

LOAD TEST PILE KIT

Configurable hydraulic system for static load tests on piles foundation



Static load tests are conducted to assess the pole's vertical drops as a result of the load test. This type of test is mandatory on a number of poles equal to the 1% of the total number of poles, with a minimum of 2.

The static load tests on foundation piles are classified into:

- Test projects;
- Evidence of testing or verification during construction.

Project tests are performed on pilot poles, equal for geometry and construction technology. The test, classified as destructive, involves an axial load that leads to rupture the complex pole - soil or it allows significant diagrams of failure of the head of the pole as a function load-time. The verification tests shall be performed mainly to control the correct execution and behaviour of the load. The axial load will therefore

be equal to 1.5 times the load project.

The system includes a hydraulic pressurization unit, connection hoses, ram cylinder, swivel head. The system is configurable depending on customer's needs, on the kind of test, on the load to reach and on the ease of transport. The pressurization system may be manual, with a control hydraulic triphase power unit or with an internal combustion engine.

All units can handle different pressurization cylinders through systems of fitting. The thruster cylinders are made of aluminium to allow a better handling in the worksite. The configuration of the cylinder provides the assembly of leveling heads in order to improve the adhesion of the jacks on the pole and on the contrast structure.

The component also allows the submission of the jack on peak loads that may prove a malfunction.

The system is composed of flow control valves, flexibles with quick release couplings and a pressure reading gauge. The gauge is available in both analog and digital version.

TECHNICAL FEATURES

According to the specifications required by the test kit for hydraulic load test on pilings, can be composed of one or more cylinders available with the following characteristics:

- Hydraulic cylinder – High tonnage cylinders, oil return
- Capacity 100/150/200/300 TON capacity,
- stroke 100mm/150mm

Cylinders with special features can be produced according to customer specifications.

The pressurization units designed specifically for this type of test may be two-stage pumps with tanks from 2.3 – 4.3 to 7.8 liters with shut-off valve that eliminates stress on the lever due to stage 1, 4-way valve double-acting

cylinders with high approach and ran large oil capacity.

For systems with multiple cylinders, hand pumps are recommended with two-stage valve that allows automatic switching from 1 to stage 2 and the attainment of maximum pressure with an effort at the lever content.

These models are equipped with:

- Safety valve
- Carrying handles
- Attack by 1/2 "BSP for the gauge

Available with 10 or 20 liter tanks and control valves 3 way, 4-way and 4-way check valve driven.

Ideal in all applications where the need for a greater economy and freedom of use compared to electrical or pneumatic control units at the same time it also requires a range and an ability more important than hand pumps above.

Other components of the system:

- One-way flow control valve to fine tune
- N.1 NVT02B high precision digital pressure gauge 0-700bar with indication of min/max pressure peak, storage of selectable values and measurement units (psi, MPa, kPa, bar, mbar), accuracy 0,20% F.S. (*);
- Hose maximum working pressure 1000bar, burst-fitting 2800bar
- Oscillating head
- Couplers and protective caps for joints

IMPORTANT:

Some essential information is necessary to choose the correct pump:

- Reservoir capacity
- Cylinder plunger speed

After having selected the most suitable cylinder and determined the oil volume required for the stroke, it is now necessary to choose the most suitable pump based upon the required oil volume.

Finally, the quantity of oil needed to fill the flexible hoses

ACCESSORIES

The standard kits are made up as follows:

PILE TEST KIT - 1 CYLINDER

- No.1 cylinder – Manual pump or Hydraulic Control Unit
- No.1 Double-acting hydraulic cylinder
- No.1 Leveling head
- No.1 Manual pump – 700 bar (or Hydraulic Control Unit)
- No.1 NVT02B high precision digital pressure gauge 0-700bar with peak pressure indication, complete with calibration report (Accredia ref.) (*)
- No.1 Unidirectional flow control valve

- Flexible high pressure, adapters and fittings

PILE TEST KIT - 2 CYLINDERS

- No.2 cylinders – Manual pump or Hydraulic Control Unit
- No.2 Double-acting hydraulic cylinder
- No.2 Leveling head
- No.1 Manual pump – 700 bar (or Hydraulic Control Unit)
- No.1 Digital pressure gauge 0-700bar
- No.1 Unidirectional flow control valve
- Flexible high pressure, adapters and fittings

Possible configurations:

- PILE TEST KIT WITH 1/2/3/4 CYLINDERS – MANUAL PUMP / HYDRAULIC PUMP