

Accurate calibration, Perfect service!



SPMK 214E Pneumatic High Pressure Comparator User's Manual



Beijing Spake Technology Co., Ltd.

Product Introduction

This new generation of patented product, using the world's leading sealing technology, refined through a variety of processing technology, it has features of simple structure, high reliability, ease operation, fast pressure increasing, no easy leaking, positive and vacuum pressure available. It can calibrate pressure transmitter, precision (ordinary) pressure gauge and other pressure instruments. It is applicable to food hygiene, aerospace, military, metallurgy, measurement and other industries.

Main Feature

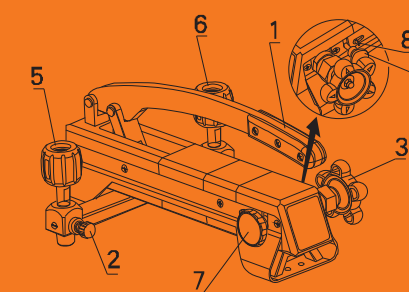
- > Labor saving and high efficiency which is 5 times of ordinary test pump;
- > 2 quick connection ports, easy and convenient disassembly under tested (standard) instrument;
- > Fine adjustment settings which can increase fine adjustment resolution of pressure;
- > All parts are made of imported aluminum alloy material and made by a variety of processing technology; the quality is stable and reliable;
- > Easy maintenance and repair, producing pressure safe and reliable.

Technical Indicator

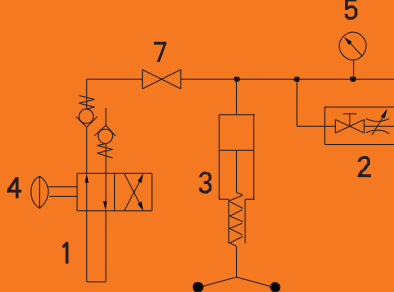
- > Pressure range: (-0.095~16)MPa
- > Medium: air
- > Adjustment resolution: 1Pa
- > Interface size: M20 × 1.5 standard connector
- > Dimension: (470×262×170)mm
- > Weight: 6.0kg

Structure and Principle

■ Structure



■ Principle



- 1, Pressuring handle
2, Output port
3, Fine adjustment handwheel
4, Positive/vacuum pressure switch
5, Air release valve
6, Output port
7, Pressure maintaining valve
8, Switcher safety pin

Accessories Included

- > O-rings 10pcs;
- > M20x1.5 output port plug 2 pcs.



Precautions

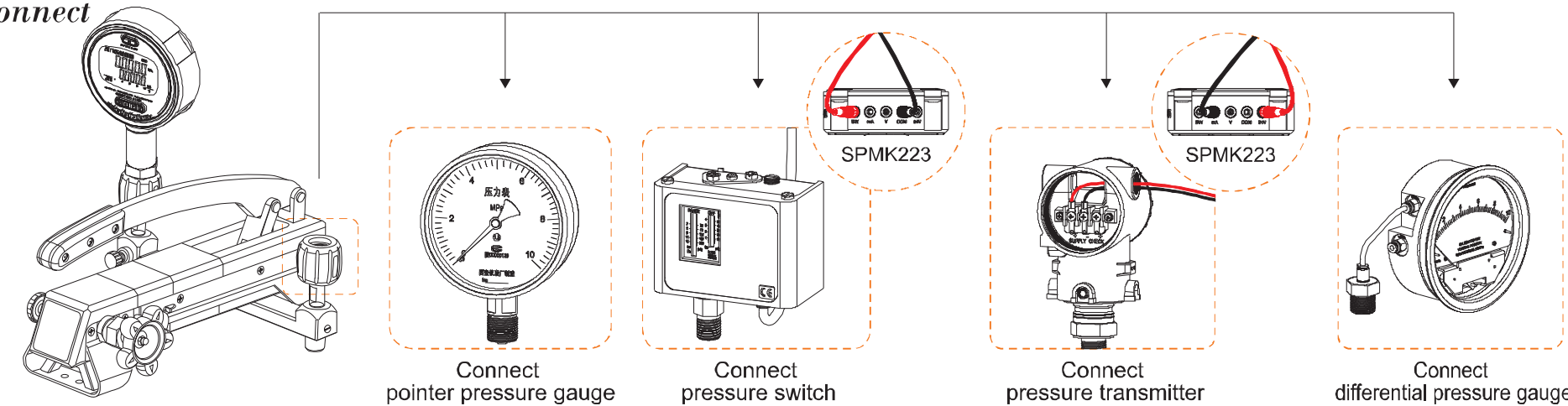
- > Gauges with impurity or strong corrosive media inside must be cleaned before calibration;
- > When the under tested instrument thread interface is damaged, the output port may be leaking. Please use adaptor and sealing aluminum pad of our company;
- > It is forbidden to switch positive and vacuum pressure when there is pressure in system;
- > It is forbidden to connect with hydraulic media instruments;
- > It is forbidden to mix this instrument with other instrument, it is forbidden to use over range of the rated pressure of this comparator;
- > Our company will not be responsible for any personal safety problem or equipment damage caused by wrong operation.

