



# **HS705 Hydraulic Comparator**

## **User manual**

**Huaxin Instrument(Beijing)CO.,Ltd**

## **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.**

**HUAXIN reserve the rights to change the contents or form of these operating instructions at any time without prior notice having been given.**

**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.**

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# 1.Safty

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.



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

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## Warning

### 1. No Disassembling



Disassembling may cause physical injury or equipment damage..Please call our service staff for repair instruction and guidance if there would be anything wrong.

### 2. Store the item with pressure



If this equipment will be in idle for a long time,please close the relieve valve and provide pressure about 2bar.In order to avoid the air enter into the item inside.that will affect the system stability when you use it next time.

### 3. Don't calibrate water pressure gauge



Only provide pressure for oil gauge.if you use the item to calibrate water pressure gauges,maybe water will enter into it and that couldn't generate pressure anymore.Meanwhile that may pollute the gauges under test.

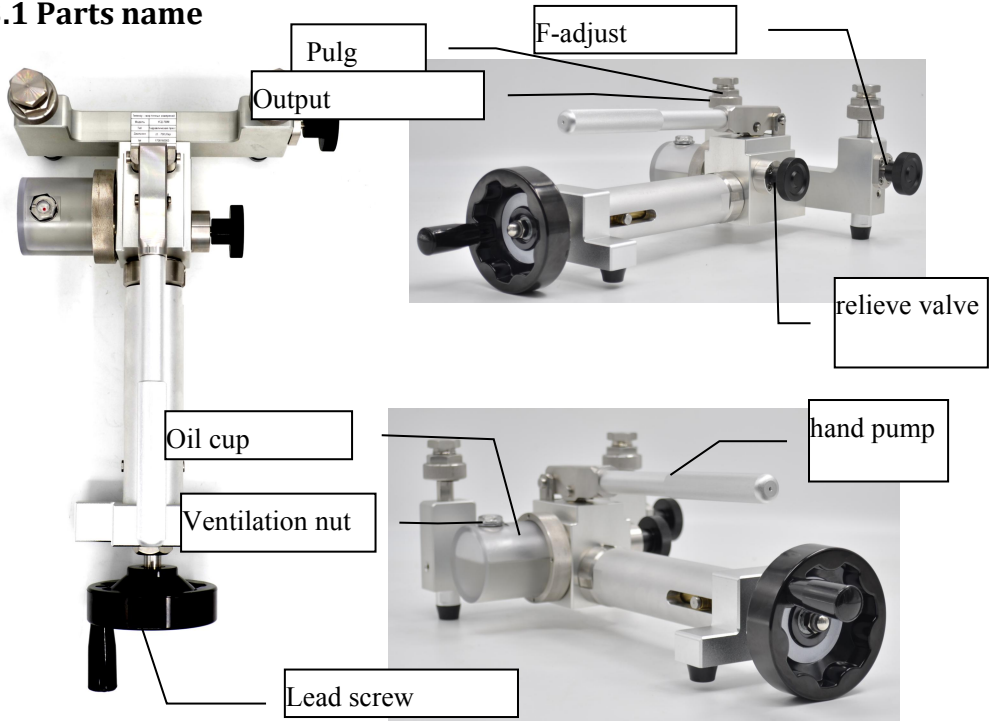
## 2. Summary

This products is HS705 Hydraulic comparator

HS705 Hydraulic comparator adopts advanced stainless steel and aluminum alloy special process.The lead screw design makes the high pressure operation more easy and save labor,the F-adjust valve adjust the exact pressure value.A detachable oil cup is easy to clean and maintenance,user could check the work medium timely from the transparent oil cover. Two standard pressure outputs are easy to connect gauges under test without using the wrenches.It widely calibrates pressure instruments in field and laboratory.

### 3.Components

#### 3.1 Parts name



#### 3.2Function

**Hand pump:** Generate pressure about (0~5)MPa by running the hand pump up and down repeatedly. Hand pump will realize pre-pressure function.

**Lead Screw :** Increase pressure by turning the lead screw clockwise, decrease pressure by turning the lead screw anti-clockwise. It can generate pressure (0~70)MPa.

