

ATLAS II CC
Part 1/2
Safety and installation instructions
Rev1.1



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WARNING

Materials testing involves inherent risks due to the high forces, rapid movements, and stored energy involved. You must exercise extreme caution during testing, allow only trained operators to use the testing system, and take every precaution to avoid injury. Ignorance of the testing system can lead to unexpected actions of the frame resulting in possible injury and damage.

Atlas frames should not be used beyond the maximum capacity. The application of force in excess of the load cell capacity can damage the measuring system and mechanical equipment. The measuring console will go into a "safety" mode blocking if the capacity has been exceeded 10 times. You will then have to return your load cell to ANDILOG Technologies to check that it is working properly. It is important that the measured values are less than 90% of the sensor capacity. Constantly using the sensor beyond 90% of its capacity can cause premature wear of the sensor.

Atlas racks are heavy. Moving the rack without proper procedures could result in personal injury (e.g., muscle strain and back pain) or damage to the rack. When lifting the rack, take precautions to avoid injury. Moving and positioning the Atlas Frame should only be done by qualified personnel.

Atlas racks must not be used in potentially explosive atmospheres

WARRANTY CONDITIONS AND EXCLUSIONS

The system is guaranteed for 12 months. The warranty is limited to the replacement of defective parts. The warranty does not apply to support material, components damaged by testing or unintended use of the system, assembly errors or possible deformation due to a fall.

Refer to your system's operating instructions for more information.

**CERTIFICATE OF CONFORMITY
EC DECLARATION OF CONFORMITY**

*We, ANDILOG TECHNOLOGIES,
Immeuble Les Bouleaux, ZI la Couperigne, 13127 Vitrolles, France
hereby declare that the product*

**Computer Controlled and Motorized Test Stands:
ATLAS II 10 CC, ATLAS II 20 CC, ATLAS II 50 CC**

*Meets the requirements of the :
Are in conformity with the essential requirements of the council directives:*

MACHINERY DIRECTIVE 2006/42/EEC and EMC DIRECTIVE 2004/108/EEC

Harmonized standards applied:

EN ISO 12100: 2010

*And declares that Mrs Mireille DESEVRE, being resident in Bouc-Bel-Air (F-13127),
ph:+33442348340, has been empowered to make up the technical file which is available at
the promises of the firm.*

To do and worth what is right.
Declaration issues date: 22th March 2016



Mireille Desevré
Gérante / Managing Director

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| Review | Date | Description |
|---------|------------|--------------------|
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1. Introduction

This manual provides information on:

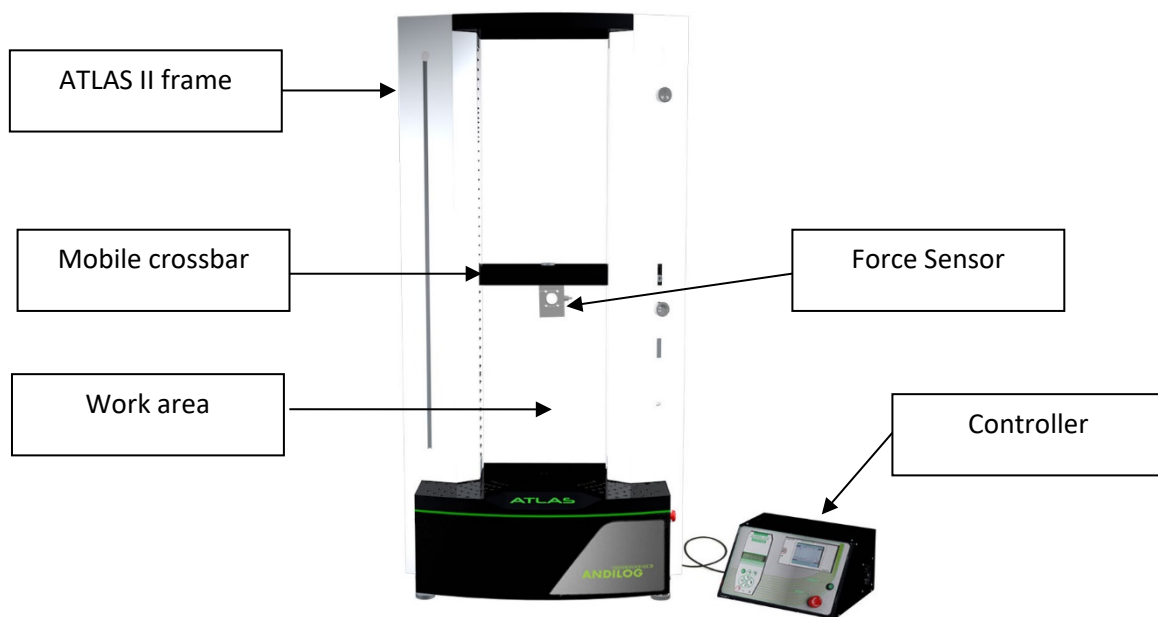
- System specifications that are necessary for the installation of your test system, e.g. required environmental conditions, system weight and dimensions
- Handling operation (lifting and moving) of your system to its final location
- Installation of system components
- Maintenance operations

