

ABSTRACT

SYSTEM AND METHOD FOR PERFORMING TEST ON MECHANICAL

COMPONENTS

According to embodiments of the invention a system and method for performing test on
5 mechanical components is disclosed. The disclosed system includes at least one module for
selecting type of test from a plurality of tests, at least one module checking the status of test
being performed and at least one module for setting warning point. The system may further
include an optional module to activate or deactivate alarm.

Claims:

1. A system for performing test on mechanical components by a hydraulic test bench, the method comprising:

5 at least one module for selecting at least one test from a plurality of tests that the hydraulic test bench is capable of performing;

at least one module for checking the status of test being performed, the module being activated, once a test is selected; and

at least one module for setting a warning point for any warning condition during the test.

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2. The system as claimed in claim 1, wherein test includes Internal Leakage Test, Packing Drag Test, Endurance Test, load/Proof test, Cap End Middle Point Test, Rod End Middle Point Test, Cap End Test, Rod Point Test.

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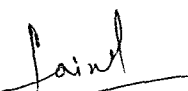
3. The system as claimed in claim 1, wherein module for selecting at least one test further comprises sub modules for providing inputs for the selected test and for retrieving the output of the selected test.

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4. The system as claimed in claim 1, wherein module for setting a warning point automatically stops hydraulic test bench on detection of a warning condition.

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FIELD OF INVENTION

The invention generally relates to a system and method for performing test on mechanical components and more particularly to system and method for performing test on hydraulic
5 cylinders.

BACKGROUND

Hydraulic cylinders are widely used in various industrial products and equipment's such as in
10 construction equipment, manufacturing machinery, automobiles etc. It is normal practice to test such components under simulated working conditions. These tests may be for a new product or a repaired to ensure that they meet the rated specifications. The hydraulic cylinders may be tested on a test bench. Test bench is typical arrangement for conduction predefined test on a hydraulic cylinder under simulated working conditions. Typically a test
15 bench may have an arrangement for holding the cylinder, a hydraulic actuator, a motor to drive the actuator, an arrangement for supplying fluid to the cylinder and arrangement for performing one or more predefined test such as Internal leakage test, Stroke length measurement test etc.

20 These test benches commonly have robust built and have various exposed components. Moreover such benches typically have a lot of complex control systems and various different modules to perform and conduct test. Complex modules render a requirement for complex training the manpower before they can operate such machines beside that only skilled labour can operate such machines. Furthermore the operator has to typically take data from different

gauges and process the collected data to get the final result. The present invention is directed to overcoming one or more of the problems as set forth above.

SUMMARY OF THE INVENTION

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According to embodiments of the invention a system and method for performing test on mechanical components is disclosed. The disclosed system includes at least one module for selecting type of test from a plurality of tests, at least one module checking the status of test being performed and at least one module for setting warning point. The system may further include an optional module to activate or deactivate alarm.

BRIEF DESCRIPTION OF DRAWINGS

Other objects, features, and advantages of the invention will be apparent from the following description when read with reference to the accompanying drawing:

Figure 1 illustrates a block diagram of the system for performing test on mechanical components according to an embodiment of the invention.

DETAILED DESCRIPTION OF DRAWINGS

Figure 1 illustrates a block diagram of the system 100 for performing test on mechanical components according to an embodiment of the invention. As illustrated, the system 100 includes at least one test selection module 102 for selecting type of test from a plurality of tests. According to an embodiment, the test may be related to testing of hydraulic cylinders

such as, but not limited to, Internal Leakage Test, Packing Drag Test, Endurance Test, load/Proof test etc. According to another embodiment, the test selection module 102 may have sub modules for conducting one or more test. According to yet another embodiment, the one or more sub test selection module may further have one or more sub-sub modules for conducting one or more test. Such as the internal leakage test sub module may have sub-sub modules for Cap End Middle Point Test, Rod End Middle Point Test, Cap End Test, Rod Point Test etc.

