

Force Test Stands Series **ES**

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ES05 | ES10 | ES20 | ES30

# **User's Guide**

**MARK-10**®

## Thank you!

Thank you for purchasing a Mark-10 Series ES Force Measurement Test Stand. We are confident that you will get many years of great service from this product.

Mark-10 test stands are ruggedly built for many years of service in laboratory and industrial environments.

This User's Guide provides unpacking, setup, and operator instructions, along with dimensions and specifications. For additional information or answers to your questions, our technical support and engineering teams are eager to help you.

Thank you again for your purchase and happy testing!

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# ES05

## 1 LIST OF INCLUDED ITEMS

Quantity	Item
4	Thumb screws for gauge mounting
1	Allen wrench set



## 2 OPTIONAL EQUIPMENT

### 2.1 AC1060 – Base Plate

Steel base plate has 25 #10-32 threaded holes for fixture mounting.



### 3 UNPACKING AND SETTING UP

1. Carefully unpack the stand and inspect for any damage. Inspect the contents to ensure that you have received a test stand complete with all accessories – see **List of Included Items**.
2. Place the stand on a firm, flat and level working surface free from vibration to ensure accurate readings.
3. Save original packaging materials in case future transportation is required.

### 4 OPERATION

Mark-10 force gauges with capacities up to 500 lbf [2,500 N] can be mounted directly to the stand without adapters. Mount the gauge using the thumb screws provided.

The loading mechanism can be repositioned along the column by loosening the wing nut on the left side of the housing, repositioning the mechanism as desired, and tightening the wing nut, as illustrated in Fig. 1.

To initiate a compression test, push down on the lever. Note that the lever is spring loaded. To prevent damage to the ES05, keep your hand on the lever until it returns to its original position.

Install the necessary attachments and make sure they are secure, safe to operate, and set up properly for your sample. Then zero out the force gauge and begin operation.

To maintain smooth functioning of the stand, avoid overloads.

If the optional base plate has been ordered, install it by tightening the four screws provided, as illustrated in Fig. 2.



**Fig. 1**  
Lever mechanism can be repositioned along the column.

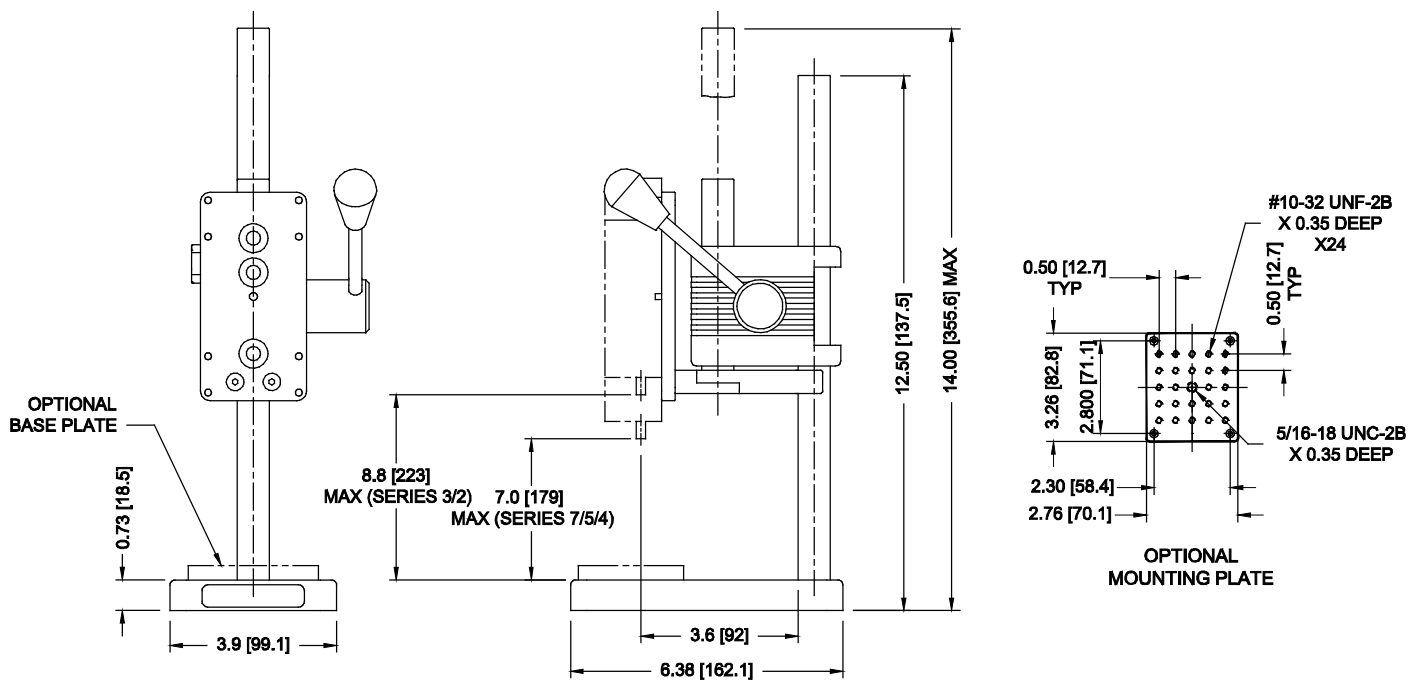


**Fig. 2**  
Optional base plate can be installed with four screws.

## 5 SPECIFICATIONS

<b>Maximum force</b>	30 lbF [150 N], compression only
<b>Maximum travel</b>	1.5" [38 mm]
<b>Weight</b>	6 lb [2.7 kg]