Refer to the user's manual for information about the:

- System configuration and setup before starting tests
- Instructions for testing and execution

1.1. Description and Terminology

General view of the system (without the "safety enclosure" protector) :



Controller (DriveTouch): Equipment connected to the frame, it is the main interface to control the frame. It includes the "drivepack" control console and the "centor touch" measurement acquisition console. The controller also communicates with the computer and CALIFORT software.

Working area: The test area is located under the moving crossbar. Never place objects or tools on the moving crossbar or on the top crossbar; there is a risk of crushing and/or falling.

1.2. Safety instruction

1.2.1. General safety precautions










The ATLAS II test system is potentially dangerous.




Conducting materials testing involves inherent risks due to the high force capabilities inherent in testing, rapid movements, and stored energy. You must be aware of all moving and operating components in the test system that are potentially hazardous, especially the drive train and moving crosshead components.

Due to the wide range of applications in which our instruments are used and over which ANDILOG Technologies has no control, additional protective devices may be necessary in order to prevent possible accidents or hazardous situations.

1.2.2. Signs and warnings

Here is a summary of the warnings and notices that may be affixed to the equipment, please take note of them. Additional precautions for use are also provided throughout the manuals of your system.

| | |
|---|---|
|  | Risk of crushing - The central crosspiece is mobile |
|  | Cutting risk - The sample holders and grips close mechanically |
|  | Splash hazard - Debris from the test specimens may be splashed during and after testing and/or if improperly attached |
|  | Risk of crushing - Ensure that no machine controls can be operated during test preparation |
|  | Risk of crushing - When the automated control system is disconnected, the manual control system is active - please ensure that the test configuration is safe. |
|  | Crush hazard - Be sure to position the mechanical stops (high and low) correctly before use to limit the risk of a hazardous event. |
|  | Positioning and Leveling Tipping Hazard - The system must be positioned on a firm, stable and level surface. Adjustable feet should be used to ensure proper positioning. |
|  | Rotating parts hazard - be sure to disconnect equipment from the power supply before accessing internal components (motor, ball screws, etc.) |
|  | Electrical hazard - protect cables from hazardous events and unexpected disconnection. |

| | |
|---|--|
|  | Electrical hazard - Take care not to expose the system to liquids or to an inappropriate humid atmosphere. |
|  | Electrical hazard - only authorized personnel may open the covers |
|  | Hazardous event - Press the emergency button in case of a hazardous or dangerous situation. |

1.2.3. User training

Operating personnel must read and understand the operating instructions before using the equipment. We recommend that the operator create internal instructional documentation for safety and operation.

1.2.4. Qualified person

Qualified operating personnel are persons who are familiar with the installation, assembly, commissioning and operation of the product and who have the corresponding qualifications. This includes persons who meet at least one of the following three conditions:

- is familiar with the safety concepts of automation technology and has mastered them as a project manager.
- Operator of the automation facilities and trained to use the facilities. Knows how to use the devices and technologies described in this document.
- person responsible for commissioning or maintenance, who is trained to repair automation systems. person authorized to commission, ground and mark electrical circuits and devices in accordance with safety technology standards

In addition, the relevant regulations and safety instructions must be observed in each individual case. This also applies to the use of accessories. The ATLAS II measuring system may only be operated by qualified personnel in accordance with the technical data and safety instructions.