The system 100 may further include at least one status module 104 for providing specific inputs for the selected test and for retrieving the output of the selected test. According to an embodiment, the status module 104 may have one or more sub modules such as, but not limited to input module and output module. The input module may be used to define the specific inputs as required by a specific test. According to exemplary embodiments, a user may select the type of test from the test selection module 102, followed by providing test related inputs using sub module. According to specific test requirements, the system may validate the input information as per pre-requisite requirements stored in the system with regard to specific test and may request to provide/validate further information. The output module may be used to retrieve information/test results for the selected test, once the test is completed. According to an exemplary embodiment, the user may retrieve partial test results using output module, while the test is being performed.

The system 100 may further include at least one warning point setting module 106 for defining the conditions to generate warning signals and for defining the conditions to automatically stop the test. According to another embodiment, the warning point setting module 106 may have sub modules for Internal Leakage Test, Packing Drag Test, Endurance

Test, load/Proof test etc. According to yet another embodiment, the warning conditions may be defined by the users. According to yet another embodiment, the warning conditions may be pre-defined as per specific tests. According yet another embodiment, the user may further configure the pre-stored test conditions.

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The system 100 may further include at least one or more optional module such as but not limited to, alarm activation and deactivation module, manual module etc.

It is understood that the above description is intended to be illustrative, and not restrictive. It is intended to cover all alternatives, modifications and equivalents as may be included within the spirit and scope of the invention as defined in the appended claims. Many other embodiments will be apparent to those of skill in the art upon reviewing the above description. The scope of the invention should, therefore, be determined with reference to the appended claims, along with the full scope of equivalents to which such claims are entitled.

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ORIGINAL

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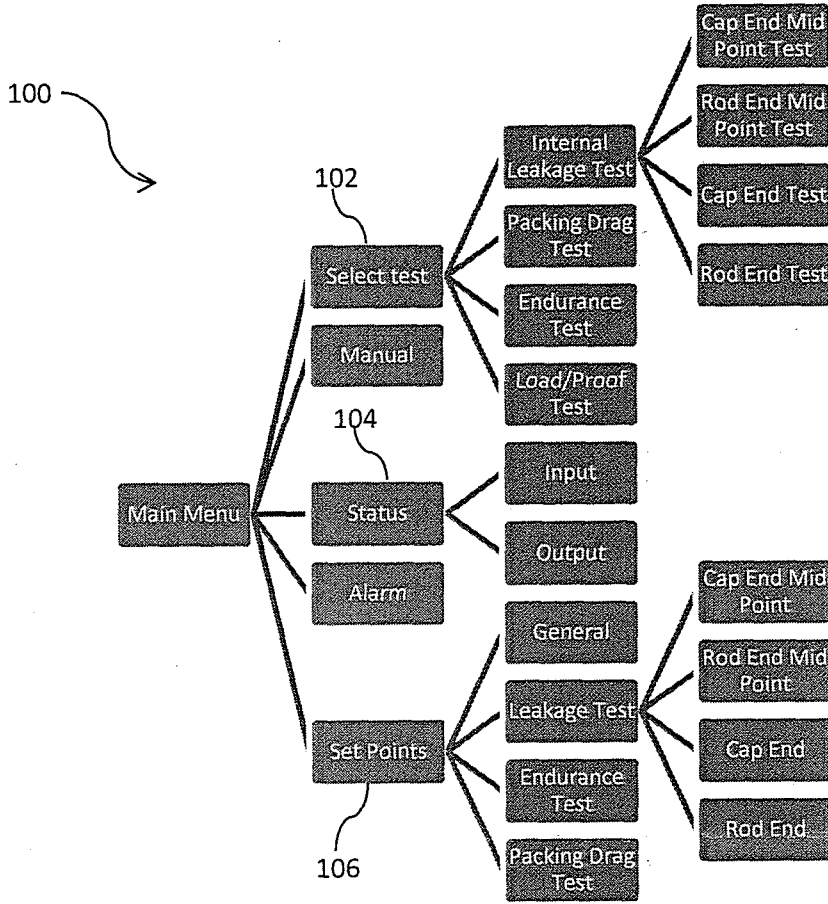


Figure 1

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