



Welcome to **YASTRONICS LABORATORY FOR CALIBRATION AND TESTING**

Yastronics Laboratory is a fully fledged Calibration and Inspection Laboratory located in Riyadh, Kingdom of Saudi Arabia. The Company vision to play a major role in the continuous development of the country by providing quality calibration and Inspection services to various industries.

Our highly experienced and competent employees are committed to delivering Reliable calibration and Inspection services and providing you the highest level of customer satisfaction.

Maintaining High quality reference equipment traceable to international standards.

Providing accurate and unbiased calibration results in accordance with the requirement of National /International standards.

Electronics Components Co. Ltd. (Yastronics) is dedicated to the pursuit of excellence in the field of exporting good quality Calibration division. All of our products are tested and certified. We have years of experience and expertise and make sure all our products meet the needs of our customers and clients. We are equipped with the most reliable and sophisticated world-class equipment that is used to test these products at every stage until delivery. We are a SASO approved /ISO 17025 accredited calibration company in Saudi Arabia.

Choosing us is the best idea as you will get the best products in bulk from our company. Our products are extremely reasonable in price. We are the best Traceable calibration company in Saudi Arabia.

Our Advantages

Fast Turn Around Time.

Prompt & Reliable Calibration.

High Accurcay Reference Equipments Traceable To International Standards.

Our Vision

To be the leader in providing high quality calibration services for the various industries in the Kingdom of Saudi Arabia and its neighboring countries.

Our Mission

It is the policy of **YASTRONICS LABORATORY** to conduct its business in a manner which demonstrate technical competence and reliability while continuously improving and providing reliable calibration services for the laboratory's clients.



WHAT IS A PROOF LOAD TEST?

When handling heavy structures or lifting and rigging equipment, you need to make sure that they can handle the weight of the loads you put on them. To avoid disasters, breakdowns, and accidents, a proof load test is exactly what you need, and it is what almost all factories and companies who handle this kind of equipment do. What exactly is a proof load test? Let's find out.

The proof load test, in its simplest form, is adding heavy loads to lifting or rigging machinery or load-bearing structures to see how much they can hold without issue. In turn, this checks just how efficient and strong the equipment or structure is. Once you do the test, you will have a good idea of the capacity, as well as the tensile strength of your machine or structure.

This process is supervised and controlled, with the specific load weight determined and added for a specific interval of time. Once you get this done and your machine or structure passes the test, you will be relieved to know that your equipment is 100% safe.

What Is The Proof Load Test Performed on?

Usually, the proof load test is performed on heavy lifting machinery and rigs with wires and carrying capacity, such as:

- Forklifts
- Web Slings
- Overhead Cranes
- Manual Lever Hoists
- Trolleys
- Chain Blocks
- Suspension Equipment
- Telehandlers
- Lifts
- Hooks
- Supporting Runways
- Compression Hardware

The proof load test is often done using Crane scale or dynamometers or hydraulic cylinders with load cells. The force exerted on the structure or machine is usually 1.1 to 1.5 times the load of the measurement system. Along with the dynamometer or load cells, sometimes water bags are used to up the weight being tested for the machine.



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Paid Up Capital SR. 1.200.000 - C.C. No: 85654

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راس المال المدفوع ١,٢٠٠,٠٠٠ رقم العضوية: ٨٥٦٥٤





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What Is the Working Load Limit?

The working load limit is what is added to the machine during the proof load test. It refers to the maximum weight or load that you can put on a piece of equipment before it breaks or fails. Other names for the working load limit are Maximum Allowable Working Load (MAWL), Safe Working Load (SWL), Normal Working Load (NWL), or Working Load Limit (WLL).

The working load limit shows you just how safe a piece of equipment can be and how far it can go beyond its breaking point. Knowing when a piece of machinery will fail is key to making it better and knowing when to stop using it and replacing it down the line. Finding the machine's breaking strength is the key here, which is quite interesting as you want the machine to break in this case to know when it does.

In simple terms, this is sort of like the “good until” or expiry date label on food. It shows you how far or how long you can use this equipment beyond its breaking point and how safe it is in that period. In this case, the engineers will use the hydraulic cylinders to generate a fixed force that they observe over a period of time to see if the machine will function the same, keep its shape, and do an overall performance check.

The Standards of The Proof Load Test

The proof load test must follow specific standards. There are American ones and European ones. In America, the proof load tests follow the guidelines set by the Occupational Safety and Health Administration (OSHA), The American Society of Mechanical Engineers (ASME), or the American National Standards Institute (ANSI). However, the most important one is the OSHA. Some of these standards include:

- ASME B30.9: on lifting slings
- ASME B30.10-1.7: on hooks
- ASME B30.16: on overhead hoists
- ASME B30.17: on overhead and gantry cranes and trolleys
- ASME B30.20: various below-the-hook lifting devices
- ASME B30.20: for manual lever hoists
- ASME B30.26: for various lifting accessories: shackles, eyebolts, turnbuckles, links, rings, swivels, and compression hardware.