1.2.5. User protection

You must wear safety glasses and body protection, when conducting destructive tests and/or sources of projections.

A risk assessment should be performed before using the system.

2. Requirements and Specifications

2.1. Client's responsibilities

It is the customer's responsibility to ensure that all technical services are available and that all necessary checks have been performed prior to installation of the test system. An overview of these services and checks is provided below.

2.1.1. Site preparation

Proper site preparation is essential for the test system to perform to its specifications and provide accurate results for the tests performed. The customer must ensure that the site requirements are met before scheduling a system installation.

2.1.2. Handling and moving

It is the customer's responsibility to unload, unpack and move the test system to its final location on site. For details on handling and moving your system to its final location, refer to the moving instructions later in this manual.

It is the customer's responsibility to provide slings and lifting rings. The slings and lifting rings must comply with local codes and regulations and be properly sized to support the weight of the load frame. Guidance on weights and thread sizes can be found in this manual.

2.1.3. Insurance and security

Under a standard Andilog contract, the shipping terms are Ex-Works (or free on board ex works), which means that ownership and responsibility for the test system is transferred to the customer at the Andilog loading dock. Unless other shipping terms are specified in the purchase order, and are not challenged by Andilog, Ex-Works shipping terms apply.

In accordance with these terms, it is the customer's responsibility to purchase the applicable shipping insurance and to arrange for secure transportation to the final destination. It is possible to arrange with Andilog to purchase insurance coverage and arrange for shipment at the customer's expense.

In the event that the load rack is moved to your own premises, it is your responsibility to ensure that this is done in a safe manner.

2.2. Andilog's responsibilities in case of installation

The standard Andilog contract requires Andilog to provide the services necessary to ensure that your testing system is functioning properly. Below is a description of these services.

You may negotiate additional services and equipment with Andilog, but these must be agreed upon by both parties and specifically described in your purchase order.

2.2.1. Installation

Once the site is ready and all components are on site, Andilog is responsible for the complete installation of the load rack, its components and any additional accessories that may have been purchased.

2.2.2. First start-up

Once the installation process is complete, Andilog can perform an initial commissioning of the load rack and verification to ensure that it is functioning properly and making accurate measurements. Andilog also makes a short presentation to the customer to show them how the system works.

2.2.3. Documentation

Andilog provides all the necessary documentation for the operation of the system, including the manuals for the frame and the required software.

2.3. Environmental conditions of use of the equipment

- Operating temperature : 0 to 35° C
- Storage temperature: -20 to 45° C
- Relative humidity: 5% to 95%, non-condensing
- Maximum altitude of use : 3 000 m

2.4. Dimensions and weight

In the following tables you will find the dimensions of the different Atlas models. With and without packaging for shipping. If you are moving the load rack from the loading dock to its final location on site before unpacking the system, use these dimensions to ensure that the rack will fit through all doors and aisles.

Frame dimensions (without safety enclosure guard) :

| Model | Width | Depth | Height | Weight |
|-------------|--------|--------|----------|--------|
| ATLAS II 10 | 770 mm | 455 mm | 1,473 mm | 200 Kg |
| ATLAS II 20 | 770 mm | 455 mm | 1,473 mm | 200 Kg |
| ATLAS II 50 | 770 mm | 455 mm | 1,473 mm | 250 Kg |

For a model with a "safety enclosure" protector, the height is plus 40mm compared to the above table.

Controller dimensions:

| Model | Width | Depth | Height | Weight |
|------------|----------|--------|----------|--------|
| Drivetouch | 335.7 mm | 315 mm | 176.2 mm | 7 Kg |

Packaging dimensions for load frames (weight: frame + packaging) :

| Model | Width | Depth | Height | Weight |
|----------------|--------|--------|----------|--------|
| ATLAS II 10 CC | 950 mm | 590 mm | 1,795 mm | 280 Kg |
| ATLAS II 20 CC | 950 mm | 590 mm | 1,795 mm | 285 Kg |
| ATLAS II 50 CC | 950 mm | 590 mm | 1,795 mm | 316 Kg |

3. Handling

This chapter provides instructions for lifting and moving your Atlas II system. Unless otherwise specified, it is your responsibility to safely unload, unpack and move the equipment to its final location on your premises. It is also your responsibility to insure the equipment. Before moving the equipment from the receiving area to its final location, check the dimensions of all doors and passageways through which you plan to move the machine.

