the explosion-proof feature.The metal washer is used to protect and press the seal firmly, which shouldn't be removed.
3.RVV2x0.75 power cable (10m long) should be used, red-core should be connected to positive pole(DC12V orDC24V), black-core to negative pole(DC12V orDC24V).

Structure

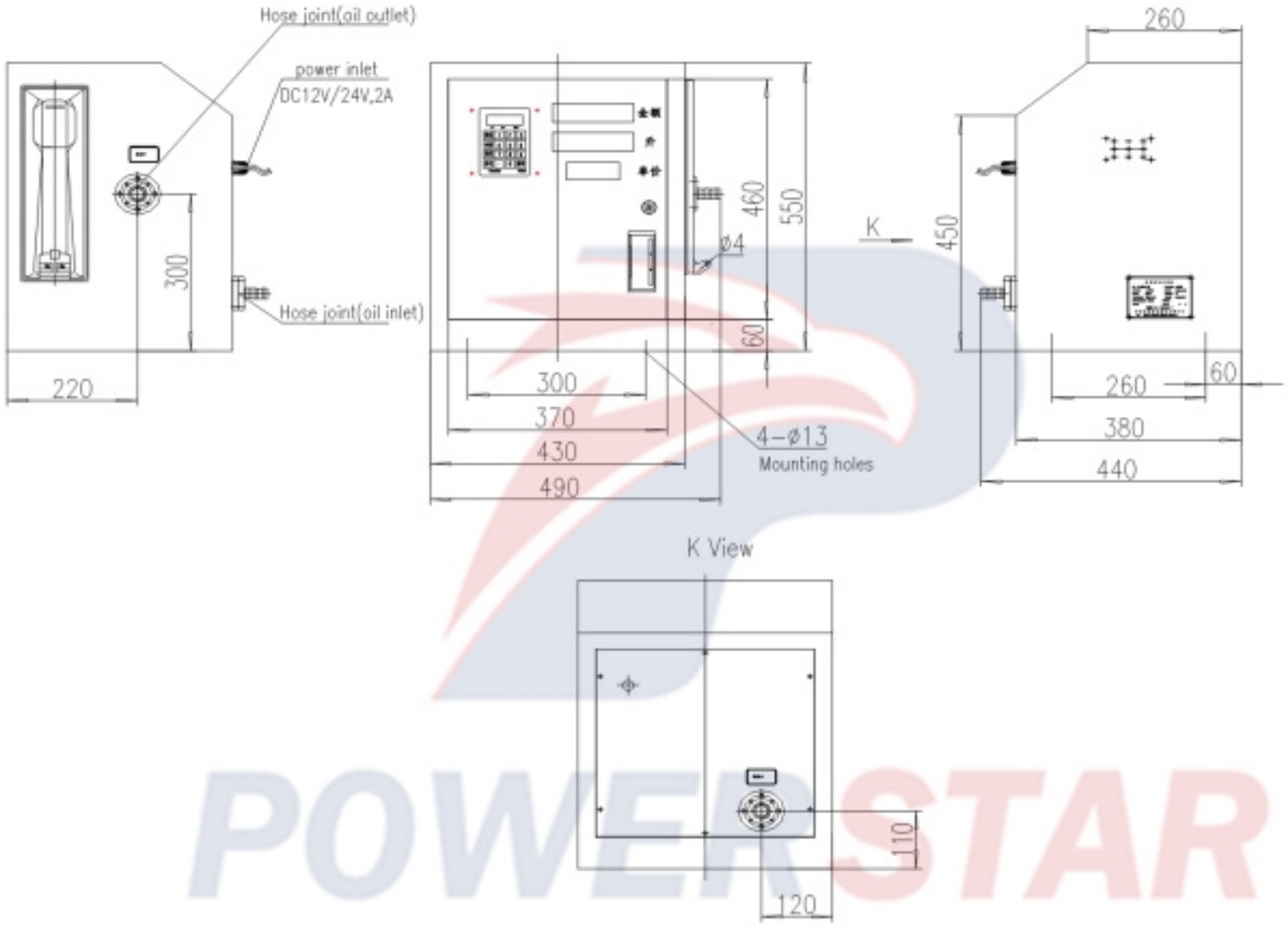
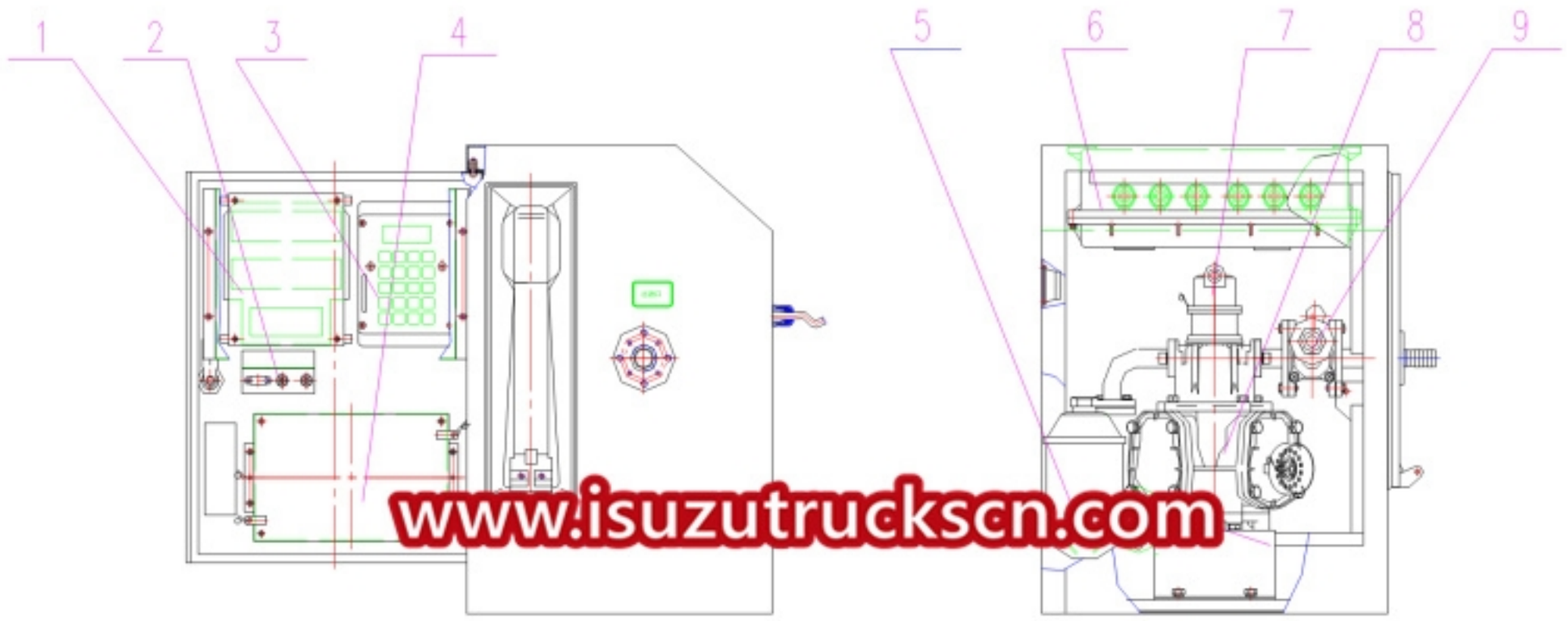


