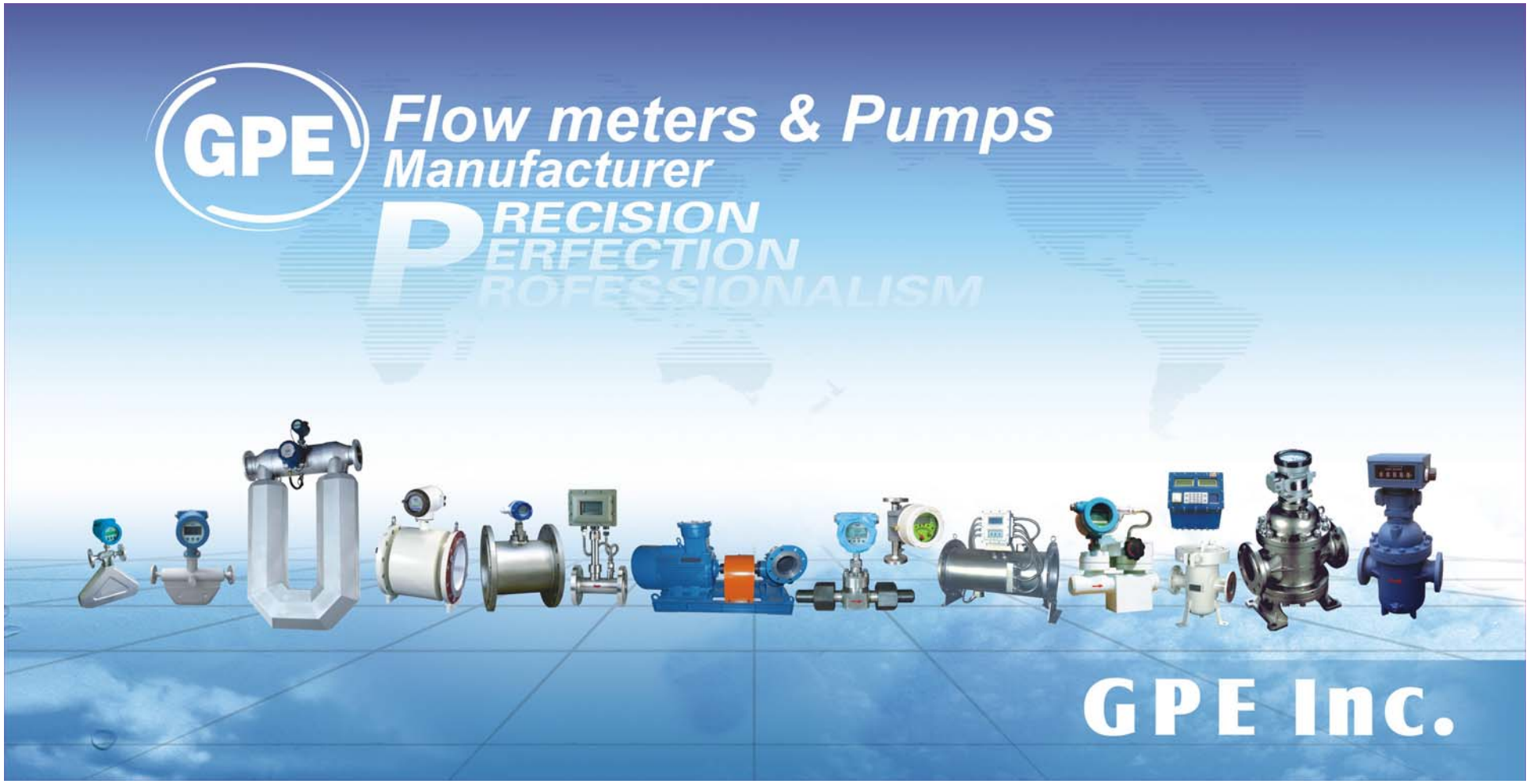
GPE Inc.

Golden promise equipment Inc.


GPE
Flow meters & Pumps
Manufacturer
PRECISION
PERFECTION
PROFESSIONALISM
GPE Inc.

GPE Inc.

GPE Inc.

Who we are?

Golden Promise Equipment Inc. (GPE Inc.) was established in 1999 as a flow instrument supplier and manufacturer, consisting of several small instrumentation manufacturers located in North America and Asia. The Golden Promise Equipment Inc. also includes http://www.gpeus.com/ which is recognized as the most complete flow engineering portal, able to guide users with the best solution for their flow applications. Our aim is to consolidate our global facilities and take advantage of economies of scale by reducing our manufacturing costs and pass it on to our customers.

We plan to take advantage of uniqueness of our individual regional facilities and offer our customers the highest quality at the lowest price. Our mission is to Bring Global Technologies for Local Solutions

Each of our manufacturing facility will concentrate in producing its core products, with sales, market, service as well as manufacturing common items are handled in a centralized facility. Our management has over 18 years experience in process control instrumentation mainly in the area of flow devises.

GPE Inc."s goals are:
1. Offer our customer the best technical solutions to their applications.
2. Offer our customers the most competitive pricing.
3. www.gpeus.com to help users size, specify instrumentation.
4. Offer our customer's experienced independent manufacturer's representatives in their local markets eager to solve their application requirements.
5. Offer our customers calibration and service facilities through out all the regions of world.

Please join us in helping you bring our vast Global Technologies to solve your process control applications in a timely manner

Production Facilities

Automatic Micro-bending Machine

- **Good parallelism could be ensured by the whole control**
- **THE ACCURACY OF the bending angle could be controlled within ±0.1°**
- **The repeatability of micro-bending could be ensured**

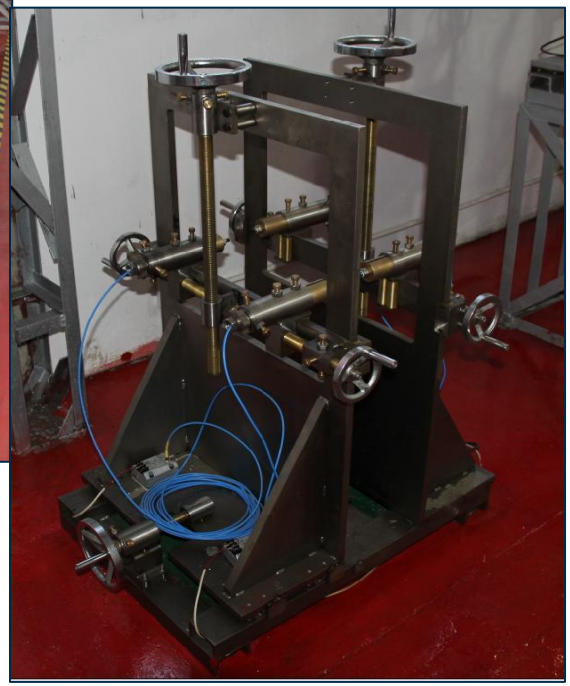
Production Facilities

Automatic Chip Mounter

- **The reject rate can be controlled under 0.01‰**
- **Small volume and high mounting density**
- **High frequency characteristics, EMI and RFI could be reduced**
- **High reliability and shock resistance**

Production Facilities

Creative Assembly and detecting System



- The vibration can be observed clearly
- Vibration transmission can be eliminated
- The system is to boost efficiency and the passing rate

