

**User manual**  
**Electric vacuum comparator**  
**HS315**



## Claim

- The operating instructions are parts of the products and must be kept in the immediate vicinity of the instrument and readily accessible to skilled personnel at any time.
- Skilled personnel must have carefully read and understood the operating instructions prior to beginning any work.
- The manufacturer's liability is void in the case of any damage caused by using the product contrary to its intended use, non-compliance with these operating instructions, assignment of insufficiently qualified skilled personnel or unauthorized modifications to the instrument.
- HUAXIN reserve the rights to change the contents or form of these operating instructions at any time without prior notice having been given.

## Safety information

### Symbol



.....warns you against actions that can cause injury to people or damage to the instrument.



..... points out useful tips, recommendations and information for efficient and trouble-free operation.

### Warning

In order to protect your products, your own and others safety, please read this manual carefully before your operation, otherwise it may cause trouble. Huaxin is not liable for any safety problems or damages caused by misuse or incorrect operation.

#### ① Operate by professional



The system must only be operated by trained and authorised personnel who know the manual and can work according to them.

#### ② Use the product only as specified



Any operation not included in the following instructions or outside the specifications must not be attempted.

#### ③ Please use non-damage goods



Don't use the product if it is damaged.

#### ④ No Disassembling

 Disassembling may cause physical injury or equipment damage. Only qualified technicians are allowed to fix the equipment. Please call our service staff for repair instruction and guidance if there would be anything wrong.

#### ⑤ Don't calibrate oil(water) pressure gauge

 If you use the item to calibrate oil(water) pressure gauges, maybe oil(water) will enter into it and that couldn't generate pressure anymore, Meanwhile that may pollute the gauges under test. (We supply oil and gas separator which avoid oil/water).

#### ⑥ No pressure in the system when remove gauge

 This action can cause damage to person if the system has pressure.

### Labelling

Huaxin Instrument(Beijing)Co.,Ltd.	•	Manufacturer	
Model	HS315	•	Model
Product	Electric vacuum comparator	•	Product name
Range	(-0.95-0)bar	•	Pressure ranges
No.	15011208	•	Serial number
Date	2015.01	•	Date of manufacture

**Claim**

**Safety**

<b>1.Summary</b>	1
<b>2.Technical Specification</b>	1
<b>3.Components</b>	1
<b>4.Operation</b>	2
<b>5.Troubleshooting</b>	3
<b>6.Maintenance</b>	4
<b>7.Support</b>	4

## 1. Summary

HS315 Electric vacuum comparator adopt Gas–Gas push principle,the extra vacuum pump can vacuum the system.This instrument is easy to operate and very rapidly generate the required testing pressure,providing precise pressure control,only needs less than 5s to stabilize the pressure.Following the points above mentioned,its main feature is in saving both effort and time,which is very suitable to do heavy & repeat calibration work in industries of oil & gas, metallurgy,power etc.

### Functions

HS315 is an ideal solution in the laboratory for calibrating pressure transmitters, pressure gauge,presure switches & other industrial pressure instruments.

### Characteristics

- Fast stability,labor saving,simple operation
- Steady servo control
- Non-leaking,convenient clean

## 2. Technical Specification

Model:HS315 Electric vacuum comparator

Pressure range:(-0.95-0)bar

Media:Air

Stability speed:Within 5s each point

Output:M20×1.5(2pcs Female)

Package:Specialized cartons and foam wrap

Dimension:305mm×300mm×165mm

Net weight:4.9kg

## 3. Components



### ① Shut-off valve

Slowly open it anti-clockwise to increase vacuum,close it clockwise to cut off the connection between system and vacuum pump.

### ② F-adjust valve

To realize the fine adjustment of pressure value.(Turning in clockwise to decrease vacuum).

### ③ Relieve valve

Have to close before vacuumizing(clockwise).Slowly open it to decrease vacuum.

### ④ Output

There are tow outputs.One is designed for standard gauge,the others for gauge under test.

## 4. Operation

### 4.1.Calibration steps of vacuum pressure gauge

Take vacuum pressure gauge as example.

