

Test bench for safety valves

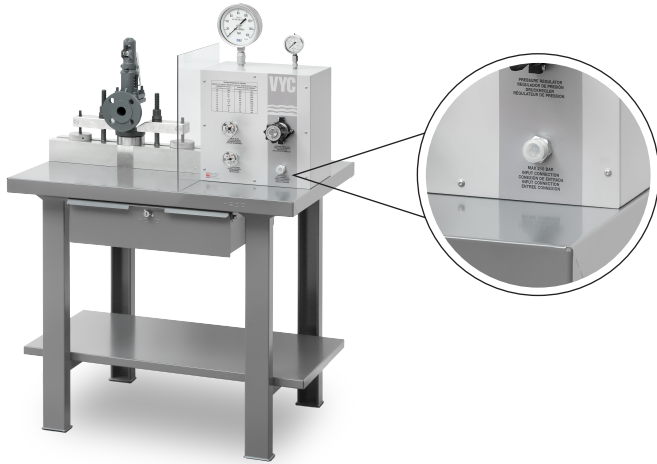
Model 000 | DN-8 to DN-125 NPS-1/4" to NPS-5" - Code 2002-000.0002



1. Installing the test bench

1.1.1. Connecting the compressed air / nitrogen source

The test stand is equipped with a threaded connector which enables the connection of a source of compressed air or nitrogen at high pressure. The bench test VC-40-VYC needs to be connected to a power supply. For HP-air / N2 maximum pressure must not exceed 210 bar / 3045 psi.



1.1.2- Maximum test pressure according to the size of the valve.

MAXIMUM TEST PRESSURE			
SIZE OF THE VALVE		MAXIMUM PERMISSIBLE PRESSURE	
DN	NPS	bar	psi
8	1/4"	200	2900
10	3/8"	200	2900
15	1/2"	200	2900
20	3/4"	200	2900
25	1"	200	2900
32	1 1/4"	200	2900
40	1 1/2"	190	2755
50	2"	120	1740
65	2 1/2"	70	1015
80	3"	45	653
100	4"	30	435
125	5"	18	261

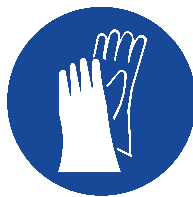
¡Attention! Do not untighten the flanges while there is pressure in the circuit

1.2. Conditions of the test area.

The test area must be clean, free of dust, dry and avoid direct exposure to sunlight, especially when testing with nitrogen. Ensure adequate ventilation. The temperature of the test area must range between 5 and 40 ° C.

1.2.1. Test area.

The test area must be an exclusive testing area. During high pressure tests, all unauthorized personnel should not be allowed to enter. During high pressure tests and / or whilst handling the test bench, operators have to use the appropriate PPE (Individual Protection Equipment);



1.3. Safety notes.

1.3.1. Authorized use.

The test bench is built according to the latest technology and current technical safety regulations. However, its misuse can cause injury to the operator or to third parties and equipment and authorised personnel surrounding the test area. The test should only be operated under perfectly safe conditions in accordance with current safety regulations, warnings of the dangers must be outlined around the testing area according to the instruction manual. In particular, any malfunction or damage sustained by the test bench could affect the safety of the equipment. Authorized use must be in accordance with the inspection and maintenance criteria mentioned in the manual.

1.3.2. Organizational measures.

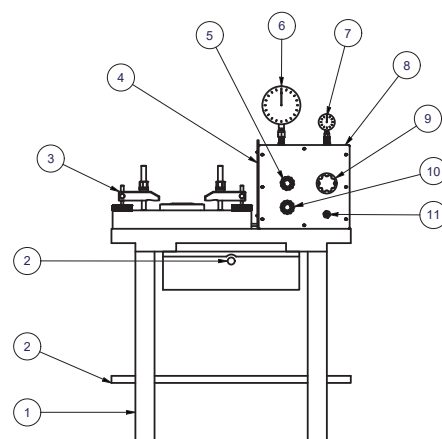
Store the instruction manual near the test bench. In addition to the instruction manual, verify and confirm that all current legal and other mandatory regulations regarding accident prevention and the environment are met. In addition to the manual, make a supplemental working instruction for all staff so they know how to operate it, list of authorized workers and maintenance record.

Authorized personnel must have read the instruction manual before they start using the equipment, especially the chapter that refers to safety. According to current legislation, all necessary protective equipment must be provided to ensure safety. Especially when high pressure tests are made, workers must use hearing protection. Even if no malfunction is detected, a thorough visual inspection of the equipment must be carried out. These inspections should be performed regularly, even if there is no sign of malfunction.

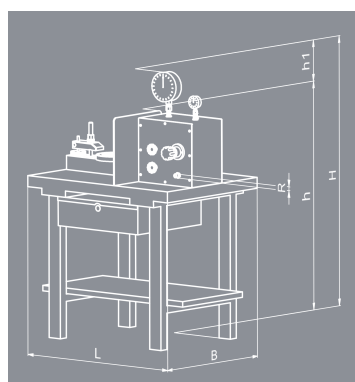
2. Description and characteristics of the portable test bench VC40-VYC.