Production Facilities

Automatic Welding Machine

1. High welding quality
2. High yield

Production Facilities

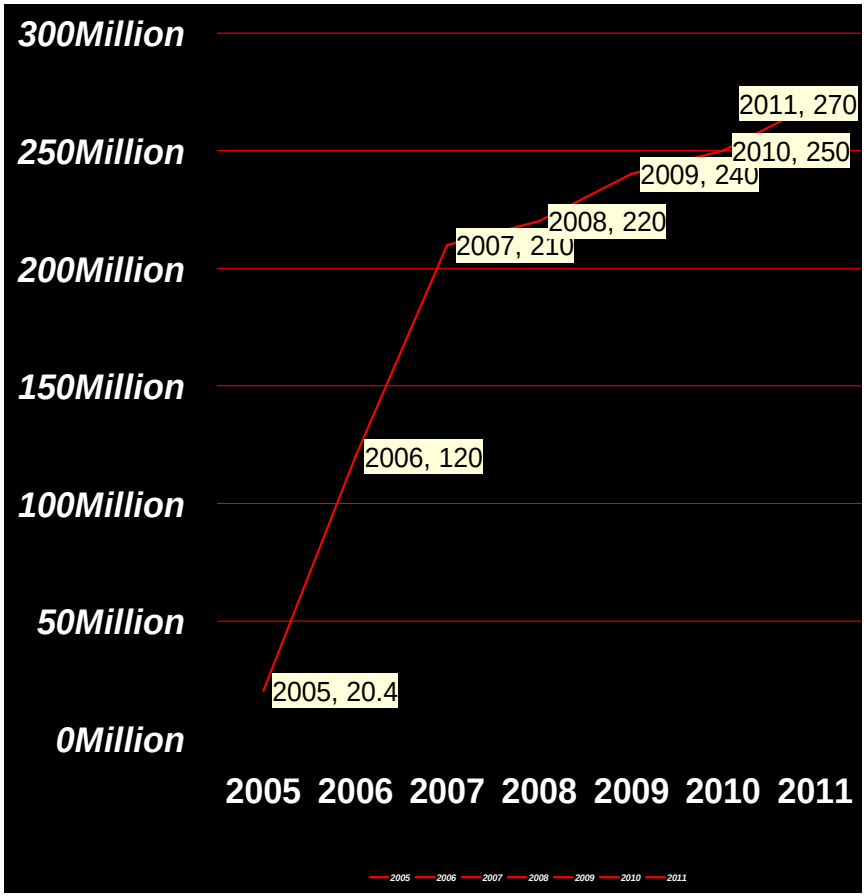
Automatic Calibration System

Oil Calibration Device

Gas Calibration Device

Water Calibration Device

Achievements in the past 7 years



Sales Amount

- **The sale Volume has been growing at average rate of 20%. In 2011, the annual sales reached USD41million.**

F1001-Series Coriolis Mass Flowmeter

Features

- Coriolis Flow Measurement Technology
- Multivariable capability for mass flow rate, volume, density and temperature measurement
- Rugged, robust meters with no moving parts result in minimal maintenance or repair
- Accuracy over a wide flow range from a single meter optimizes plant efficiency
- No flow conditioning or straight pipe runs required making installation simplified and less expensive
- Widest range of Coriolis, density, concentration and net flow measurement devices available

Construction

- Part 1: Transmitter

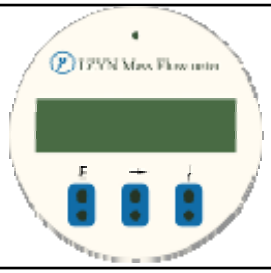
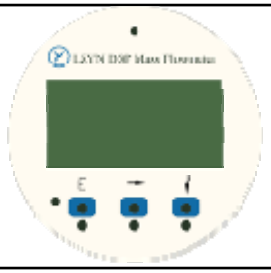
General analog transmitter
(Series G)

Digital DSP transmitter
(Series D)

G type coriolis transmitter is an analog transmitter, which adopts traditional method to do the sampling and signal analysing.

D type coriolis transmitter utilizes DSP technology which greatly improves the methods of sampling, signal filtering, and signal analyzingf or better performance on accuracy and turn down .It especially enhances the accuracy under low flow rate. It can be used for gas medium.

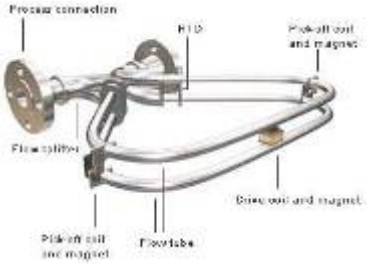
Difference between G Type Analog transmitter and D Type DSP transmitter(see following table)

Comparison	G Type Analog transmitter	D Type DSP transmitter
Principle	1.Traditional sampling, process and reaction; 2.Low turndown.	1.Higher sampling; 2.Shorter response time and quicker reaction; 3.Digital filtering. 4.Higher accuracy and bigger turndown ratio
Display	LCD	OLED
Screen	Small	Big and leave space for future updating
Display Panel		
Model Code	G	D
In conclusion, DSP transmitter is much advanced than Analog transmitter from principle, design and application,However, to keep the consistency on operation, we did not change menus until now.		

Construction

- Part 2: Sensor

Type 1: Triangle Shaped
Size from ½” to 1”

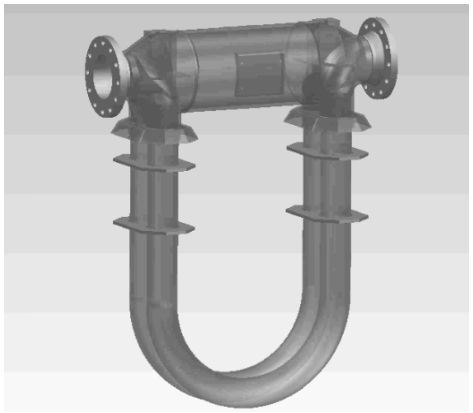


Type 2: U- Shaped
Size from 1 ½ ” to 10”

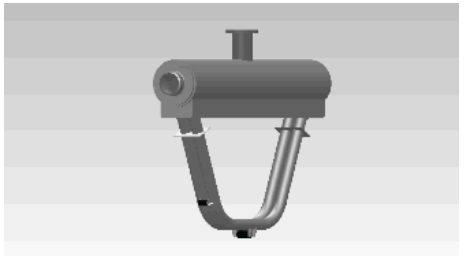
Type 3: Micro-bent Shaped
Size from ½ ” to 6”

Principle

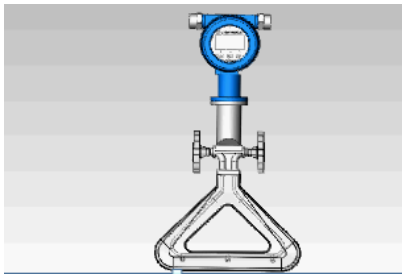
- F1001 Series Mass Flowmeter is designed according to the principle of Coriolis force, once there is flow passing through the tube, Coriolis force will give rise to deflection on the vibration of two pipes and the deflection of vibration is directly proportional to the mass flow of fluid。



U-shaped sensor



Micro-bent Shaped sensor



Δ-Shaped sensor

Structures

Micro-bend Series

U Series

F1001

Triangle Series

Oil field

Application

Chemical Industry

Food

Oil-cut Water Measurement by Coriolis Mass Flowmeter

APPLICATION

In order to optimize oil recovery, a major oil producer in Liaohe must continuously analyze the condition of its producing oil wells. To determine the condition of the well, the oil producer conducts tests on the proportions of the major components of well fluids: oil, water, and gas (CO_2 and methane). Testing costs the oil producer millions of dollars annually, so it's very important to schedule tests efficiently.