Two-post Atlas racks may only be moved using a forklift (or overhead crane) with a load rating of twice the gross weight of the load rack. For rack weights, refer to the table in Chapter 2.

Ensure that the test system is placed on a suitable work platform capable of supporting the weight of the test system. Ensure that users can access the system's controls and workspace without difficulty when it is placed on a table or other suitable platform.

3.1. Before you start

Before moving the load rack, make sure that:

- The operators of your equipment are properly licensed and have complied with your local safety standards
- Sufficient clearance is present between the ceiling and the top of the load rack at the final location on site, including clearance for lifting the rack with a forklift.
- No accessory is detached from the transport pallet.
- The rack and forklift (or crane) can pass through all doorways, corridors, elevators or stairs between the loading dock and the final location on site.
- The floors between the loading dock and the final location on site are strong enough to support the weight of the load frame and the forklift.
- Any table on which the frame is placed must be sturdy, level and able to support the weight of the machine.
- You have the proper packaging materials to protect the load frame when you move it or relocate it to another site.

3.2. Equipment

The client must have the following available:

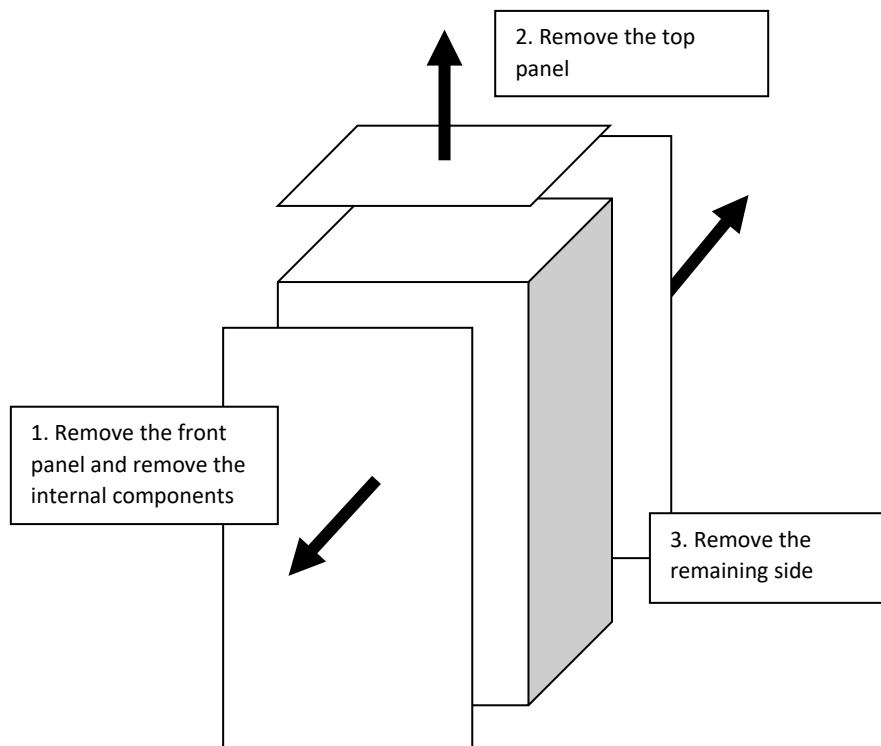
- A forklift truck with a load rating of twice the gross weight of the load frame or an overhead crane.
- A crowbar
- A cutting tool for cutting strapping
- A screw removal tool
- A protective padding for the crossbar
- Two M12 lifting rings, if using an overhead crane

3.3. Procedure

To unpack and position the Atlas

1. Without removing it from its shipping container, move the rack to its final location on your site. Use a forklift to transport the case from the loading dock to the final location. Unpack the load rack after moving it to its final location.
2. Remove the shipping container while keeping the load frame on the shipping pallet.
3. Remove the fixed pieces of wood around the machine and the accessory boxes
4. Use the packing slip to inventory all items. Accessories can be packed with the load frame in the container or packed separately.
5. Place the rack in its place of use.

