

BDP-01ITB

Impulse Test Bench

Description

The BDP-01ITB Impulse Test Bench is designed and manufactured to test flexible pipes/hoses with different shapes and sizes through stress, according to the specifications of the most important manufacturers and the following regulations:

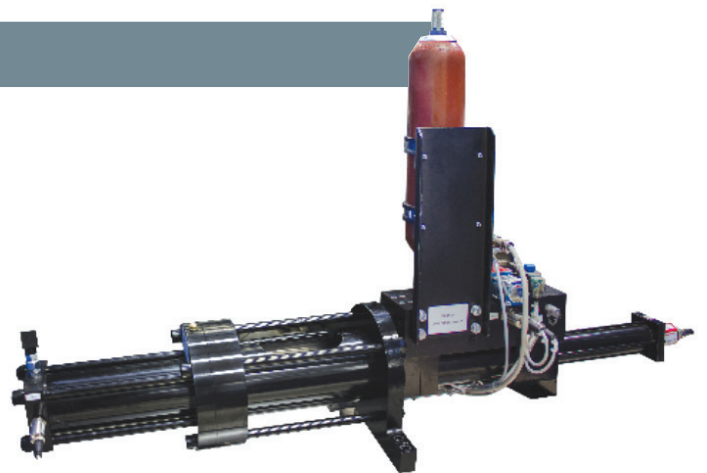
- Square wave impulse:
ISO 6803 e SAE J343
- Sinusoidal wave impulse
- Free programmable waves
up to 30 different points



Technical specification

Main Components:
Hydraulic profile generator for the following pressure profiles:

- Maximum test pressure: 300 bar
- Minimum test pressure: 1 bar
- Minimum pulse displacement: 18 cm³
- Maximum pulse displacement: 210 cm³
- Maximum oil temperature: +180°C
- Minimum oil temperature: -40°C
- Maximum test frequency: 1.6 Hz
- Minimum test frequency: 0.05 Hz



Impulse Test Bench

Climatic chamber to generate the temperature profiles below:

- Maximum temperature: +180°C
- Minimum temperature: -40°C
- Maximum thermal gradient: 1 °C/min

Manifolds on which can be installed the test pipes:

- Number of simultaneous pipes: 12
- Maximum radius of curvature: 350 mm

Hydraulic oil

- Up to 3 different type of oil circuit

Power supply

- Electric: 400V, 50Hz, three-phase (60kVA required)
- Hydraulic: industrial cooling water 10m³/h
- Pneumatic: dry air 6 bar

Safety devices

- Interlocks avoid to run the test with open doors;
- Safety lock to not allow to open the door when the machine is running;
- Emergency push button both on impulse test bench and hydraulic power unit skid;
- Automatic interruption of the test in case of breakage, loss of the component or test bench malfunction;
- CO₂ Fire extinguisher system, in test chamber

Size and weight

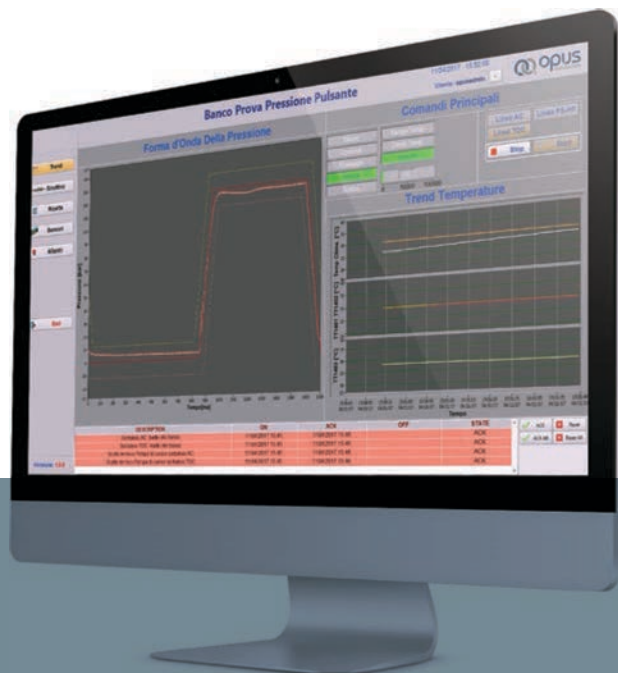
- Depending on the configuration



The **BDP-01ITB** Impulse Test Bench is equipped with an industrial PC and a National Instrument® data acquisition system. The software, developed by **opus automazione**, allows to set the test parameters and generate the test report.

The software is able to:

- Set up the waveform for each test
- Program the test parameters
- Set up the number of cycles with automatic stop
- Set up the temperature and thermal cycles
- Record all test data
- Issue the test reports
- Manage the scheduled maintenance according to the number of performed cycles and/or hours of machine functioning
- Automatic stop of the test for fluid leakages, component failures, wrong cycles or high temperature



By internet connection it is possible to receive:

- E-mail messages of events which can be scheduled, such as: machine down; number of test cycles reached (total or partial); detailed alarm and warnings
- Remote assistance service

Example of test report

The picture on the left shows the main dialogue window. The operator can control the main physical characteristics, such as: temperature, pressure rate, number of cycles, etc. Furthermore, the graphic shows how the pressure profile matches the acceptance range.

Option

- Air extractor to decrease the waiting time between two tests
- Remote control and diagnostic tool

Suggested oil

The impulse test bench needs about 50 liters of hydraulic oil for each circuit. It's possible to use the most common hydraulics oils. We recommend to verify the suitability of the oil with the test temperature.



Hydraulic circuit

	1	2	3	
Tank				[bar]
Max. pressure				[bar]
Min. pressure				[°C]
Max. temperature				[°C]
Min. temperature				[Hz]
Max. frequency				[Hz]
Min. frequency				



Climatic chamber

Max. temperature	[°C]
Min. temperature	[°C]
Max. thermal gradient	[°C/min]
N. of pipes under test	Choice up to 12 [-]



Hydraulic and pneumatic power supply

Cooling water Flow	[l/min]
Cooling water Temperature	[°C]
Air pressure	[bar]



Environment
Process Automation
TestBench
Turbomachinery



UNI EN ISO 9001:2015
UNI EN ISO 14001:2015
UNI ISO 45001:2018

Systems & Diagnostics Engineering



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