Originally, the oil producer tested wells with a three-phase test separator. First, gas was separated from the liquids in a test vessel and then measured by DP meters. Second, capacitance probes on the separator measured the percent water cut. Third, a turbine meter was used for measuring the oil/water emulsion as it was passed to a production separator.

CHALLENGE

The amount of equipment made this traditional three-phase test setup extremely expensive. Because of wide fluctuations in gas flow, five parallel orifice runs were required to produce accurate measurements, and variations in the gas mixture could not be detected. Also, as is typical for orifice meters in this application, calibration drift necessitated frequent recalibration and maintenance.

The turbine meters required constant repairs and replacement, and the capacitance probes were unable to handle high water cuts. In addition to the heavy direct costs, the frequent need for some kind of maintenance made it impossible to test wells on a daily basis.

SOLUTION

The oil producer decided to replace the three-phase test setup with a less costly horizontal two-phase test unit, which incorporated two F1001 series Coriolis mass flowmeters.

A single F1001 series coriolis Mass flowmeter replaced the five orifice runs. It monitors the flow rate and the gas composition with continuous density readings. Coriolis flow meters measure mass flow and density directly and are accurate over a wide flow range. Another F1001 series coriolis mass flowmeter replaced the liquid turbine meter. It measures total liquid flow and provides flow and density data to D series transmitter which computes water cut, net oil, and net water totals.

At the end of a test cycle, the F1001 series coriolis mass flowmeters transmit total gas volume, total fluids, net oil, and net water accumulation in m3 to a SCADA host for analysis and archiving. Since Coriolis sensors are non-intrusive and have no moving parts in the flow stream, there is no calibration drift, and the meters are virtually maintenance-free.

We provided the support, service, and expertise to make this project an engineering and financial success for this customer.

Installation notes

Installation notes：
①The direction of flow tube should be upwards when measuring humid gases.
②The installing position should be selected without large vibration
③The gas content should not over 10% when the medium is water/gas/oil three-phase flow
④The monitor should be kept out of direct sunlight
⑤Ambient Temperature≦50℃

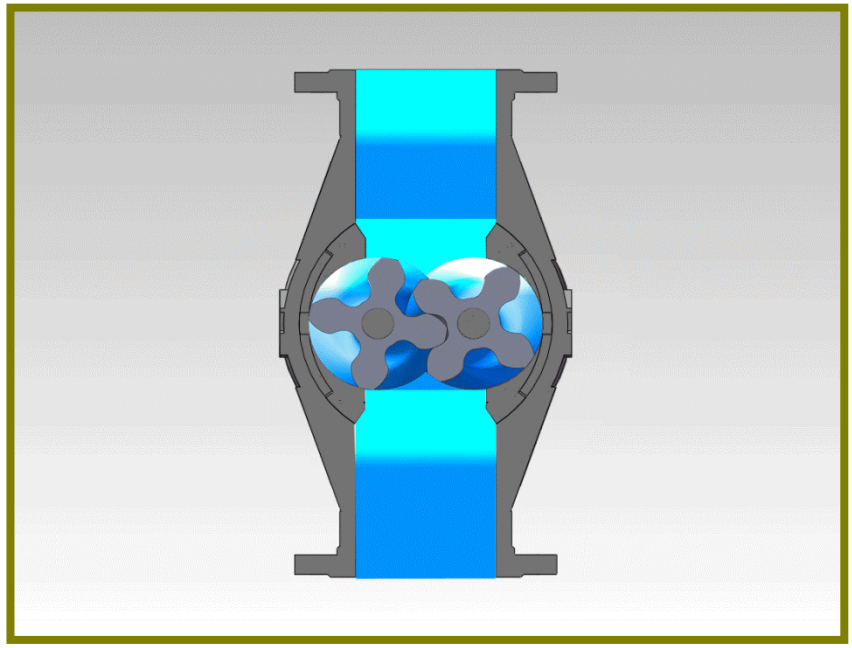
F2001 Bi-rotor Flowmeter (PD Meter)

Features

- Superior accuracy - to 0.1% of reading over 30:1 turn-down
- Uniform rotation means low pressure loss
- No metal-to-metal contact provides for long service lifetime
- Self-lubricating
- Very low noise and vibration
- Reduced number of parts reduces maintenance requirements
- Rugged double case construction prevents loss of calibration
- due to changes in pressure or temperature
- Size from ¼” to 16”

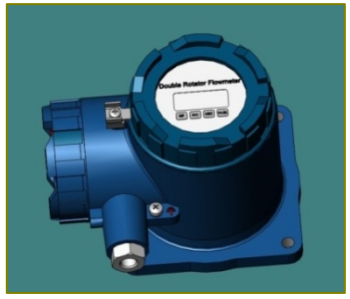
WORKING PRINCIPLE

F2001 Bi-rotor Flow meter (PD Flow meter) is made up of the housing and two special rotors, transmission components and mechanical or electrical register.



Inner measuring chamber

Features- Register For option



Electronic

VR-7886 Mechanical

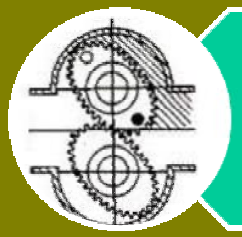
Round Mechanical

EMR3 Register

- Veeder Root-7886 Mechanical Register
- Electronic Ex-proof type LCD , water-proof Register
- Round dial Mechanical
- EMR3 Electronic Meter Register

Feature comparing

Comparing with other kinds of PD Flow meter, F2001-Bi-rotor flow meter means


Oval Gear


Rotary Piston


Roots

- High accuracy and repeatability
- Low noise
- Low pressure loss
- Pulse-free for longer lifetime

Application

petrochemic al

Oil filed& Refinery

Bi-rotor （PD Meter)