Figure showing the opening of the package :



3.4. Travel procedures

There are two methods of moving the rack to its location:

1. Forklift under the crossbar
2. Bridge crane with lifting rings

3.4.1. Forklift truck method under the crossbeam

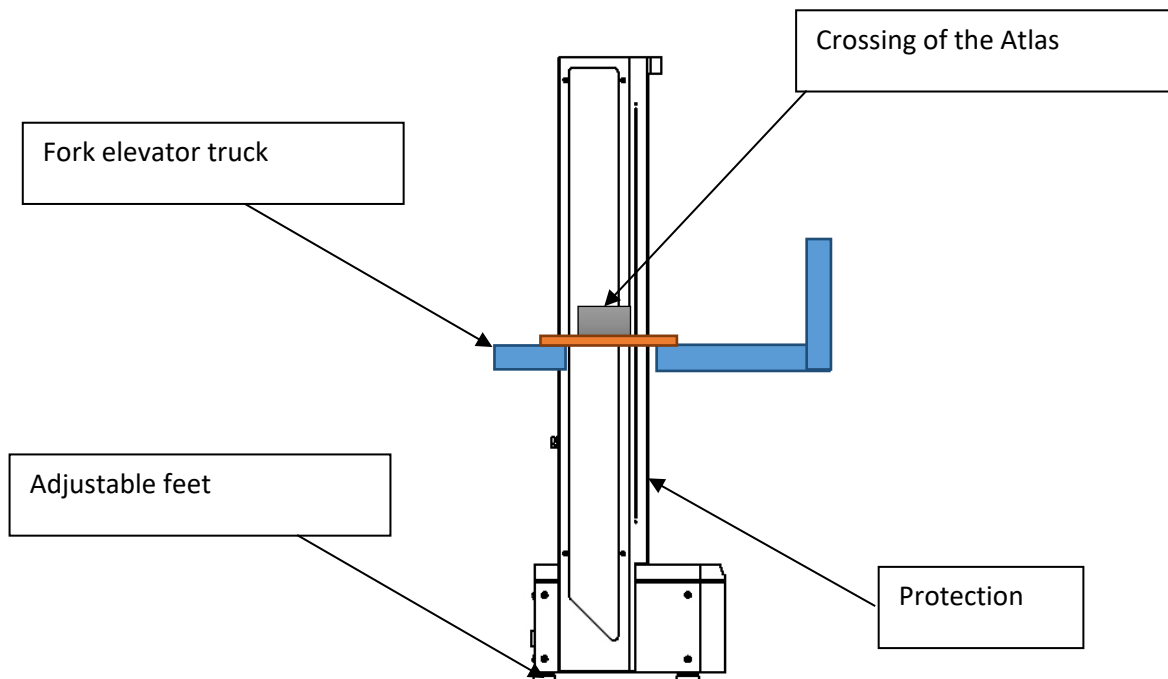
This method requires placing protective padding on the crossbar or arms of the forklift to prevent marks and scratches on the crossbar.

To move the load frame using the crossbar method:

1. Make sure no set screws are attached to the pallet.

2. If you are using a forklift with padded forks or a protective bracket around the crossbar, carefully insert the forks under the crossbar between the columns.
3. Slowly and carefully lift the frame off the ground.
4. Remove the transport pallet, if not already done.
5. Move the rack to its place of use.
6. Four adjustable feet are supplied with the load frame. Make sure that they are screwed in place before installing the frame.
7. Carefully place the load rack in its location.
8. Remove the padded forks from under the frame rail.