Fig.2(a) CS20D1110F-A Installation Diagram



door open

1 Display
2 Keyswitches
3 Keypad
4 Computer device
5 Filter
6 Explosion-proof Power Supply Box

door removed

7 Explosion-proof Pulser
8 Censer Flow Meter
9 Explosion-proof Solenoid valve

Fig.2(b) Internal structure for CS20D1110F-A

Structure continued

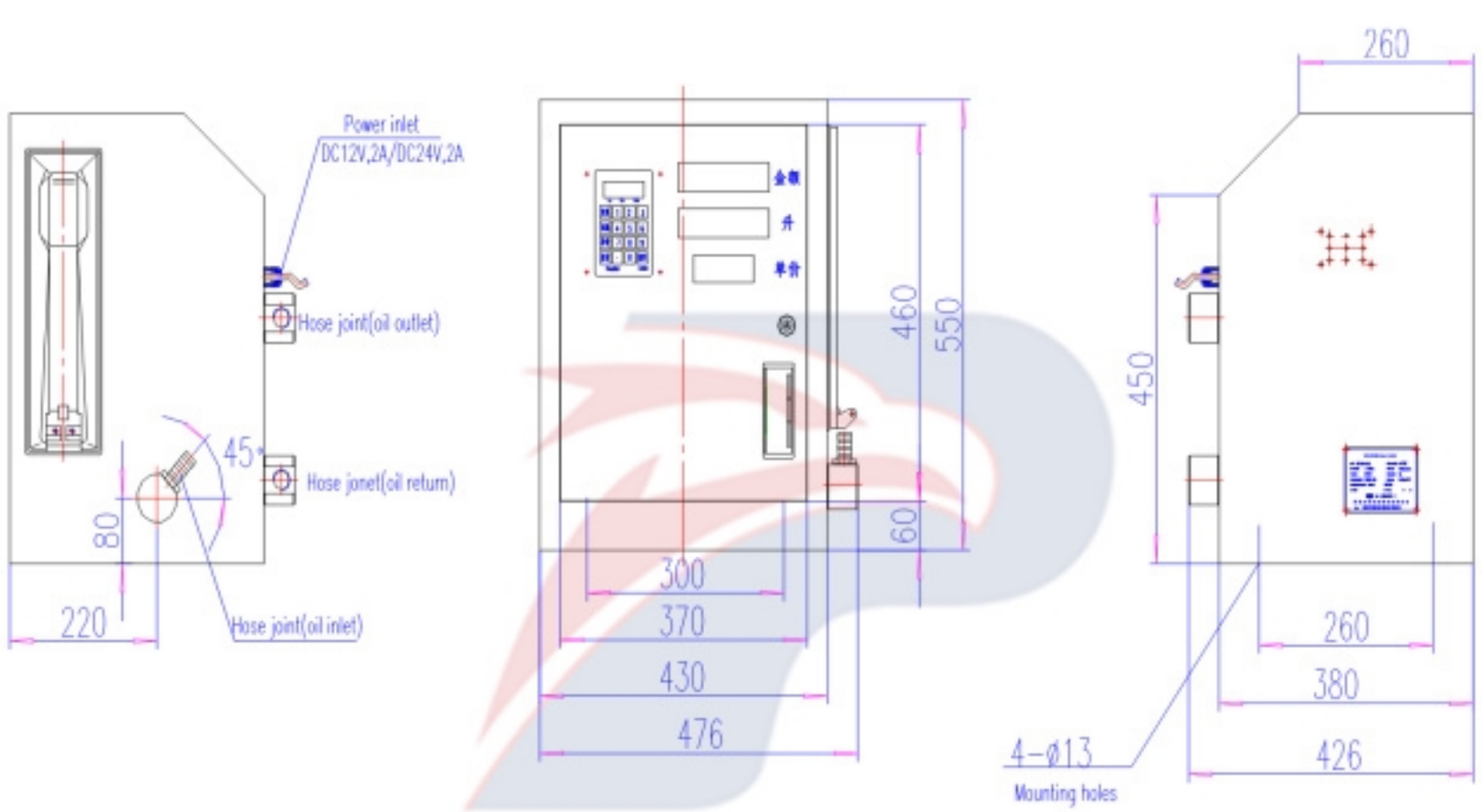
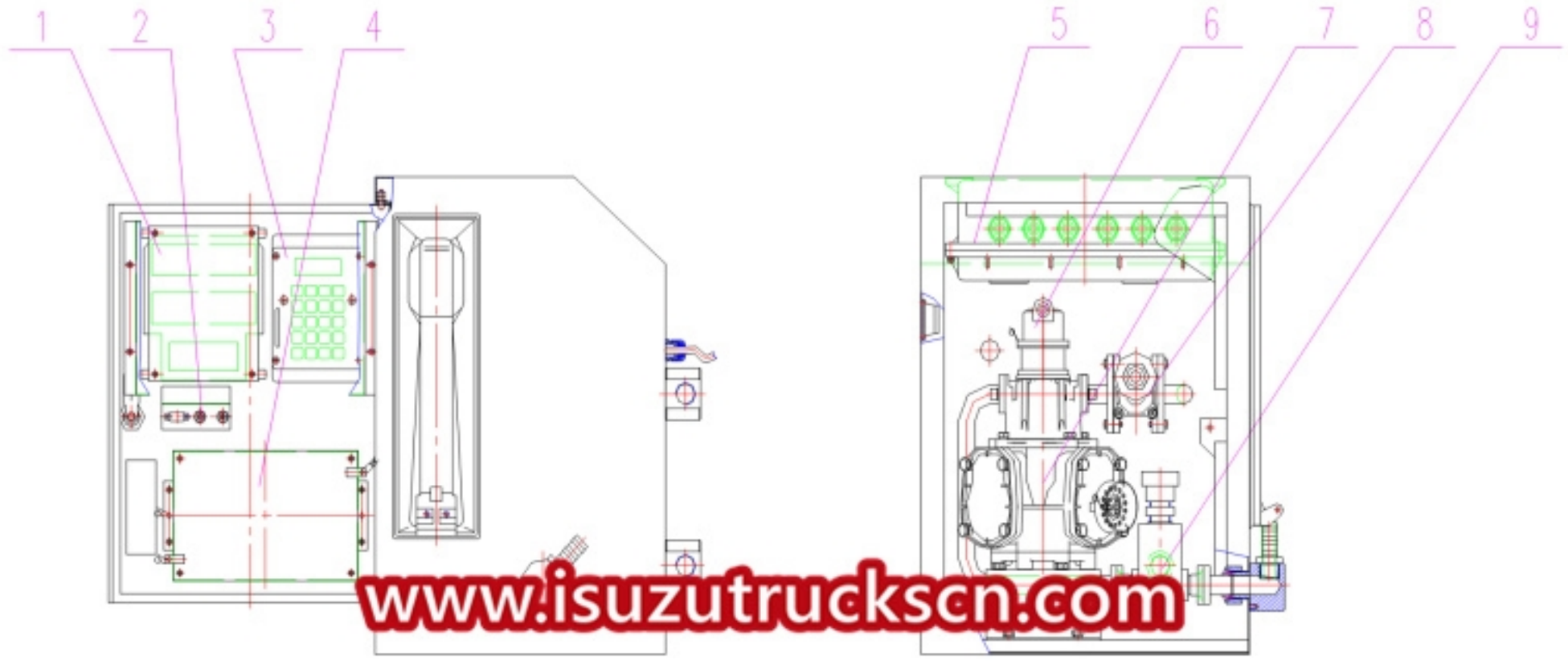


Fig.3(a) CS20D1110F-B Installation Diagram



door open

1.Display
2 Keyswitches
3 Keypad
4 Computer device
5 Explosion-proof Power Supply Box
6 Explosion-proof Pulser