Marine

Loading& Metering

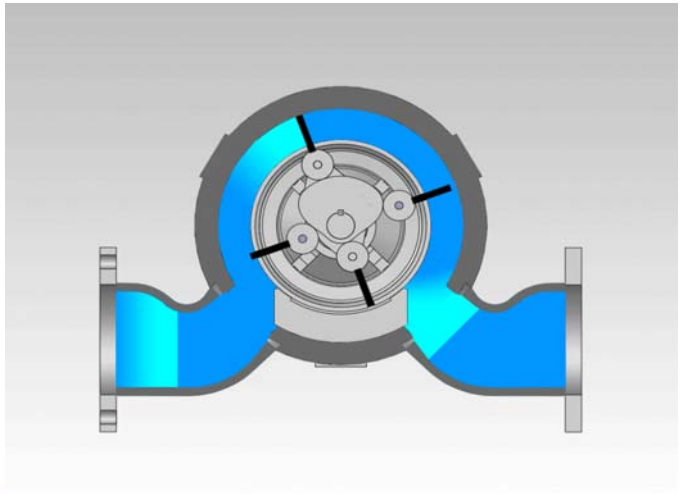
Application

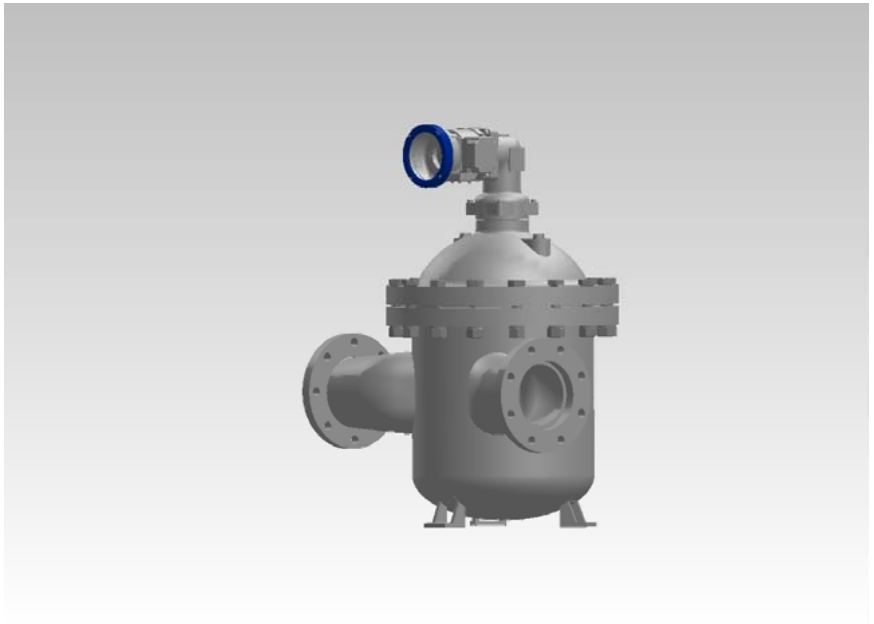
- Flow measurement of liquefied gas, light oil and other viscous liquids
- Built-in counter
- Output signals:
  - Frequency / pulse
  - 4-20 mA
  - RS485
- Powered by battery 3.6 lithium battery/DC24V

F2002- Series Rotary Vane Flowmeter

Introduction

F2002 serials scrape-board flow meter (Also called Rotary Vane Flow meter) is a newly type, particular-designed, precisely process and assembling positive displacement flow meter. It has only one rotator, circling with uniform velocity.





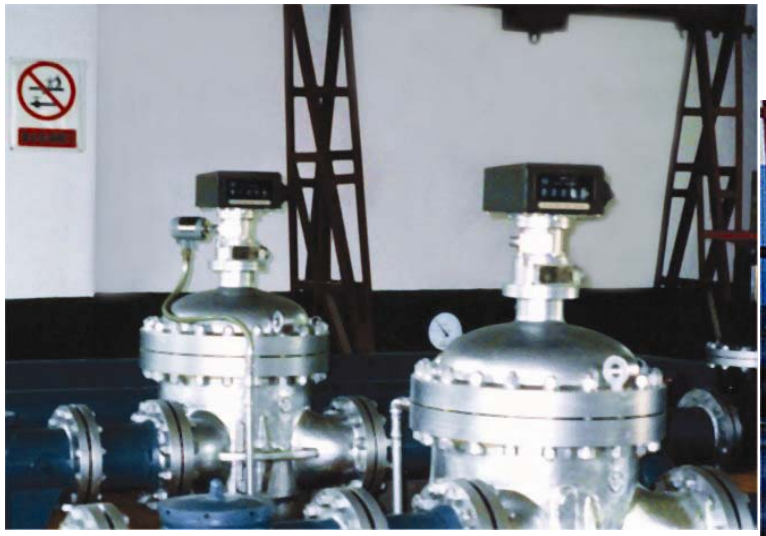
F2002-Series Rotary Vane Flowmeter

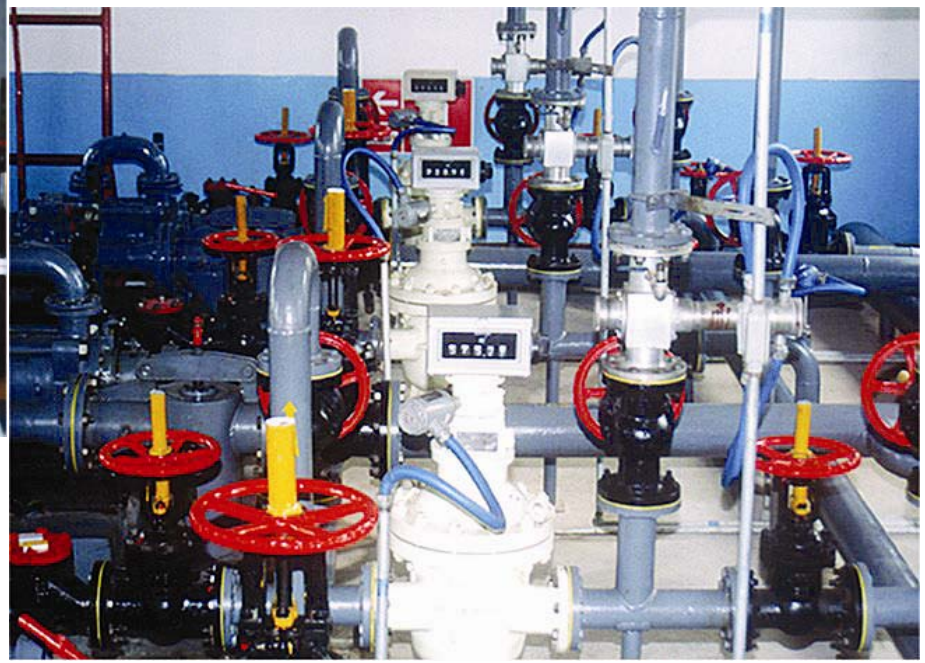
Feature

1. Superior accuracy to ± 0.1%.
2. Smooth running and low noise and vibration
3. Long service lifetime
4. Can match with photoelectric generator for signal output
5. Double cases and Low pressure Drop

Size	1” to 16”
Max. Process pressure	63bar
Max. Process Temp.	Up to 200℃
Register	VR7886/ Round dial register/ digital register
Output	Pulse/4 to 20mA; RS485(for digital only)
Accuracy	Up to +/-0.1+%