- A** Connect vacuum pump and HS315 with output hose. Close shut-off valve ① clockwise. Set F-adjust ② valve to the mid position,then open the relieve valve ③ .
- B** Remove the plugs of the output, install the standard and gauge under test.Record the zero data.
- C** Close relieve valve ③ ,then open vacuum pump.
- D** Slowly open shut off valve ① and close it quickly to increase vacuum,then adjust F-adjust value ② to get exact values.To calibrate standard points according to above steps until full scale. Record data.
- E** Loop calibration:Close the shut-off valve ① ,slowly open relieve valve ③ and close it quickly,that can decrease vacuum of system,then use F-adjust valve ② to get exact values.Repeat above steps to calibrate standard points you need.Then record data.
- F** Finish the loop process and open the relieve valve ③ completely.The system pressure is zero.

### 4.2.Operation steps of vacuum pump

- A** Please confirm if there is enough media in vacuum pump.The oil position should be at least 2/3 of the whole oil tank.
- B** The oil used in vacuum pump is different from conventional oil.Be careful not to mix them up.
- C** There must be no liquid or big dusts in tested vacuum gauge.That will effect its usage if they enter into vacuum pump.

**i Remark:**

1. Don't install the gauges with corrosive or other impurity, or it has an effect on lifespan and functions.
2. The air compressor must keep in a normal working condition.

**NOTES:**

1. There must be no pressure in the system when removing pressure gauge.
2. Replace the O-rings regularly.
3. The working media is air. Please don't mix with other liquid.
4. The item is non-oil instrument, don't mix with liquid.

## 5. Troubleshooting

There may be some faults of HS315 mentioned below after long term use, the maintainer can analyse and eliminate problems by these methods. Make sure to release all pressure of system. It is forbidden to disassemble and repair the product with pressure.

Faults	Cause	Solution
Leakage phenomenon/ it could not vacuumize	No enough medium in vacuum pump	Add medium
	The O-rings of outputs are damaged	Replace the O-rings
	Relieve valve is not closed completely	Re-close the relieve valve
	There is large damage on the sealing faces of gauge under test	Check the sealing
After closing the shut-off valve, the pressure is instable. It still increase vacuum	The shut-off valve is not closed completely	Re-close the shut-off valve

## 6. Maintenance

6.1.If this equipment will be in idle for a long time, please put on the plugs,close relieve valve and shut-off valve.Cut off the power of vacuum pump and use dust sheets. It could prevent dust entering into system.

6.2.If HS315 needs to take a long distance transport,please close all plugs.It is necessary to pack with specialized cartons and foam wrap.

6.3.This is non-oil instrument.Don't calibrate oil(water) gauge.

## 7. Support

The product specifications and other information contained in this manual are subject to change without notice,if you have any questions,please call our services hotline:400 611 3558 or Tel:+86-10-62392087

## **HUAXIN Products series**

### **Digital Pressure Gauge**

HX601/HS108

### **Intelligent Pressure Calibrator**

HS602

### **Pressure Comparator**

HS700(-0.5-0.5)bar

HS701(-0.95-6)bar

HS702(-0.95-16/25)bar

HS703(-0.95-40/60)bar

HS720(0-140)bar

HS704 (0-160/250)bar

HS705/HS705A(0-600/700)bar

HS710/HS710A(0-600/700)bar

HS706(0-1600/2500)bar

### **Electrical Pressure Comparator**

HS318L(0-600)bar 5pcs output

HS316L(0-25)bar 5pcs output

HS317L(0-60)bar 5pcs output

HS315(-0.95-0)bar 2pcs output

HS316(0-25)bar 3pcs output

HS318(0-600)bar 3pcs output

### **Automatic Pressure Calibrator**

HS620(-0.1-1)bar,(-0.95-25)bar

### **Sphygomanometer Calibrator**

ME01 & ME02

### **Temperature Calibrator**

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HUAXIN INSTRUMENT(BEIJING)CO.,LTD

Add:No.11,Chuangxin road,Changping,Beijing,102200,China.

E-mail:sales-huaxin@comeonhs.com/Web:<http://www.sino-instruments.com>

Tel:+86-10-62392087/Fax:+86-10-62345183