door removed

7 Censer Flow Meter
8 Explosion-proof Solenoid valve
9 Bypass valve

Fig.3(b)Internal structure for CS20D1110F-B

Structure continued

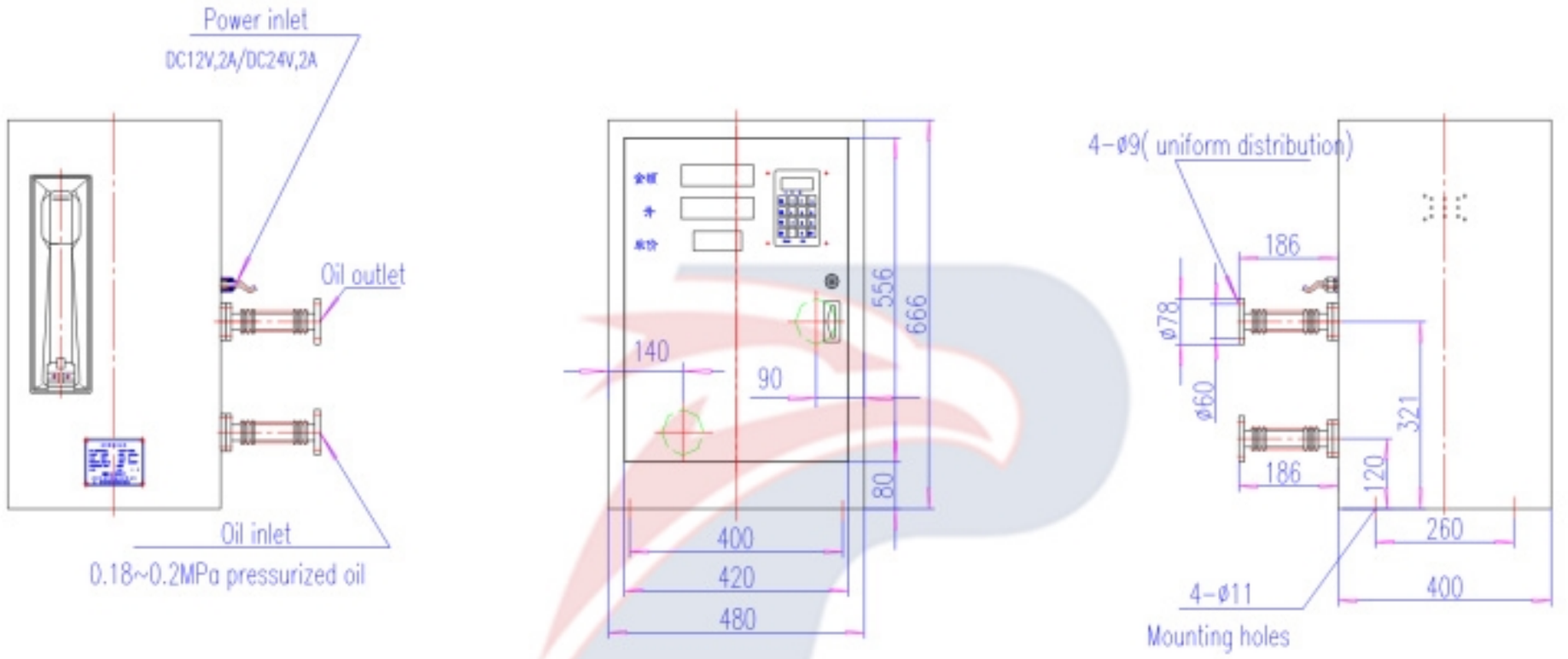
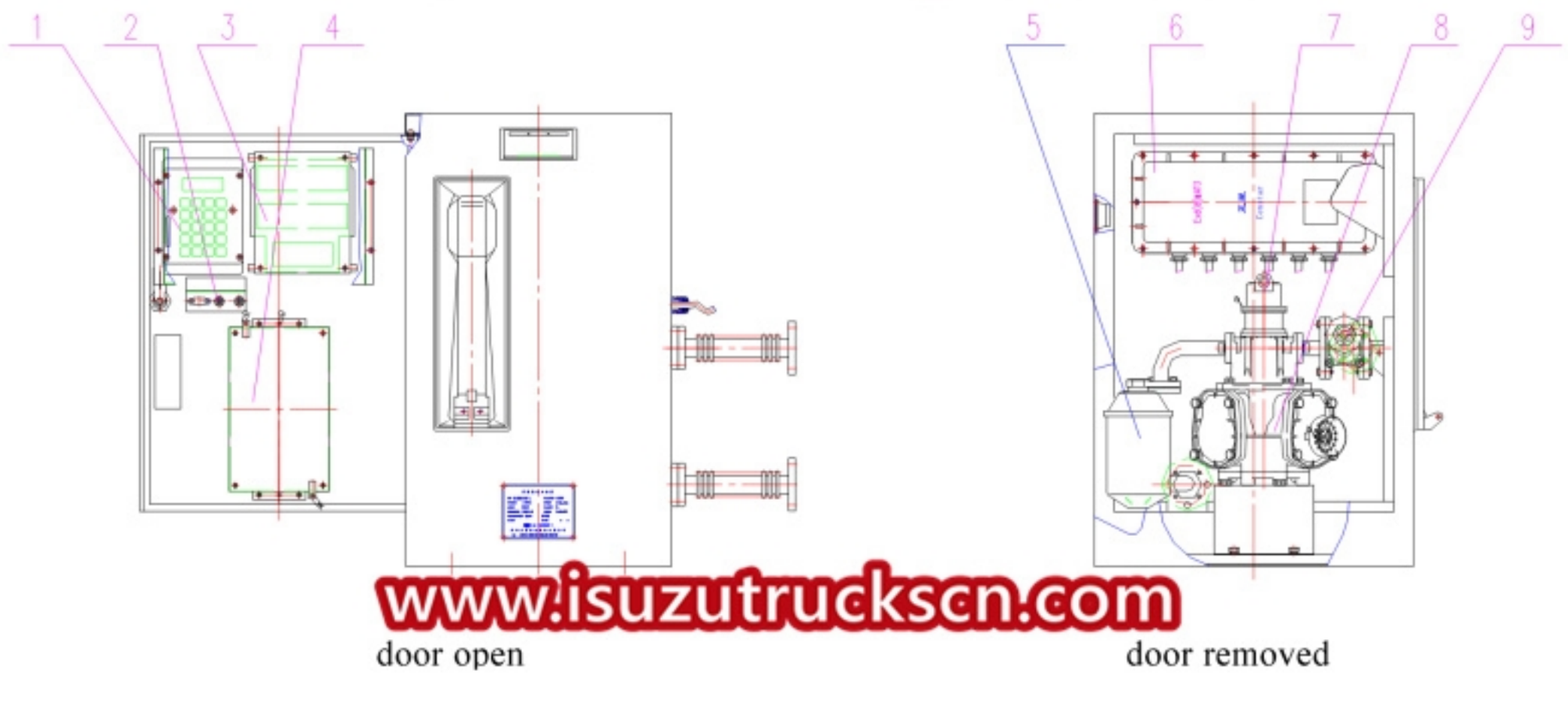


Fig4(a) CS20D1110F-C Installation Diagram



door open door removed

1.Keypad	4 Computer device	7 Explosion-proof Pulser
2 Keyswitches	5 Filter	8 Censer Flow Meter
3 Display	6 Explosion-proof Power Supply Box	9 Explosion-proof Solenoid valve