Application

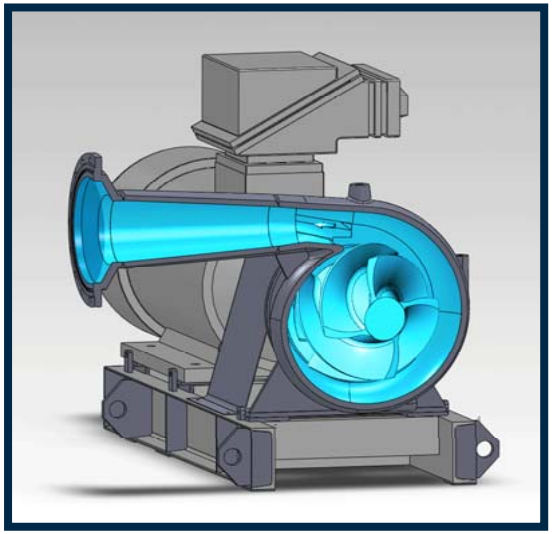




New Products Introduction

XJB-Screw Rotor Pump

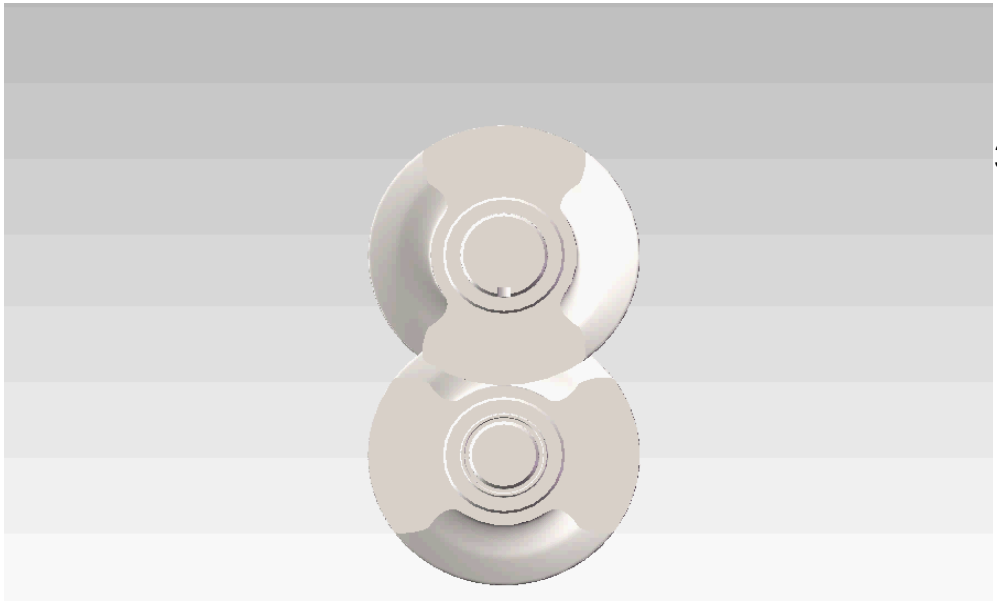
- Working Features:
- Low power consumption , High capacity , good energy-saving performance
- Russia aerospace seal technology
- 1.5~2.5 times capacity than common pump
- 1.5~3.0 times Suction height than common pump
- 30-50% energy conservation than the normal rotor pump in the same flow capacity
- More small Mass and outlet size than common pump
- Special alloy rotor with high wear resistance
- Working and functioning in cavitations



Technical Parameter	Value
Suction height	≤8m
Medium viscosity	≤500CST
Medium density	≤1000kg/m3
Medium temperature	-20℃~ +90℃,-20℃~+180℃
Hard particles	less than 2%
Ambient temperature:	-25℃-+55℃
Relative humidity	<98%RH
vibration mean square value	≤4.5mm/s
atmospheric pressure	86~106kPa.

2GS Series Screw Pump(New generation)

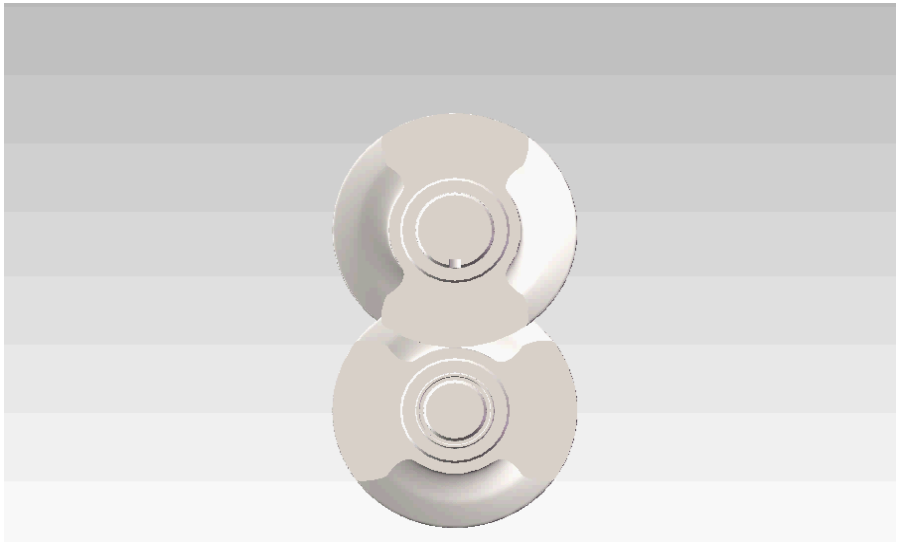
- **High head**
- **Low noise**
- **Resistant impurity**
- **Suitable for high viscosity medium delivery**
- **Self-priming, high suction**



1. **2GS Series screw pump is independent researched by Nuoko Pump Co.,Ltd and gets 2 Chinese invention patents, 5 patents of utility model.**
2. **Screw pump is divided into single screw pump ,two screw pump, double suction two screw pump and three screw pump, we manufacture single suction double screw pump and double suction double screw pump.**
3. **Principle of screw pump: Motor drive several rotors operating in pump cavity, fluid sucked from one side, and discharge to other side (Double suction screw suck fluid from both ends, and discharge in the middle). Pressure increasing and drive fluid delivery. There is sealing face between rotators inside and shell, in which the flow is transited in a certain unit like by a spoon, so screw pump is a kind of positive displacement pump.**

2GS Series Screw Pump

1. **High head**
2. **Low noise**
3. **Resistant impurity**
4. **Suitable for high viscosity medium delivery**
5. **Self-priming, high suction**



4. Features:

① **The screw pump is a positive displacement pump. Fluid can't get through when the pump isn't running, once it's working, fluid will forced away, so this pump have high head especially two screw pump.**

② **Gap among two rotators is keep tangent situation, there are no friction, so the pump will run smoothly with low noise.**

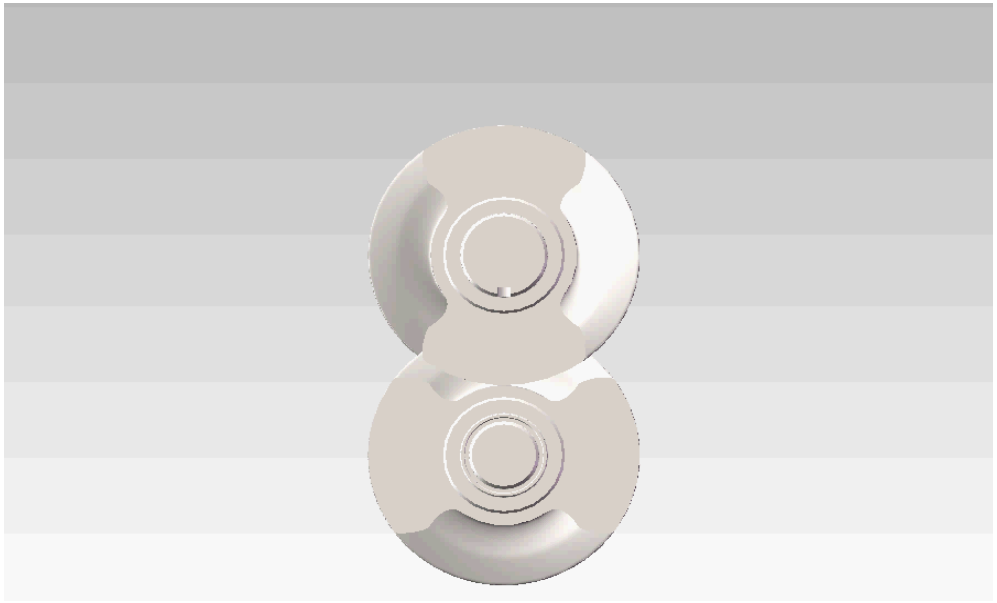
③ **The shape of groove is deep and large, particle impurity can get through easily, that make the pump has good performance to resistant impurities.**