FAQ and Solutions

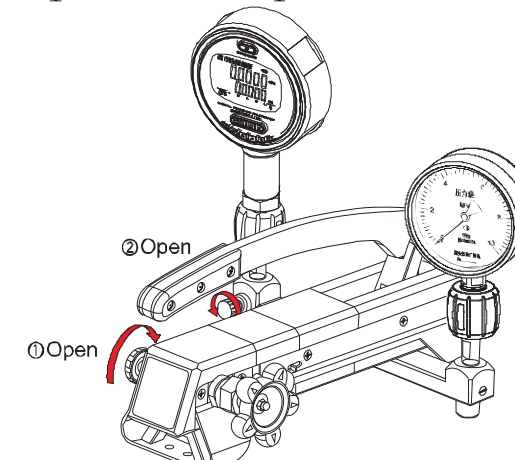
Problems	Reason	Solution
Difficulty in producing pressure	Pressure maintaining valve is not open	Open pressure maintaining valve
	Air release valve is not closed	Close air release valve
	Seal element damaged	Replace seal element
	The under tested or standard gauges is not tightened	Tighten the gauges both the standard and under tested
	The position of positive/vacuum pressure switcher is wrong	Confirm the position of positive/vacuum pressure switcher
Leakage for pressure pump	leakage of under tested gauge	Try to change another under tested gauge and test
	The connecting thread end face of under tested gauge is not flat (straight thread)	To connect with adaptor of my company, add PTFE gasket seal and use tools to tighten
	The seal element of pump output port is damaged	Replace the O rings Ø14×3.1
	When the tested gauges are tapered thread	Must use corresponding adaptors and add raw material with tools to tighten
	There is foreign matter in the system, and dirty matters on the surface of valve	Generate pressure many times, relief pressure quickly to wash sealing surface, return to factory for maintenance if necessary
Other notes	Leakage of pressure pump	Connect the pressure module or precision pressure gauge with pressure pump output port, use plugs to tighten other output ports, increasing pressure to upper limit pressure to test the tightness, return to the factory if necessary
	A lot of oil enter into system	Generate pressure many times, then open air release valve quickly, repeat for many times, so it can eliminate oil/water from exhaust port
	There are unusual sounds in the moving components	Add a little lubricating grease to rotating parts at regular time
	Seal elements aging	All rubber seals have aging stage, it is better to replace once a year