Fig.4(b) Internal structure for CS20D1110F-C

Structure continued

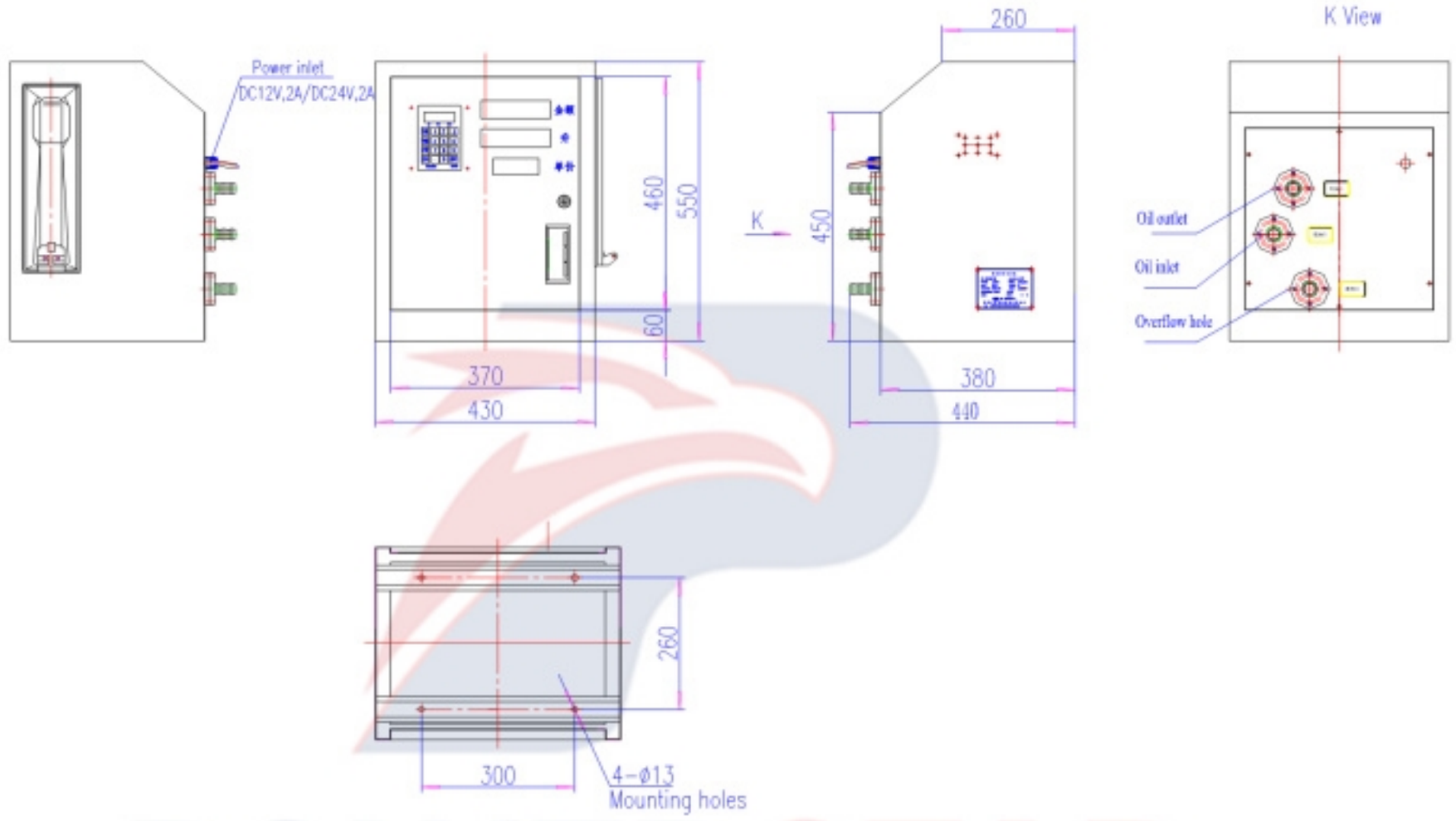
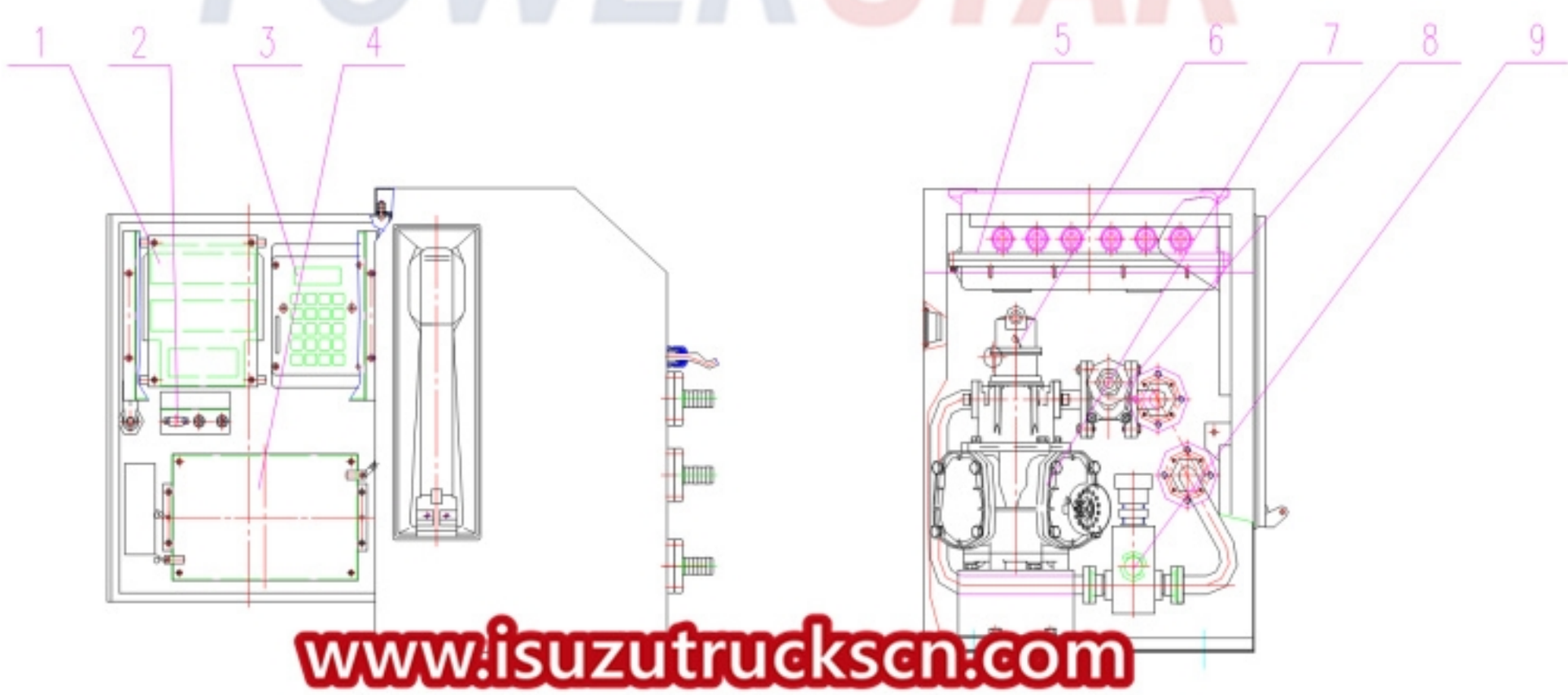


Fig.5(a) CS20D1110F-D Installation Diagram



door open door removed

1.Display
2 Keyswitches
3 Keypad
4Computer device
5 Explosion-proof Power Supply Box
6 Explosion-proof Pulser
7 Censer Flow Meter
8 Explosion-proof Solenoid valve
9 Bypass valve