④ **Rotor has high strength and powerful cutting capacity, so it can be used for high viscosity fluid delivery.**

⑤ **High suction and self-priming**

2GS Series Screw Pump

1. **High head**
2. **Low noise**
3. **Resistant impurity**
4. **Suitable for high viscosity medium delivery**
5. **Self-priming, high suction**



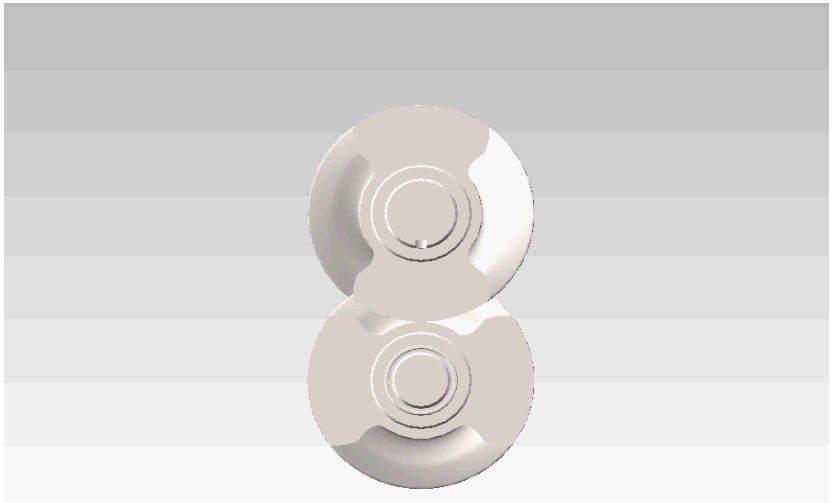
5. **Difference of single suction two screw pump and double suction two screw pump.**

Single suction two screw pump is line sealing, pumping pressure between 0.6 ~ 1.6 Mpa in general, suitable for deliver clean medium. Line sealing in the long after use or wear, pump efficiency will decrease, but simple manufacturing process cause low cost, price is less than half of the double suction two screw pump. Face sealing rotor is more expensive than line sealing but pump efficiency will batter.

Double suction two screw pump is face sealing, pumping pressure between 1.6 ~ 6.4 Mpa in general, pump efficiency stability in a long-term service. High prices because complicated structure, suitable for conveying high lift medium and petrochemical industry is widely applied.

2GS Series Screw Pump

1. **High head**
2. **Low noise**
3. **Resistant impurity**
4. **Suitable for high viscosity medium delivery**
5. **Self-priming, high suction**



6. Model selection matters need attention

① Pay attention to pump capacity and lift choice, pump displacement in the maximum, the lift must be the smallest, and pump lift is the highest, displacement shall be the smallest.

② Medium contain linear impurity and large particle impurity unfavorable choose screw pump.

③ Screw pump's price is high, please consider the purchasing power of clients.

④ Requirements for anti-explosion and frequency conversion

7. Application

① Crude oil delivery, applicable to all kinds of oil viscosity crude oil transport. Metering station and depot, joint station, pipeline transportation, loading and unloading are available.

② Gasoline, diesel oil and various chemical media transport. Such as loading, unloading, shipment discharging, distance transportation, etc.

③ Boiler fuel pump

④ Marine pump

⑤ Cooking oil transfer pump.

⑥ Fire pump.

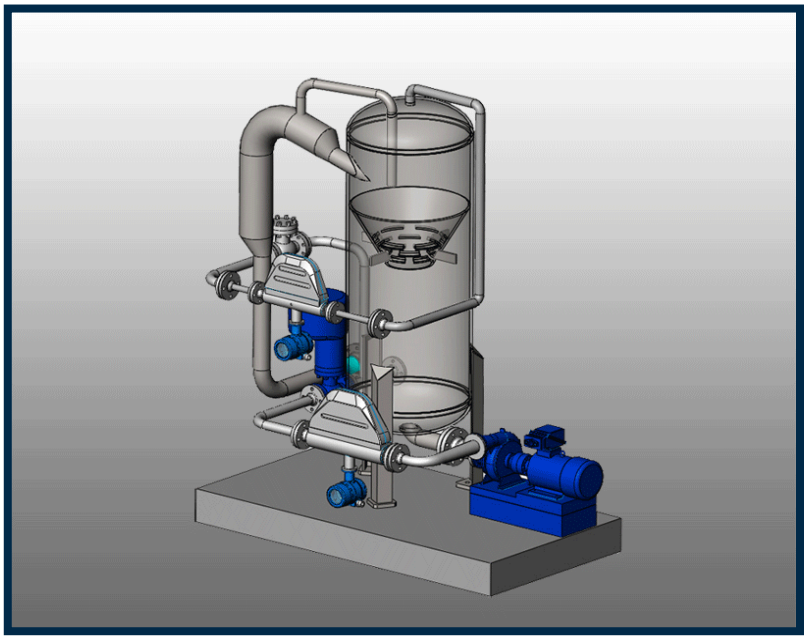
8. Caution

① Entrance must be filled with fluid, Idling is forbidden.

② Inlet valve and outlet valve shut down for a long time will damage the pump and motor.

Application

YQSJL-YN Multi-phase measurement equipment



BACKGROUND INTRODUCTION

It’s important and big challenge to get the data of oil, gas, water content and total productivity in oil well for analysis, but here we are to introduce Multi-phase (Oil, Gas, Water) separation measurement equipment, which Is a new high tech product researched and developed independently with our own intelligence property right. The successful application of Multi-phase measurement equipment will decrease the oil extraction cost, decrease the measurement station quantity or don’t use them any more, which will make the oil extraction process to new level.

YQSJL-YN-Multi-phase measurement equipment

SEVEN FEATURES!!!

Break gas thoroughly

Boost pressure through pumping

Easy to measure with high accuracy.
High automation

Remote communication to connect with the oilfield network.