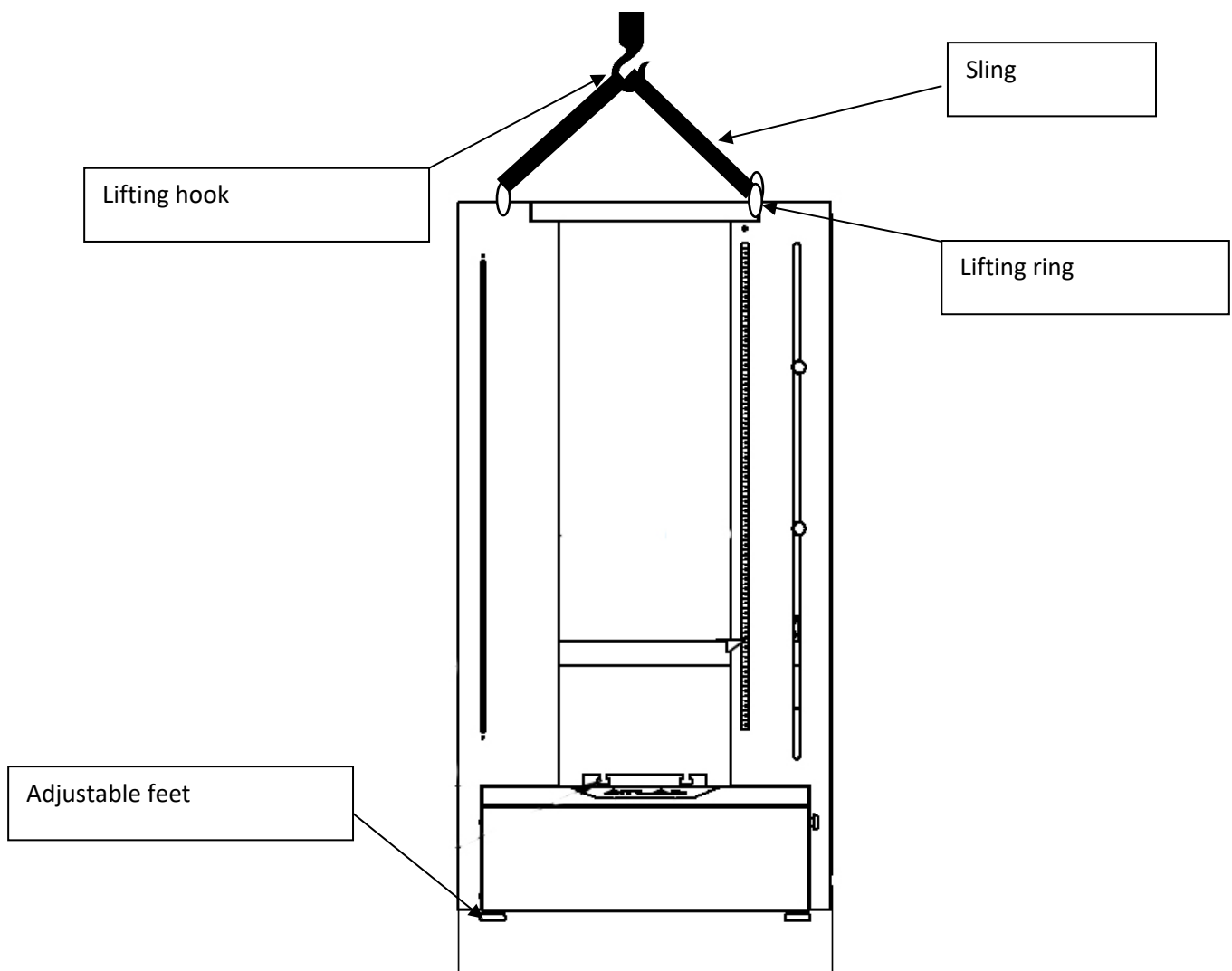
Once the rack is in its test location, you can continue the installation process.



3.4.2. Overhead crane method

To move the load frame using the overhead crane method:

1. Screw the two M12 lifting rings to the top plate of the Atlas
2. Attach the two lifting slings to the lifting rings on the top plate and then attach them to the crane hook.
3. Slowly and carefully lift the frame off the ground.
4. Remove the transport pallet, if not already done.
3. Move the rack to the location of use.
4. Four adjustable feet are supplied with the load frame. Make sure that they are screwed in place before installing the frame.
5. Carefully place the rack in its location.
6. Remove the lifting straps from the top plate, as well as any protective padding, if applicable.



4. Installation

Inspect the machine and make sure there has been no obvious damage during transit to the packaging and the frame itself. If there is any damage, do not use the test bed until a damage report has been sent to Andilog.

We strongly recommend that you retain any packaging that will be useful if the system needs to be returned for service.

4.1. Fixation of the feet

The stand is supplied with four height adjustable feet attached to the base of the stand. It is important to align the machine horizontally by adjusting the feet and checking with a spirit level. Once the frame is level, secure the height of the legs by tightening the locknuts on each leg.