Fig.5(b)Internal structure for CS20D1110F-D

Structure continued

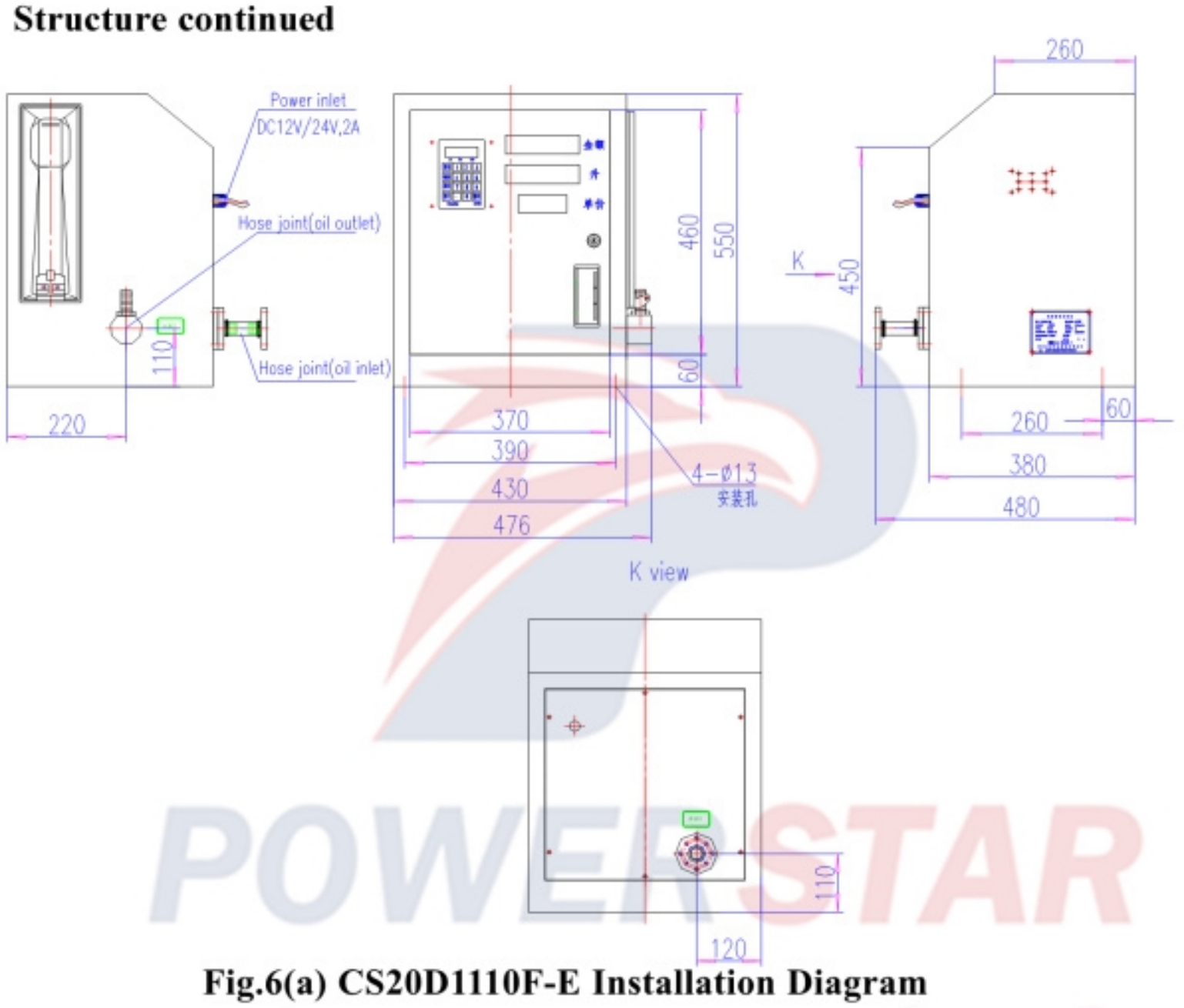
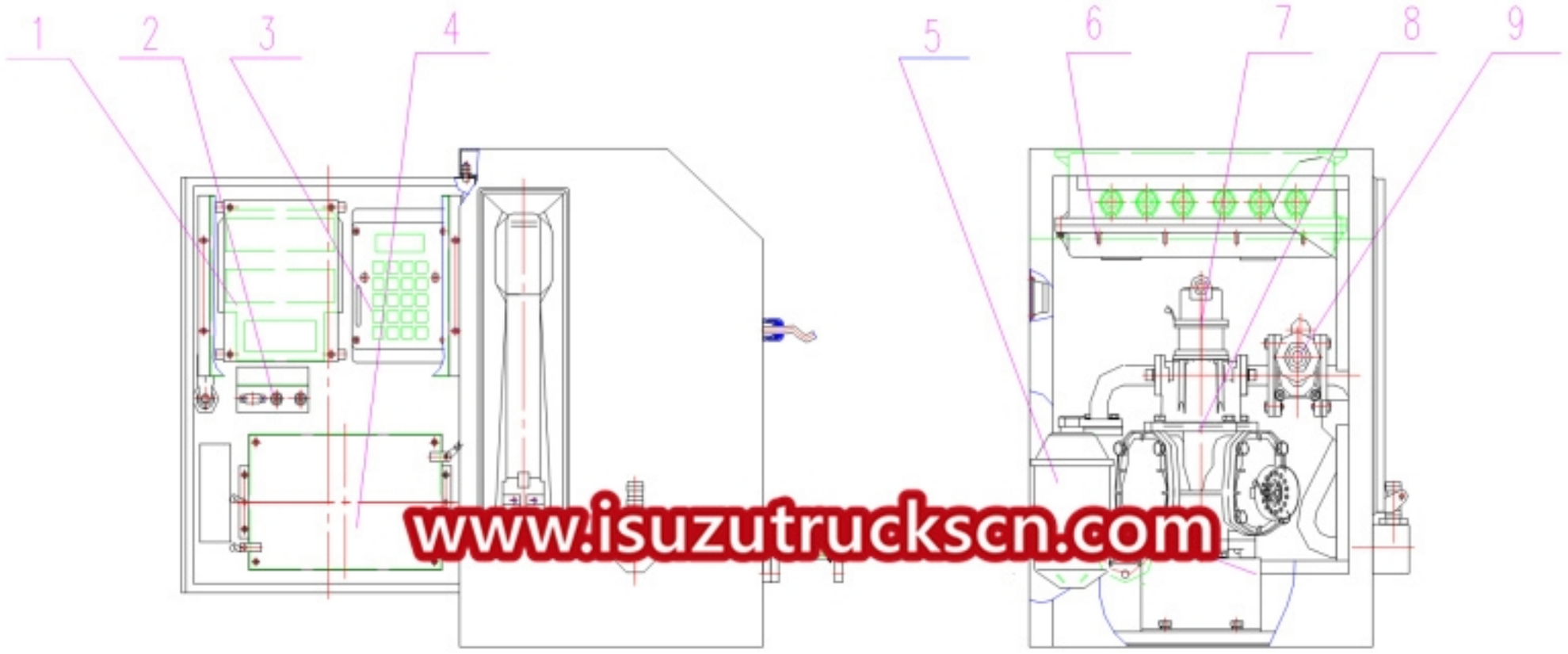


Fig.6(a) CS20D1110F-E Installation Diagram



door open

1.Display
2 Keyswitches
3 Keypad
4 Computer device
5 Filter
6 Explosion-proof Power Supply Box

door removed

7 Explosion-proof Pulser
8 Censer Flow Meter
9 Explosion-proof Solenoid valve

Fig.6(b) Internal structure for CS20D1110F-E

Operation

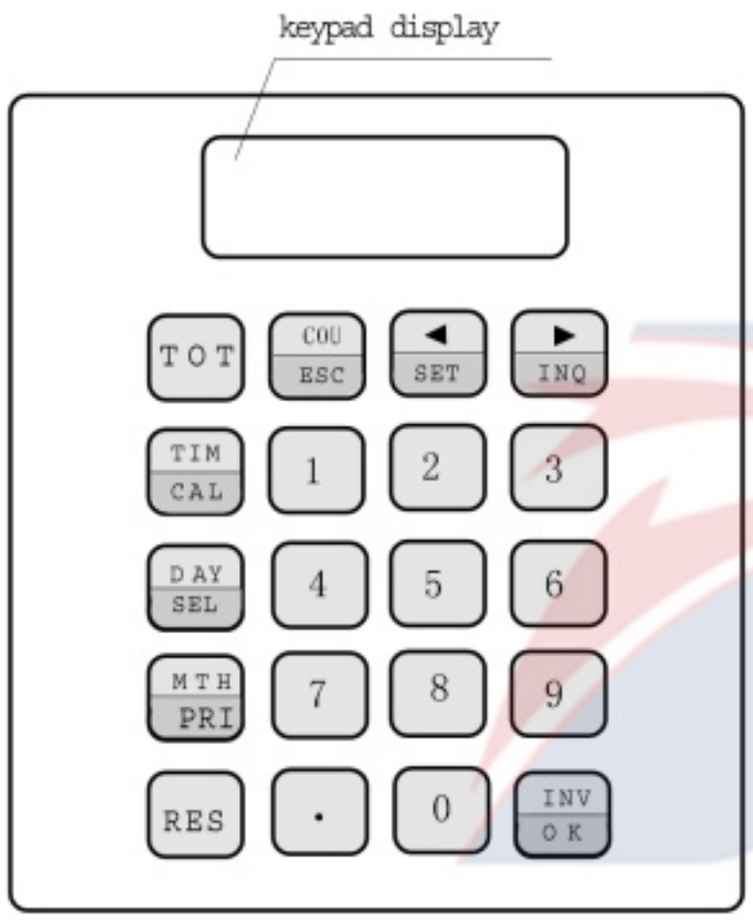


Fig. 7 Keypad Layout

Make sure wiring correctly before initial operation.

1.Power on

2.Parameters setting and reading

Parameter setting and reading is done on the keypad. See Fig.7, the keypad layout.

Each of the operating systems is equipped with two keyswitches : No.1 (the parameter key, left)and No. 2(the arming key, right).See Fig.8.

No.1 keyswitch is used for setting the parameters such as price per liter, etc.

No.2 keyswitch is used to lock the dispenser.

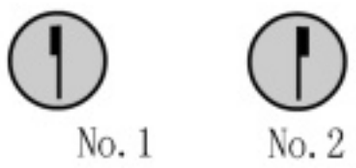


Fig.8 Keys Diagram

MTH: Month

ESC: Escape

CAL: C
before last sale

COU: Coupon

SEL: Select or shift

PRI: Price per litre

RES: Reset

INQ: Inquire the needed information

Operation continued

Refueling Operation

There are two modes for refueling as presetting and non-presetting operation.

Non-presetting Operation

Lift the corresponding nozzle, zeros will be shown on volume and money displays and the price of the fuel will be displayed on the Price display. Open the nozzle to dispense the fuel to the customer's container. Close the nozzle to stop dispensing, and replace the nozzle to finish refueling. During this process, the volume and money of the fuel dispensed will be displayed on the main displays.

Preset Operation in litre

Preset Operation in Money

A. Make sure "L"(litre) will be shown on the main display. If not, press "SEL" key to shift to "L".

B. Input the desired volume.

C. Lift the corresponding nozzle, zeros will be displayed on the money and volume displays and the price of the product dispensed will be shown on the price display.