Basic Operation

A Connect

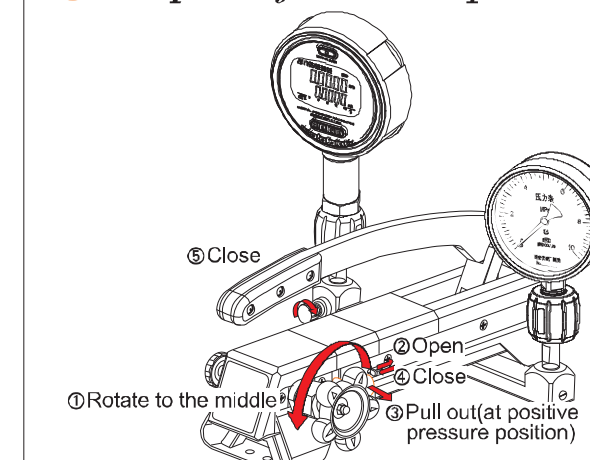


B Open to atmosphere

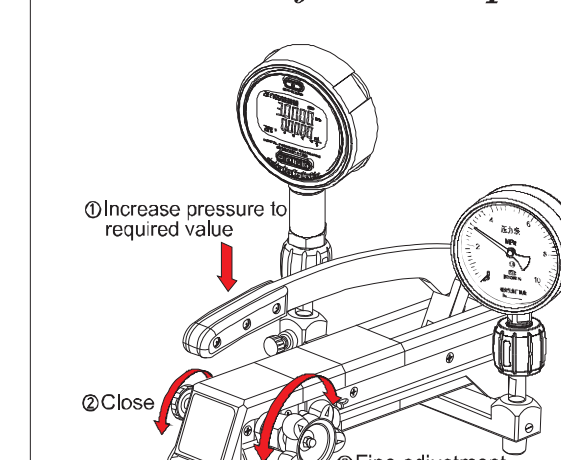


Zero cleaning can be done at this state

C Prepare of increase pressure



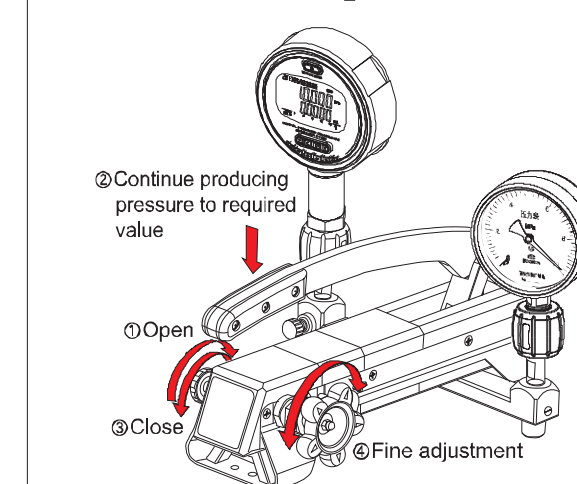
D Process of increase pressure



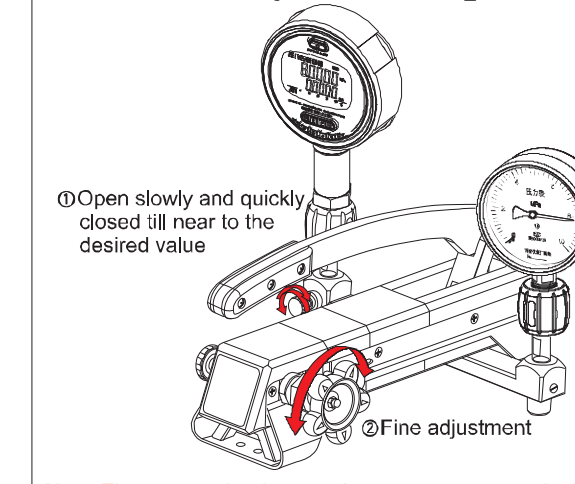
Note: 1. Beijing Spake Technology Co., Ltd. has made every effort to ensure the accuracy of the contents of this manual, but due to the different calibration object, the content may not be comprehensive, please refer to the relevant calibration procedures for using.
2. All photos here are for reference only, please take the actual product as the standard.