Test bench for regular inspections and setting and resetting safety valves. Ideal for distributors, maintenance companies or with in-house maintenance. It allows safety valves to be adjusted, tested and/or checked to the test pressure (setting) P_e while cold (simulating service conditions), matching the opening pressure P_s and the closing pressure P_c , in accordance with the standard regulations.

Nº. PIECE	PIECE	
1	Work bench	
2	Lockable drawer and storage shelf for tools, gauges, instructions, etc.	
3	Mechanical clamps DN-8 to DN-125 NPS-¼" to NPS-5"	
4	Safety protector	
5	Shut-off needle valve PN-250/3625 psi as the escape valve	
6	Test gauges 0-16 bar / 232 psi cl. 0.5 and another of 0-160 bar / 2320 psi cl. 0.5	
7	Input gauge 0-250 bar / 3625 psi cl. 1.6	
8	Control box	
9	Pressure regulator valve 1.6-276 bar / 23-4000 psi	
10	Shut-off needle valve PN-250 / 3625 psi opening-closing test circuit	
11	Air or Nitrogen input connection. Maximum admitted pressure up to 200 bar / 3625 psi	
DN	10 to 125	
OPERATING CONDITIONS	TEST FLUID	Air or Nitrogen
	MAX. PERMISSIBLE PRESSURE	200 bar / 3625 psi



- Accurate and reliable.
- Very easy to use.
- Reduced and light design.
- Compact and robust construction.
- Materials carefully selected for resistance to wear, extreme temperatures and corrosion. They can be fully recycled.
- Reduced weight and size which facilitates storage.
- Easy installation.
- Minimum maintenance.
- All test benches are rigorously tested and verified.
- Bench finish: Paint RAL-7016.
- Attached to the test bench is the instruction manual in accordance with P.E.D 2014/68/EU as well as the appropriate software to issue the test certificate.



MODEL 000	
R	1/2"
CONNECTIONS	Whitworth gas-tight cylindrical male thread ISO 228/1 (DIN-259)
L	1000
B	750
H	1482
h	1256
h1	226
WEIGHT IN kgs.	120
CODE	2002-000.0002

3. Test procedure.

3.1. Before the test.

The portable test bench can be used in any enabled area that meets the requirements specified in paragraph 1.3.1. Before testing, you must be connected to a suitable source of pressure.

3.2. Clamping procedure.

Slide the two clamps and tighten the valve flange ensuring the correct positioning.

3.3. Testing a high-pressure safety valve.

Check that there is no pressure in the circuit, close the discharge valve and slowly open the inlet valve, use the regulator and locking valve until the desired pressure is achieved.

If any leaks are detected in the circuit, close the inlet valve and contact VYC Industrial, S.A.U.

After the test, close the inlet valve and open the relief valve until the gauge pressure is zero. Then release the clamps. Never loosen the clamps without ensuring that there is no pressure in the circuit.

4. Maintenance.

Read the "safety principles" before handling the test bench. Before handling the test bench VC-40-VYC, make sure the equipment the pressure input source is disconnected and ensure that there is no pressure in the circuit.

4.1. Once launched.

Check that the equipment does not leak after its first use and repeat the inspection within 24 hours. Visual inspections every 72 operating hours.

4.2. Periodic reviews.

Clean the equipment and check all the sealing elements after each test.

4.3. Circuit test pressure.

Screw a blanking plug in the outlet, tighten the clamps and pressurize the equipment. The pressure must remain constant in the time interval of one hour. Consider the influence of temperature in the possible pressure fluctuations.

4.4. Calibration gauge.

All pressure gauges Ø150mm EN 837-1 CL 0.5 must be calibrated at intervals not exceeding one year. Contact VYC Industrial, S.A.U. to perform the calibration.

In case of failure: before taking any action, stop the equipment and contact VYC Industrial, S.A.U

5. Risk analysis.

Description of risk	Measures applicable
Explosion or rupture of pressurized parts	<ul style="list-style-type: none">• Never exceed the maximum test pressure• Perform the maintenance indicated in the manual without exception• Keep the test bench clean and dry• Personnel must be properly trained before any test• Use your common sense
Injury to the feet caused by falling heavy items	<ul style="list-style-type: none">• Do not store material on the workbench• Use the PPE indicated in the manual• Use your common sense
Physical or equipment injury due to overturning and/or dropping of the test bench	<ul style="list-style-type: none">• Do not position the test bench in slopes higher than 5%• Use your common sense
Physical injury due to overexertion	<ul style="list-style-type: none">• Use lifting equipment for heavy material• Keep the work area in an orderly and ergonomic manner• Use your common sense
Generalized physical injuries	<ul style="list-style-type: none">• Use the PPE indicated in the manual• Use your common sense

6. Declaration of conformity.

The VC-40-VYC test bench has been designed to meet the health and safety requirements by applying the following directives:

(2006/42/EC) Machinery directive
(2014/68/EU) Pressure equipment

Any modification made to the VC-40-VYC test bench without the corresponding authorization by VYC Industrial, S.A.U. will invalidate this declaration of conformity.