4.2. Mounting of the load cell

4.2.1. Mount the sensor to the crossbar

The sensor is fixed to the ATLAS test bench using a hexagonal head screw that passes through the central hole of the crossbar. The whole must be secured with a key. The connection cable passage must be secured via the cable grommet. For more information, please refer to the user manual of your system.

4.2.2. Change sensor

It is possible to change the sensor, simply by disconnecting one sensor and attaching another in its place. Turn off the test bench before disconnecting the sensor. When the new sensor is plugged in, switch on the test bench again. After a few seconds the new sensor will be automatically recognized. The test bench will read the sensor's new capacity, serial number and calibration data.

4.3. Fasteners and other accessories

The jaws and other gripping accessories are attached to the base plate and under the sensor. The accessories can be assembled or disassembled as many times as necessary. Before positioning the sample, make sure that the accessories are secured.

Note: When opening and closing jaw-type attachments, there is a risk of finger crushing, especially with pneumatically or electrically operated attachments.

The equipment is equipped with a lateral slide (left column) on which it is possible to fix additional accessories such as camera, document holder or any other element that can be useful to ensure a good ergonomics to the user during the preparation of the tests.

4.4. Installation of the control console

Please refer to the user manual of your system.

4.5. The security enclosure

The safety enclosure is a guard associated with a locking device so as to ensure, together with the machine control system, that the machine's movement functions cannot be performed until the enclosure door is closed. If the operator opens the door while the machine is moving, a stop command is given.

The machine can generate relatively high forces that can cause serious permanent damage to the body parts if they are accidentally placed between the crosspiece and the table when using the test bench. For this reason, a safety enclosure with a door with a switch allows the use of the machine with the door closed without the risk of the operator coming into contact with the moving parts during the use of the machine. In addition, the safety enclosure can also provide protection against parts being ejected during testing.

Andilog strongly recommends the use of the enclosure to protect and supervise personnel access to the machine's moving parts.

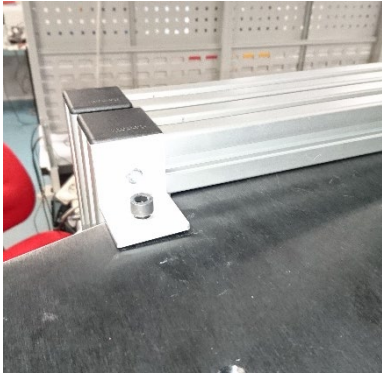
If the customer does not accept the optional safety enclosure, it is the customer's responsibility to secure the personnel in the work area to ensure that the system complies with the EU directive.

Note: When using the "safety enclosure" protector, it is the customer's responsibility to ensure that its operation is not altered or disabled intentionally or unintentionally.



Installation:

- Position the front housing (the one with the handle) on the machine table



- Position the 2 screws on the top of the machine to hold the housing. Do not tighten the screws at first to leave room for movement and to position the housing properly.



- From the back of the machine, connect the door switch jack to the machine. The plugged-in jack should be locked inside the groove to prevent unintentional disconnection.



- Position the rear housing and hold it in place with the two screws on top as for the front housing.

- Tighten the 4 screws on top, making sure to stick the housing to the Atlas sheet metal. It may be necessary to adjust the position of the door switch so that it faces the door.
- Check for proper operation by raising or lowering the Atlas with the door open (the machine should not start) or closed (normal operation)

4.6. Adjustment of the mechanical stops

The stroke of the crosshead can be limited by means of upper and lower mechanical stops. The mechanical stops prevent damage to the sensor and gripping accessories. If the crosshead reaches a

stop during a test run, it will stop. The stops must be adjusted after the accessories are attached so that the stop positions prevent the moving part from touching the fixed part.

To secure the stops, loosen the round head screw by turning counterclockwise, then position the stop as needed and retighten. Check that the tension is correct.

4.7. Mains connection

Check that your electrical installation corresponds to the voltage of 220V or 110V / 50-60 Hz. If the voltage of your installation does not match, please contact your supplier who will advise you on the steps to take to solve the problem. Incorrect voltage can lead to costly breakdowns for repair. An earth connection is imperatively necessary for the connection of the test bench to the mains.

CAUTION: Connecting a test bench to the mains without a ground connection is extremely dangerous and can lead to a risk of electric shock.

With the supplied power cable, connect your stand to the mains. Turn on the power with the switch.