D. Open the nozzle to dispense the fuel. The refueling will stop and the motor will be closed automatically immediate after the desired volume is reached.

E. Replace the nozzle to finish dispensing. Main displays will show volume and money.

Press "SEL" to shift to "P"(Money). Follow the steps shown above.

Operation continued

Note

1.Push RES key to cancel current operation. After resetting, the data on the main displays are the last sale.

2. If the nozzle is shutted off before reaching the preset value, main displays will show the actual amounts.

3. For the next refueling, the desired amount must be input even if it is the same as the last one.

4.If the pump has been powered for 3 minutes without delivery, the dispenser will shut off automatically.

Setting the price per litre(Modification)

Note

1. No. 1 key must be turn clockwise 90 degree, then return it.

2.Push RES key to cancel last operation before setting the price per litre.

Total Display

Note

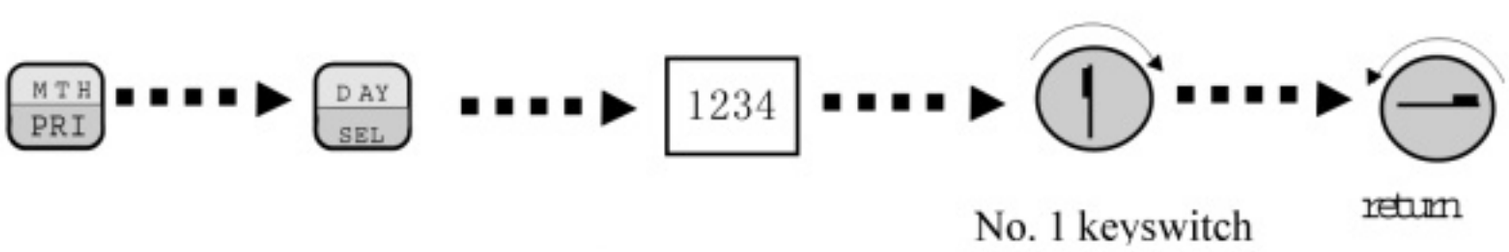
The total consists of two parts. One Part is the first several digits in “sale” display,the other part is the le

“LL” for volume total, “PP”for money total and “- -” for shift total.

The shift total indicates the volume delivered since last shift total resetting.

Operation continued

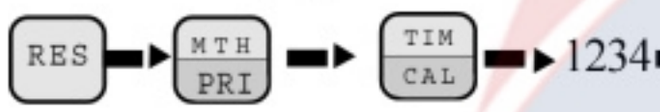
Reset shift total



Call the last sale

Note

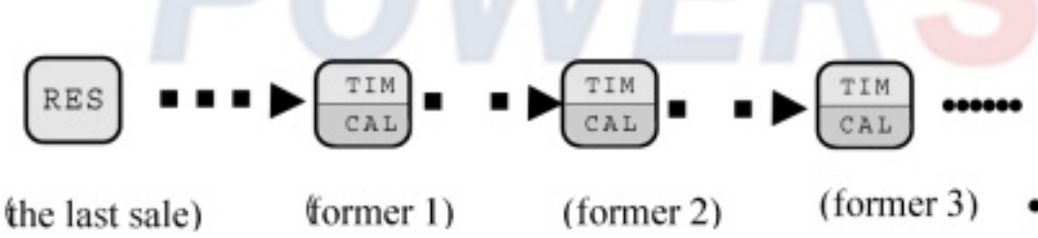
To avoid misunderstanding when settling accounts, the dispenser has data recall function, which can display the last 5 or 255 sales in turn for every nozzle. You can press



to cancel the recall funcftion,

and press the keys above again to resume the function.

If the sale is more than 6 digits, the seven-or-more-order significant digits are show on sale display for 2 seconds, and then the rest digits on the same display.

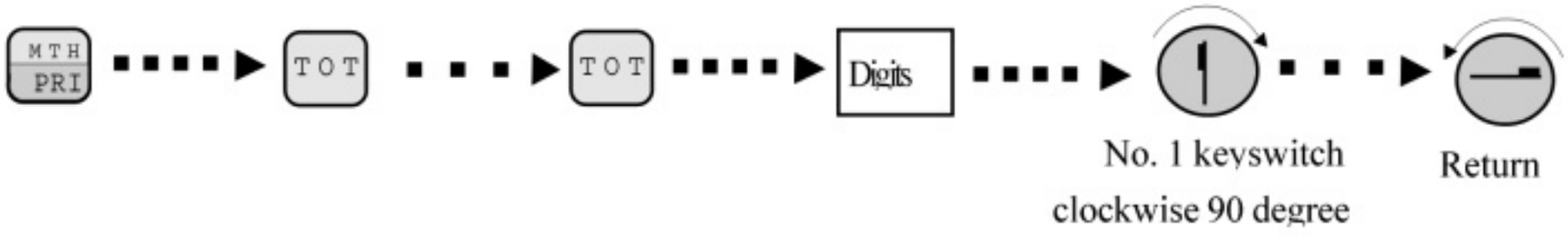


Display the Slow Flow Offset Value

Note:

In preset operation, if the dispenser deliveries fuel at slow flow rate for a long time , please reduce the offset value; if no slow flow rate appears, please increase the offset value.

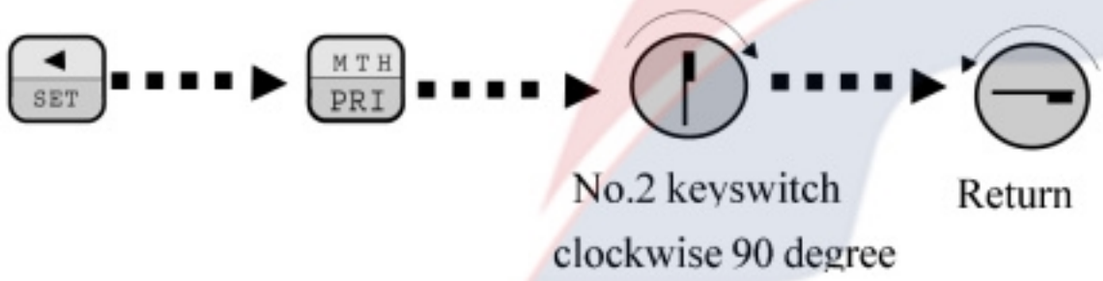
The adjusting



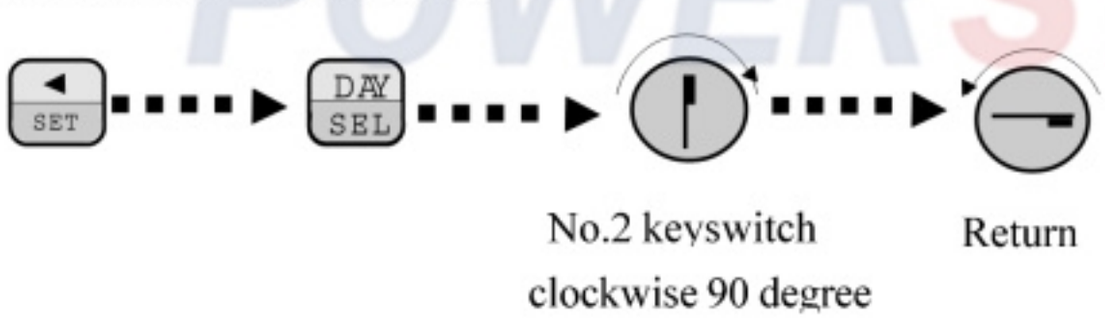
Operation continued

Display Version No.

Lock the dispenser



Unlock the dispenser



Maintenance

1. The tank should be cleaned regularly to keep the oil clean.
2. The dispensers should be verified in accordance with relevant national standards.
3.The filter should be installed to the inlet of the flow meter and it should be replaced regularly according to the product quality. When the flow rate slows down, please replace the filter; if the flow rate is abnormal as before, please check the other parts.
4.Accuracy Adjustment

The adjustment can be accomplished by turning the calibration Disc. See figure 9 below. Break the seal wire and remove the seal pin. To increase the measurement, turn the disc counterclockwise; to decrease the measurement, turn the disc clockwise.

The accuracy adjustment range is ±1%. The disc was set near middle position when leaving the factory. After a long time service, the accuracy may be out of tolerance and the meter need calibration. If accuracy can not be restored by adjustment, change the meter. A variation of 0.05% can be made by turning the disc half a hole.After calibration, properly seal it (this can only be performed by W&M agencies).