As for the European standards, the manufacturers themselves conduct them by their own guidelines and procedures.



Why Is The Proof Load Test Conducted?

Other than the six or twelve months for lifting equipment, proof load tests can be conducted on machines or structures before they are even put to work. The standards set by the Authority and other bodies are there to reduce workplace accidents to a minimum, for both employees and civilians. A lifting machinery accident can result in extreme injuries or even death. Thus, it falls on the employers' shoulders to conduct these tests and make sure their equipment is in top condition, protecting the lives of their employees in the process.

The proof load test could also save a large sum of money. By making sure the new equipment works flawlessly, employers will not need to spend large sums of cash on repairs and maintenance in the future if they were faulty or broken down too fast. With maximum efficiency, the work itself will be at its finest, too.

What Types of Lifting Equipment Require a Proof Load Test?

Lifting equipment is designed and manufactured in accordance with a International, or Manufacturer (OEM) Standard. All of the relevant Standard requires lifting equipment to be tested to verify and certify the Working Load Limit (WLL) or Safe Working Load (SWL). All lifting equipment has to be tested at some point during the design, manufacturing, installation process, or for any other reason given by a competent person or to ensure compliance with international standards.

- Chain Block
- Eyebolts and Lifting Points
- Lifting Chains
- Mobile Crane
- Excavators
- Overhead Gantry Crane
- Gantry Frame
- Lift Shaft Beam
- Lifting Chains
- Runway Beam
- Eyebolts and Lifting Points
- Mobile Crane
- Excavators
- Lift Shaft Beam
- Runway Beam
- Pallet Racking System.

- Forklift Truck



- Hoists
- Telescopic Handler
- Jacks, Toe Jacks, and Trolley Jacks
- Jib Cranes
- Lifting Equipment
- Vehicle lifts
- Lifting tackle
- Webbing Slings
- Lorry loaders , Winch ,Mobile Access Platforms, Scissor Lifts, and Booms

Pallet Racking System :

There are no specific Government standards laid down for the manufacture and/or installation of pallet racking. Each manufacturer designs and produces their own system based on their manufacturing capability, design standards and patents.

Racking Manufacturer Institute gives the SWL per pallet racking system as per their design so it must be followed during the inspection and load test.

HSE Authorities recommend that a rack inspection should be carried at least once a year.

The different components that should be looked include (but are not limited to):

Condition of stored pallets and loads. Determine if loads have been placed properly on the pallets, and that the pallets placed properly on the beams. In areas with a higher risk of seismic activity, it may be necessary to restrain or contain the product on the pallets as an additional precaution. Also, look for uniform load distribution to ensure the maximum load weight has not been exceeded.

Rack anchorage. Verify that the correct number and location of anchors are in each base plate (both aisle and rear column) and evaluate the condition of the anchors themselves. Ensure that anchors are intact (not broken off or pulled out of the floor) and that the nuts on the anchor bolts are snug-tight.

Column base plates. Inspect the joint where the column upright is welded to the base plate to ensure the two are attached securely.

Columns. Determine if the column's section has been distorted or bent from being impacted, particularly those facing the aisle or at the end of a row or a tunnel, where forklift collisions are more likely to occur. If in place, check the condition of free-standing or directly attached column guarding to confirm its reliability.

Frame bracing. Inspect any horizontal or diagonal bracing used within the rack uprights for damage from impacts.



Shelf beams and connections. Verify that beams are seated, and that beam connection locking devices are in place and secured properly. Look for excessive deflection due to overloading or point loads as opposed to uniformly distributed loads. Make sure the shelf beams are straight and have not been bent due to cross-aisle handling equipment impacts, particularly the lowest level but may also happen at upper levels.

Wire decks. Confirm that any decking structures are intact, with no damage to reinforcement channels or wire mesh, as well as that each piece of decking is firmly seated in place.

Pallet safety bars. Determine whether all barriers and netting—installed to prevent products from falling to the ground from their elevated storage position—are in their proper place and securely fastened to the frame and/or shelf beams.

Accessories. Evaluate any other accessories that may have been added to the rack, including protective devices. Should any damage or other unsafe condition be discovered, the racking should be immediately unloaded and repaired under the guidance of a qualified, professional rack engineer to assess the rack's condition and oversee the ultimate repair or replacement.

Conducting Load test – Apply the load capacity on the identified Racks equally within racks surface dimensions of Area.

Selection of racks to load test by randomly 30% of maximum consisting of racks in each level.

Prepared By : Laboratory in-charge/ QC

Approved By : General Manager

For Contact : calibration@yastronics.net , Mobile : 0502405483 .

*****Nothing Follows*****