Skid-mounted for easy installation and application
Two years full tracking service

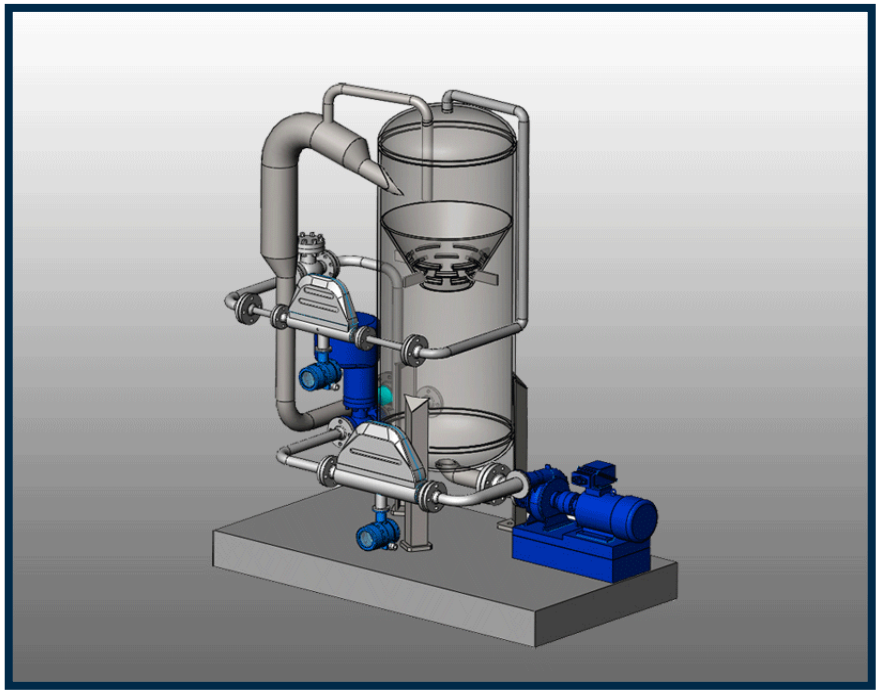
THREE GAS SEPERATION WAYS

Cyclonic gas separation

Bubble-hitting gas separation

Negative pressure burst gas separation

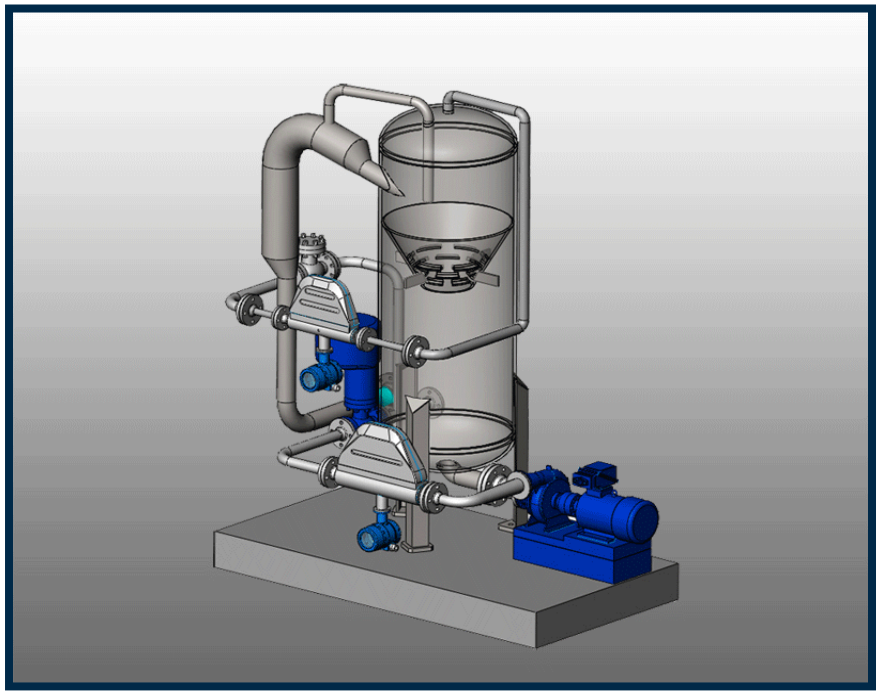
YQSJL-YN Multi-phase measurement equipment



Multi-phase measurement(Oil, Gas, Water) technology

Multi-phase measurement(Oil, Gas, Water) separation, also called compact cyclonic degassers or compact cyclone multi-phase meters, get around the problem of multi-phase flow by separating the gas phase from the water and oil phases. When oil is pumped into the device, it enters a cylindrical Cyclonic) chamber at an angle, generating a centrifugal force that pushes the oil and water to the outside of the chamber, leaving the gas stage in the center to rise to the top to be measured by a gas flow meter.The oil and water mixture then passes through a water-cut meter or other multi-phase meter. Coriolis flow meters commonly are used. Indeed, Coriolis meters are probably the best

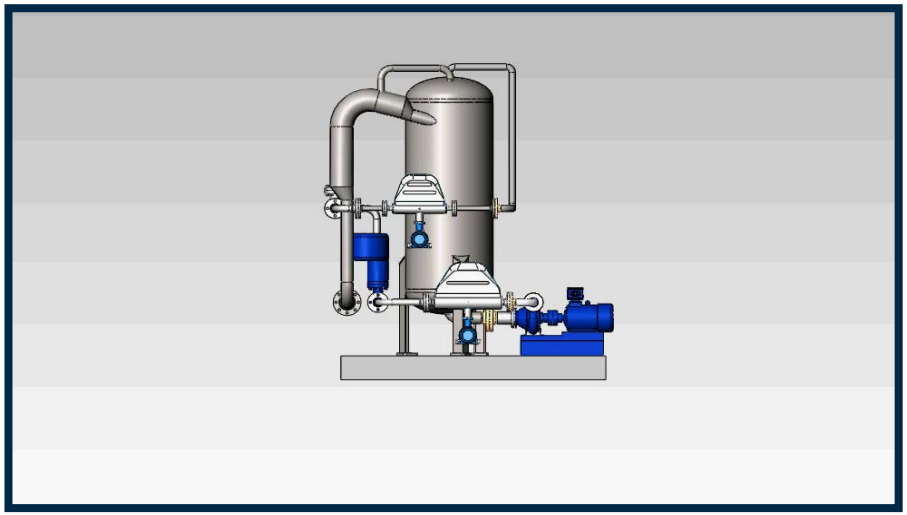
YQSJL-YN Multi-phase measurement equipment



technology to measure two-phase oil and water flows, making it promising for heavy oil applications. With Multi-phase measurement equipment, the process is much quicker than with a full separator, offering near real-time measurements to determine if a well is producing adequately. Multi-phase measurement equipment cost less to purchase and have a much smaller footprint than full separators. They can be made small enough to be portable, allowing operators to test older wells that might not have enough output to justify investing in a full separator. Multi-phase separation measurement may not be an ideal choice for measuring heavy oil, which is difficult to separate.

There are two types Multi-phase measurement equipment, namely, Single well type and measurement station.

YQSJL-YN Multi-phase measurement equipment



1) Single well type.