Notice

Before delivery, the dispenser has been calibrated, the meter adjustment disc and pulser casing have been lead sealed. The after-sale adjustment should be done by the metrological control agencies, after which, the dispenser should be verified according to applicable stipulations. If positive result comes out, the dispenser should be re-sealed.

As required by national standards regarding fuel dispensers, the pulse rate of Censtar fuel dispensers can't be adjusted. The only way to calibrate the dispenser is to adjust the index disc of the flow meter.

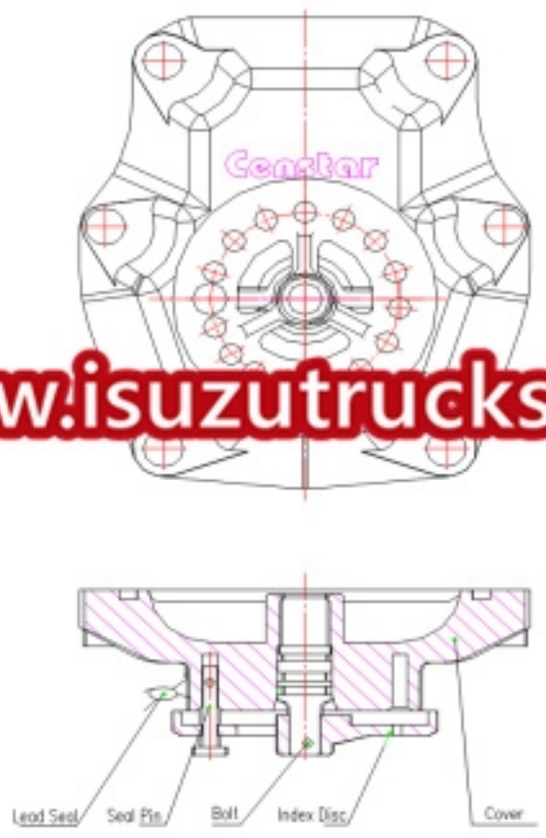


Fig. 10

Maintenancecontinued

5. Never knock at the container with the nozzle spout or press the nozzle too hard, this abuse may damage the spout root and result in leakage. Refer to Fig. 10.

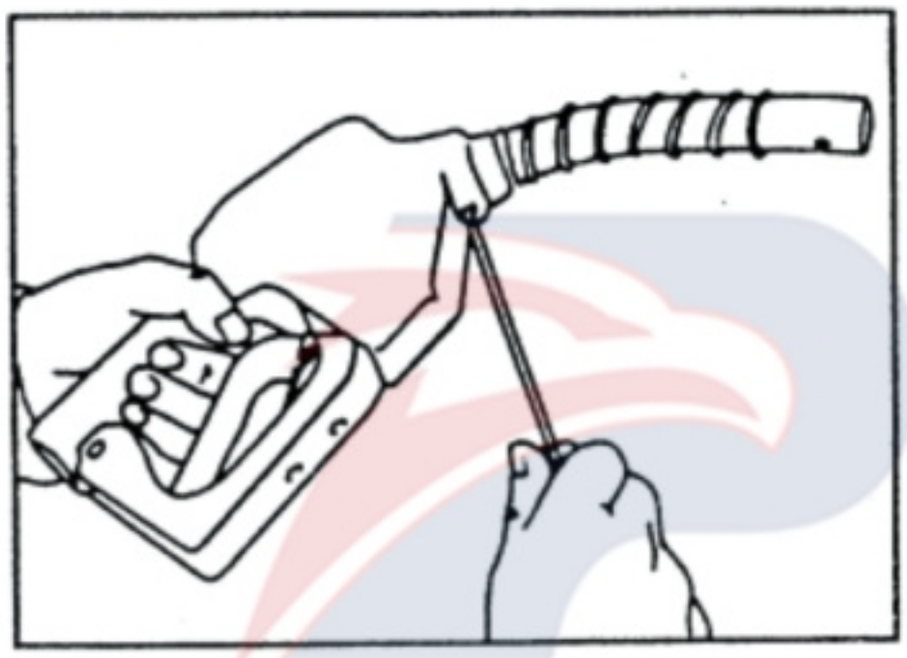


Fig. 10

Regular Preventive Inspection and Maintenance required by Censtar Dispensers

Intervals	Items	Requirements
One week	Leakage	Check hose, hose adaptor, flange of the flexible metallic pipe and meter inlet for leakage and fix it at once.
	Lead seal	Check for integrity
	Strainer screen	Clean or replace the screen of suction pump
As required	Cleaning the dispenser	Shut off the power, open the doors to eliminate dirt in the cabinet. To clean the outside surface, no flammable liquid is permitted, such as gasoline or kerosene.
	Flow meter	Check for accuracy
	Filter	Clean the screen
Half a year	Nozzle	Check for operating sensitivity. If not, lubricate it with silicon based grease.
	Pump	Check for flow rate. If too slow, repair it.
	Door lock	Check for agility

Possible Troubles & Remedies

You may encounter some problems with the dispensers, if the following phenomena appear, please check according to recommended methods, which may imporve your efficiency and reduce your loss. Please Refer to the exploded views when maintaining or overhauling the meter or the pump.

Pump doesn't work occasionally

1.There a delay function, the interval between two consecutive starts should be longer than 3s.

2.Check the power supply.

Leakage from O ring or gasket

(1) The O ring or gasket is inflated or damaged. Replace them and apply grease to them.

(2) Tighten the loose bolts.

Can not fuel when preset fixed volume

The preset volume can not be less than 0.6L. If you program unit price or coefficient etc. prior to presetting volume, then your operation of preseting volume is invalid.

The parameter lock 1 does not work

For parameter programming, enter the parameters and direct the lock to green mark and then relocate it back. If do not follow the procedure above, the lock does not work.

Slow delivery or flow rate fluctuates

(1)The bottom valve or pump filter is blocked. Clean them.

(2)There is dirt in the fuel. Check every moving part in the meter, if worn, replace or lap it.

(3)The O ring on the seal ring is damaged. Replace it.

(4) There is dirt on sliding surfaces of the distributing valve and valve seat. Clean them.

Inaccurate measurement

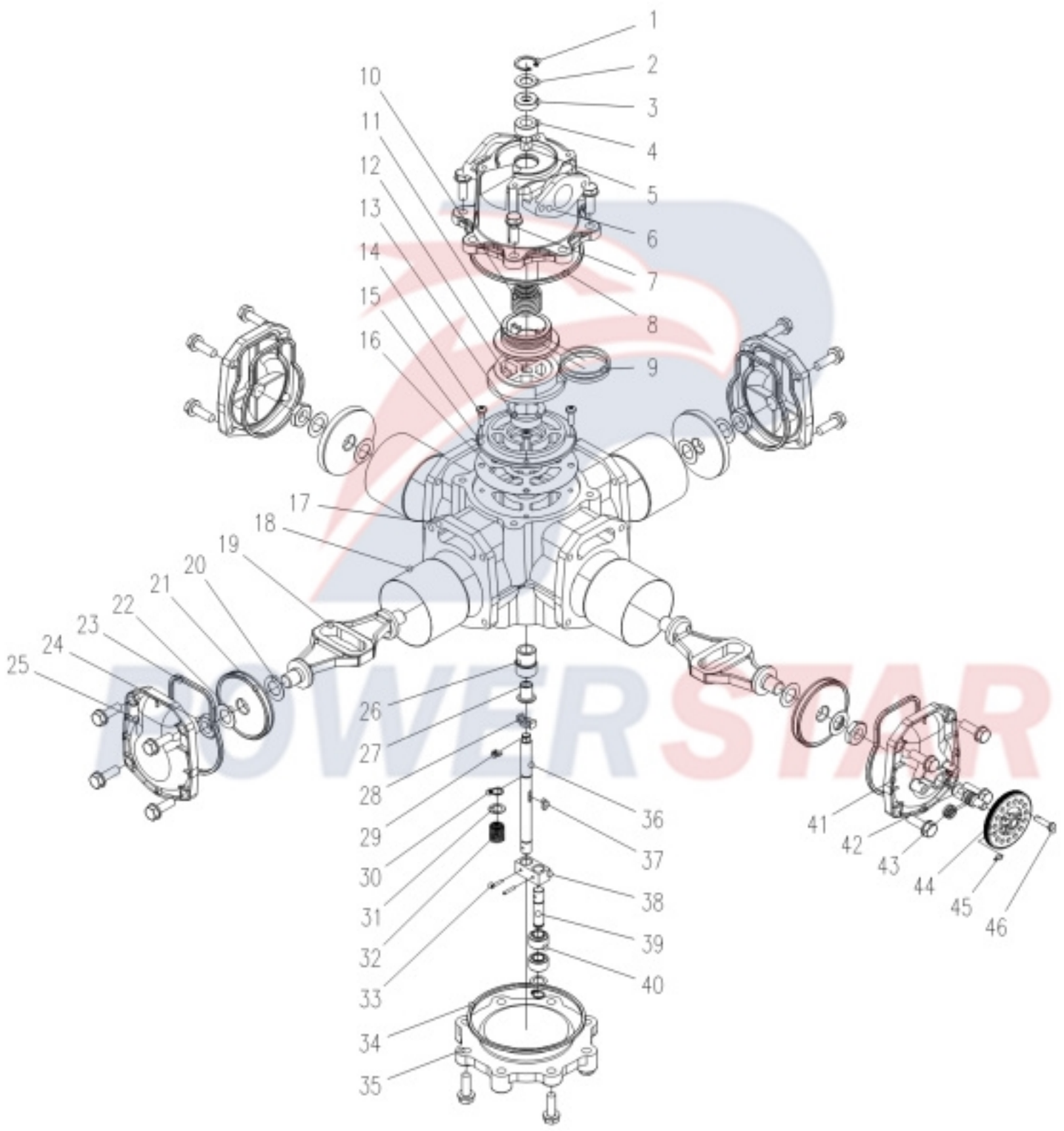
(1) Air is in the system. Check the pump, pipe and connections for leakage.