As a precaution, always disconnect the test bench from the mains when not in use to avoid accidental start-up by an untrained operator.

4.8. Software installation

Please refer to the user manual of your software.

Note: Pay particular attention to the use of computer peripherals (mouse, touchpad, keyboard) so that they do not inadvertently activate an unexpected test or movement of the central crossbar (i.e. Cursor positioned on an actuator key and inadvertently pressed).

Note: When using the remote controls, make sure the work area is not being used by anyone else.

5. Emergency stop of the equipment

The equipment is equipped with 2 emergency stop buttons with mechanical locking, located on the right side of the bi-column frame and the front of the control & measurement console. Pressing an "emergency stop" button in case of emergency, this action stops the machine by cutting off the power supply.

To reset: unlock the "emergency stop" button by simply turning the switch clockwise.
To switch on the power, the two "emergency stop" buttons must be unlocked.

It is recommended to become familiar with the operation of this switch as soon as the test bench is connected to the mains.

6. Maintenance, repair and modifications

The ATLAS II system does not require any special maintenance. Regular maintenance must be carried out. Dust, dirt and other foreign bodies must not accumulate in such a way that they deflect part of the force to be measured and thus falsify the measured value. The frame does not contain any user serviceable components, except for the fuses.

6.1. Prerequisites

Before performing any maintenance, service or repair:

- Turn off equipment and protect from accidental ignition
- Disconnect the equipment from the mains

After maintenance, servicing or repair operations check:

- The correct tightening of all screwed elements
- All maintenance tools are no longer on and in the machine
- All safety elements (e.g. limits, stops, emergency stop buttons) are functioning properly.

6.2. Periodic control

The installation is subject to periodic checks to guarantee the safety of the installation.

Periodic inspection - check before starting your tests:

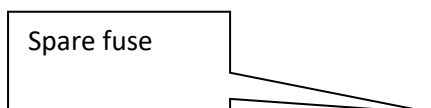
- All cables are connected and secured (use of cable trays when available)
- All accessories and grips are intact and clean (no debris)
- The building is level

Annual inspection - check the entire installation, i.e:

- General condition of the devices, accessories and sensor.
- Good condition of the components and good tightening of the screws
- Visual control of the installation
- Verification of the detection of the mechanical stops and the safety servo-controls
- Operate the crossbar through its full range of motion. The crossbar should move smoothly, without unusual noise or erratic movement.
- Administrative control of the load cell adjustment certificate

6.3. Fuse replacement

To replace a fuse, turn off your system, disconnect the power supply and unplug all power cables. Lift the fuse cartridge cover. Replace with new fuses of the same voltage and size. Replace the fuse cartridge. Reconnect the power cord and turn on the unit.



6.4. Maintenance and calibration

To ensure optimal performance, your SPIP load cell should be recalibrated by ANDILOG periodically.

If the device is damaged during use, contact ANDILOG. The overhaul and/or exchange of parts may only be performed by ANDILOG or by a person having received the explicit agreement of ANDILOG and in accordance with the technical instructions provided by ANDILOG.

6.5. Cleaning

The cleaning or disinfection of system components should only be done with products that are not aggressive or harmful to Andilog components. Cleaning with a clean dry cloth is recommended. You will have to disconnect your frame before any cleaning.

6.6. Changes

Any dismantling or modification of the system (in terms of design or safety) is prohibited. We cannot be held responsible for any damage resulting from any modification.

7. APPENDIX

Specifications

| | ATLAS II 10 CC | ATALS II 20 CC | ATLAS II 50 CC |
|-----------------------|--------------------------------|----------------|----------------|
| Capacity | 10 kN | 20kN | 50kN |
| Travel | 900mm | | |
| Vertical space | 950mm | | |
| Width between columns | 350mm | | |
| Minimum speed | 1 mm/min | | |
| Maximum speed | 250 mm/min | 250 mm/min | 150 mm/min |
| speed accuracy | +/- 0.5% of indicated speed | | |
| Speed resolution | 0.02mm | | |
| Load cell accuracy | +/- 0.1% FS | | |
| Load cell resolution | 1/10 000 FS | | |
| Voltage | 220 V AC 50HZ OR 110 V AC 60HZ | | |
| Max power requirement | 700W | | |