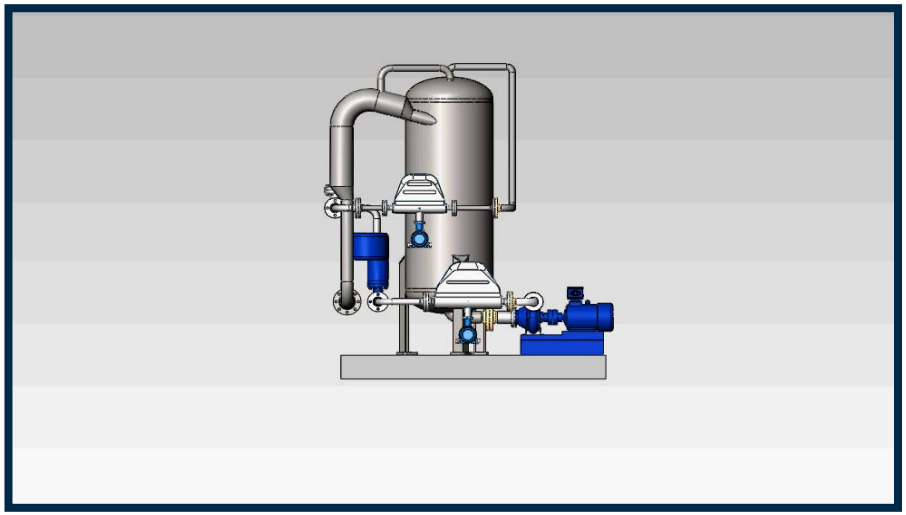
a. If the oil extraction flow is more than 10m3/day and gas content is less than or equal to 3%, we will have Micro-bent mass flow meter size 1” or 1-1/2”to measure water-cut-oil(oil content, water content and the total flow).

b. if the daily oil extraction flow is less than 10m3 and the gas content is less than or equal to 3%, It can be measured by mass flow meter directly, because the more small size mass flow meter will arise high pressure drop, which will make the flow transfer impossible. So we have to choose single well chamber type Multi-phase measurement equipment YQSJL-YN-II.

c. If the daily oil extraction flow is less than 10m3 and the gas content is more than 3%. It should choose Single well chamber type Multi-phase measurement equipment YQSJL-YN-III

d. measurement station Multi-phase equipment YQSJL-YN-II, with six well , eleven well, fifty well type, can sample each well to measure. There is a mass flow meter installed in the inlet of the Multi-phase measurement equipment to measure total flow。

YQSJL-YN Multi-phase measurement equipment

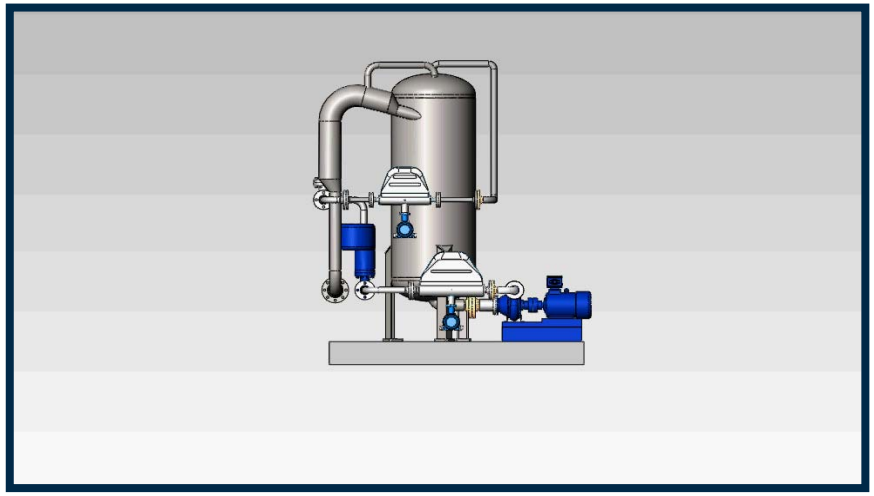


The extracted oil(oil, water, gas mixture) will enter the cyclonic chamber, to separate the gas from the liquid mixture to the full with the principle of Cyclonic gas separation, bubble-hitting gas separation and negative pressure gas burst. The water cut oil will be measured by one mass flow meter to analyze the water content and the separated gas will be measured by one mass flow meter(or Ultrasonic gas or vortex). These three flow meter's data will be transmitted to controller to show the it's oil, water and gas percentage and total flow. Still the measurement equipment chamber's level is also set by the controller.

The Multi-phase measurement equipment features:

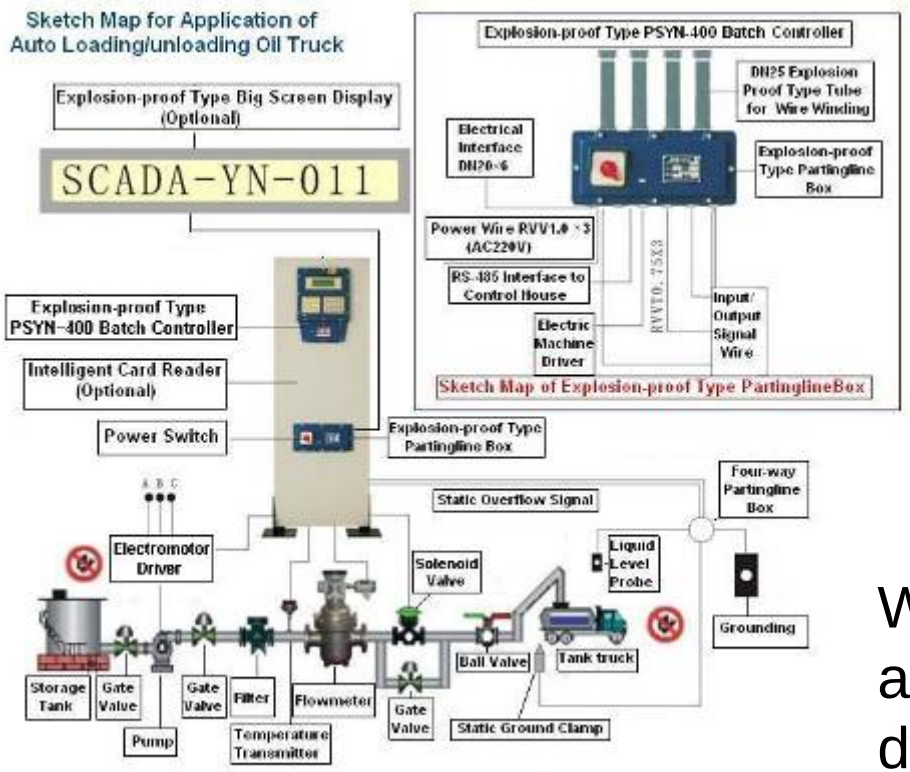
1) We adopt three principles to separate the gas from the extracted oil. Namely,
Cyclonic gas separation, bubble-hitting gas separation and negative pressure gas burst. The measurement equipment chamber's inner pressure is eliminated by pump made by us, the gas will be separated within conditions of no pressure，Which is the best condition for gas separation and plus another two methods, bubble hitting,

YQSJL-YN Multi-phase measurement equipment



cyclonic gas separation make the gas separation to the full.
2) It will recovery the inner pressure back to original working conditions by our pump and there are no pressure drop flowing through these equipment but increasing the pressure, which will be welcomed by most end-user.
3) the gas discharging chamber is big, easy for gas discharging. The gas volume will be big and easy for meter measurement.
4) because of the bigger separation chamber, so it can be used in oil well whatever the oil extraction productivity is high or low. Increasing pumping times if the oil extraction is high, decreasing pumping times if the oil extraction is low.
5) complete automation.
Oil flow-in, flow-out, pressure decreasing, pressure increasing, chamber level, water-cut oil, gas analysis will be controlled automatically.
6) Remote output to connect with oil filed network.
7) Skid-mounted, easy installation and application.
8) customized dimension and reasonable price(
9) Two years full tracking service

QZ-Skid Mounted System



We can customize QZ system as one/two/three/four channels dispensing at same time in one system.

Thank you four attention!

For any question, Please contact us:

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