(2) There is dirt in the fuel. Check every moving part in the meter, if worn, replace or lap it.

(3) The O ring on the seal ring is damaged. Replace it.

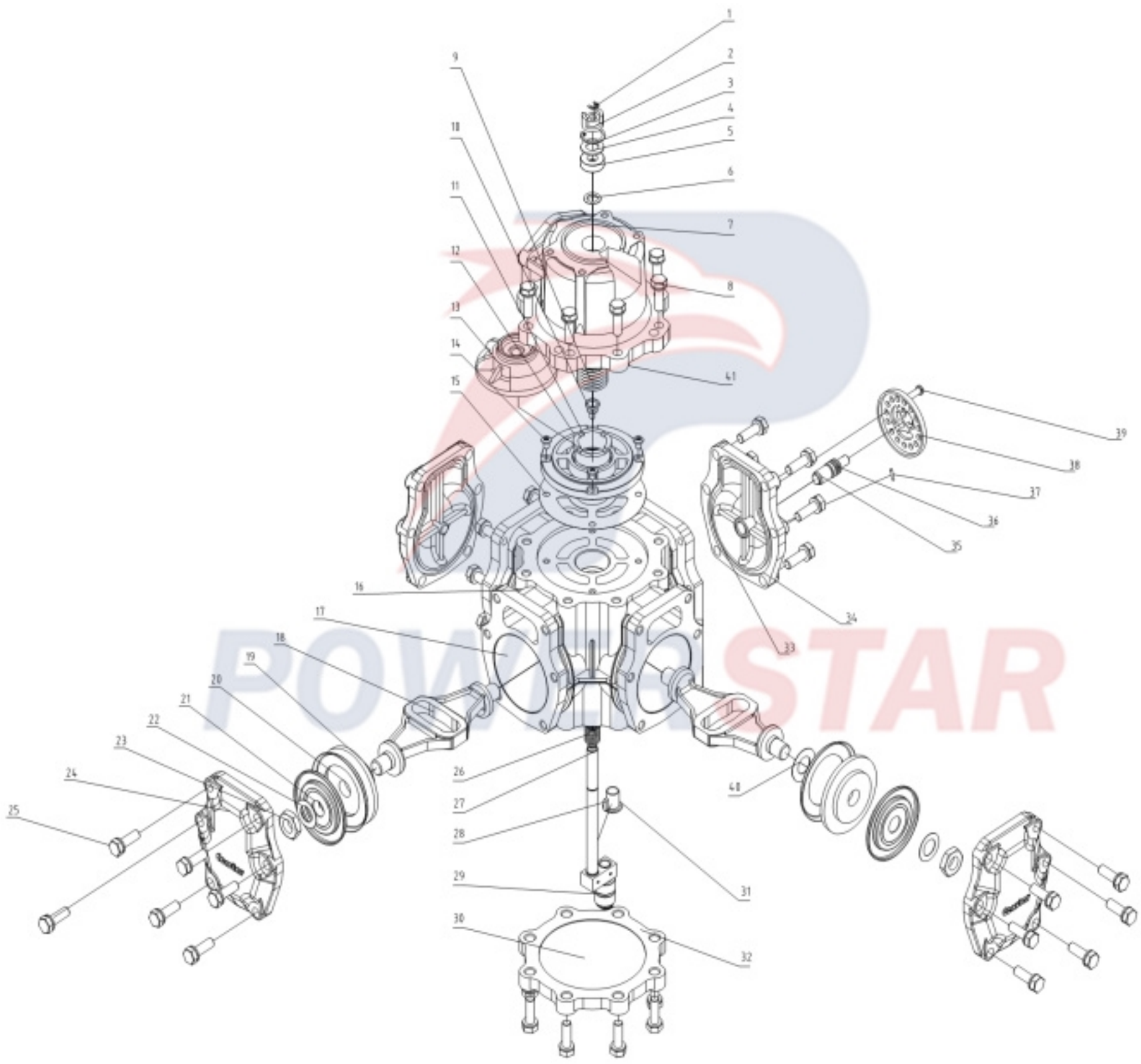
(4) There is dirt on sliding surfaces of the distributing valve and valve seat. Clean them.

Exploded View for Censtar LLJ05 Flow Meter



1 Spring Retainer,22
2 Washer, Oil Seal
3 Oil Seal, TC10 × 22 × 7
4 Shaft Sleeve
5 Shaft Sleeve , 1010
6 Top Cover
7 Bolt, M8 × 25
8 "O" Ring,
Rectangle section 104
9 "O" Ring, 42.5 × 2.62
10 Spring
11 Seal Ring
12 Distributing Valve
13 Seat Retainer
14 Screw, M5 × 16
15 Seat, Distributing Valve
16 Gasket
18 Cylinder Sleeve
19 Connection Rod
20 Gasket, Connection Rod
21 Piston
22 Washer, 14
23 "O" Ring,
Rectangle section 76
24 Nut, M14 × 1
25 Cover, Cylinder
26 Shaft Sleeve
27 Shaft Sleeve, 10160
28 Shifting Yoke
30 Shaft Retainer, 10
31 Gasket
32 Spring
33 Pin, 2.5 × 14
34"O" Ring,
Rectangle section 108
35 Bottom Cover
36 Shaft
37 Key
38 Connecting Yoke
39 Shaft
40 Roller
41 Cover, Calibration
42 Bolt
43 "O"Ring, 9.8 × 1.9
44 Index Disc
45 Pin, 2 × 10
46 Seal Pin

Exploded View for Censtar LLJ08Flow Meter



1 Circlip, 5
2 Shifting Yoke
3 Spring Retainer,22
4 Washer,oil Seal
5 Oil Seal, TC10 × 2
6 Gasket
7 Top Cover
8 Bolt,M8 × 25
9 Spring
10 "O" Ring, 9.12 × 3.53
11Seat Retainer
12Seat, Distributing Valve
13 Distributing Valve
14 Screw, M5 × 12
15 Gasket
16 Flo Meter Body
18 Connection Rod
19 Rear support
20 Piston cup
21 Front support
22 Washer, 14
23 Nut,M14 × 1
24 Cover,Cylinder
25 Screw assembly M8 × 25
26 Spring
27 Crank assembly
28 Key
30 Bottom Cover
31 Shaft Sleeve,10160
32 Gasket
33 "O" Ring, Rectangle section 76
34 Cover, Calibration
35 Bolt
36"O"Ring, 9.8 × 1.9
37 Pin, 2 × 10
38 Index Disc
39 Seal Pin
40 Gasket,Connection Rod
41 "O" Ring, Rectangle section 104