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E Re-increase pressure

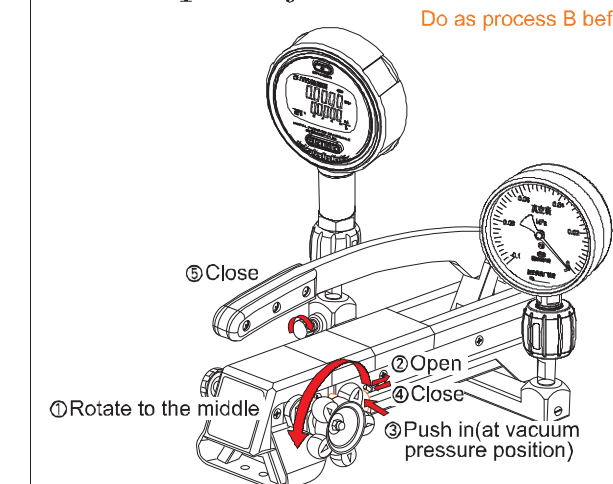


F Process of decrease pressure



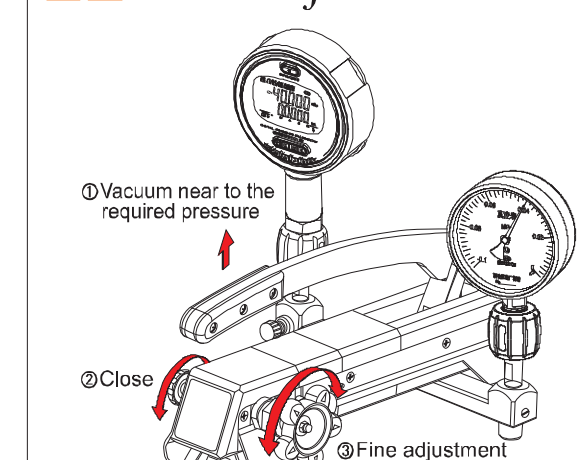
Note: The rest can be done as the same manner, to do the next point calibration of decrease pressure till zero pressure.

G Prepare of vacuum

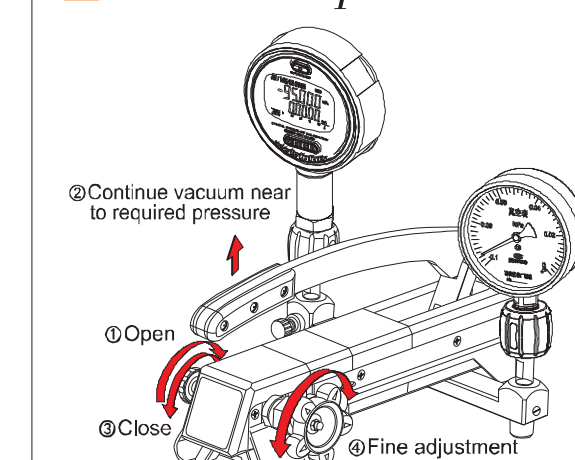


Do as process B before this

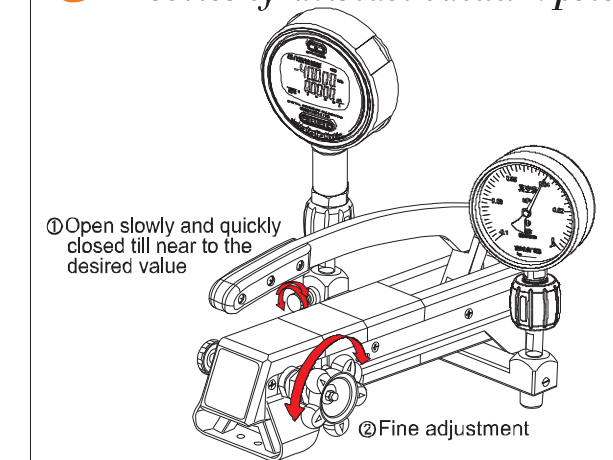
H Process of vacuum



I Re-vacuum process



J Process of decrease vacuum pressure



The rest can be done as the same manner, to do the next point calibration of decrease pressure until zero pressure and then take apart the under tested gauge and standard gauge.

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