**Relieve valve :** Have to close before pressure generation(clockwise). Slowly open it to relieve the pressure(anti-clockwise)

**F-adjust valve:** To realize the the fine adjustment of pressure value.(Turning in clockwise to increase pressure)

**Oil cup:** Store 25#transformer oil,turn the front cover anti-clockwise to change or fill oil.

**Plugs:** Tighten it up when not in use,it could prevent oil-leaking by blocking the output.

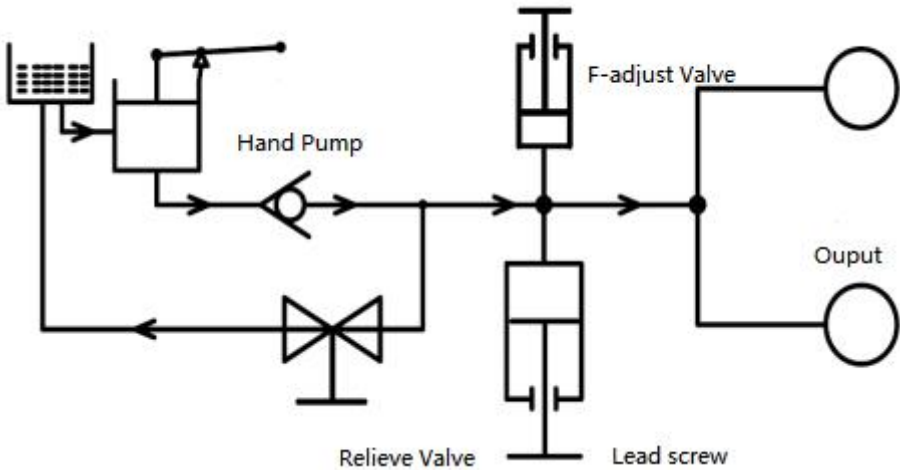
**Ventilation nut:**Unscrew the nut before use;tighten it up during storage and transport.

**Output :**There are two outputs.one is designed for standard gauge,the other for gauge under test.

## 4. Technical Specification

- **Generate Pressure range:** (0 ~ 70)MPa
- **Stability:** 0.05% F·S
- **Working medium:** 25# Transform Oil
- **Output interface connection:** 2-M20×1.5

## 5. Working principle



## 6. Operation

**For example(1):** Take pressure gauge 6MPa as example (Up and down loop)

- 1) Put HS705 on the level. Turn the relief valve anti-clockwise to open it, unscrew ventilation nut. Remove the plug of the outputs
- 2) connect the standard gauge and the gauge under test to the two outputs.
- 3) Set F-adjust valve to the mid position, and for lead screw, turn all the way out to the end.
- 4) Record 0bar record
- 5) Turn the hand pump up and down to pre-pressurize for the system, then rotate the lead screw to generate high pressure to each calibration points
- 6) Pre-pressureize value should under 5MPa, then get each calibration points by rotate lead screw in clockwise.



- 7) Loop process: Decrease pressure by turning lead screw anti-clockwise to make pressure down to each calibration points.
  - 8) Slowly open the relieve valve to realize the pressure down to each points.
  - 9) Finish the loop process and open the relieve valve to release the pressure.
- Record data, then remove the gauge under test  
( one loop finished )

**★Note**

Open the relieve valve , then turn the hand pump up and down, the air will come out from oil cup.

**Remarks:**

1. There must be no pressure in the system when removing pressure gauge.
2. Replace the O-rings regularly.
3. The wroking media of item is oil,please don't mix any other liquid.
4. Before start calibration work, should check the oil inside the cup not lower than filter.
5. Alcohol has a certain brittle effect on the oil cup. Do not use alcohol to wipe the transparent wall of the oil cup.

## 7.Troubleshooting

There may be some faults of HS705 methioned 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
Oil leakage	The O-ring seal is loose or damaged	Replace the O-rings
	There is large damage on the sealing faces of gauge under test	Check the sealing connector of gauge under test
Hand pump couldn't generate pressure	No enough medium in oil cup	Add medium
	The internal O-ring is damaged	Replace the O-ring
	The cavity of gauge under test too big	Replace the gauge under test
	Having air inside the equipment	Exhaust air multiple
The pressure is instability,the standard gauge depressurized quickly	Check the instrument to make sure there is no leakage of oil.Otherwise the O-ring is damaged or there is connection loosening	Replace O-ring, or reassemble Reconnect the equipment
	Pressurize without gauge under test.if the instrument	Replace standard gauge or gauge under test

	<p>doesn't leak pressure, this indicates gauge under test has problem. Otherwise there is problem with device or standard gauge. Check the standard gauge and device separately</p>	
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## 8. Maintenance

1. If this equipment will be in idle for a long time, please turn the lead screw clockwise till it could not move anymore, close relieve valve and put on the plugs. Provide pressure about 2bar by running the hand pump, then tighten the ventilation nut.

2. If HS705 needs to take a long distance transport, please put on all plugs to prevent leakage of oil. It is necessary to pack with specialized cartons and foam wrap.

3. The working medium is 25# transformer oil or any oil that can be used for calibrating gauges. Replace the work medium timely.

## 9. 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

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