## 6 DIMENSIONS in [mm]



## ES10 & ES20

### 1 LIST OF INCLUDED ITEMS

Quantity	Item
1	Lever (ES10) or handwheel (ES20)
4	Thumb screws for gauge mounting
1	Allen wrench set



ES10



ES20

## 2 OPTIONAL EQUIPMENT

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### 2.1 ES001 – dial indicator kit

Measures up to 1" of travel, with 0.001" resolution.



### 2.2 ES002 – digital indicator kit

Measures up to 1" / 25 mm of travel, with 0.0005" / 0.01 mm resolution. Includes zero and in/mm selector buttons.



### 2.3 AC1060 – Base plate with threaded holes

Optional mounting plate contains a matrix of threaded holes for grip and fixture mounting.

## 3 UNPACKING AND SETTING UP

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1. Carefully unpack the stand and inspect for any damage. Inspect the contents to ensure that you have received a test stand complete with all accessories – see **List of Included Items**.
2. ES10: Install the loading lever into the hub.  
ES20: Install the handwheel at the end of the lead screw, then tighten the set screw.
3. Place the stand on a firm, flat and level working surface free from vibration to ensure accurate readings. If preferred, the test stand can be secured to a work bench with two screws or bolts through the two clearance holes in the base – see **Operation** section for further details.

## 4 OPERATION

Place the stand on a clean, flat, and level surface. It is recommended that the stand be mounted to the surface with two 5/16 screws through the clearance hole in the base.

Install a force gauge onto the gauge plate with four thumb screws. Mark-10 force gauges with capacities up to 500 lbF / 2,500 N mount directly to the stand without adapters.

The loading lever on the ES10 can be adjusted to allow for ease of operation. Reposition the lever using one of the three tapped holes located in the hub.

If the optional dial indicator kit (ES001) or digital indicator kit (ES002) is purchased separately, it can be installed using the hardware provided.

Install the necessary attachments and make sure they are secure, safe to operate, and set up properly for your sample. Then zero out the force gauge and begin operation.

To maintain smooth functioning of the stand, avoid overloads.



ES20

ES10

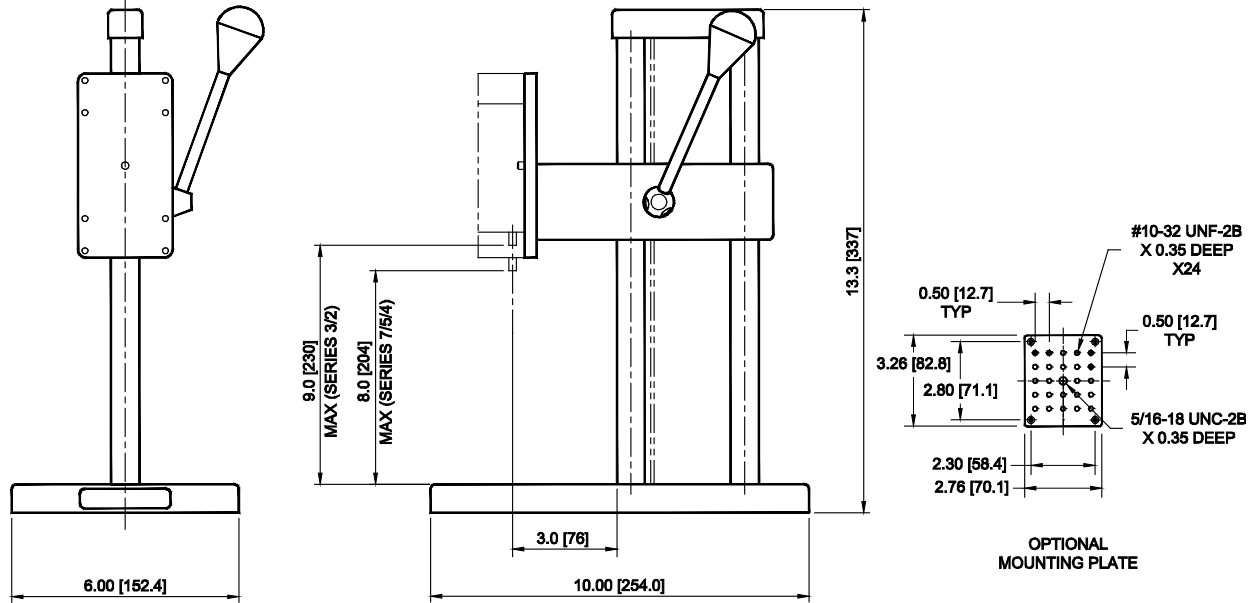
## 5 SPECIFICATIONS

	ES10	ES20
<b>Maximum force</b>	100 lbF [500 N]	
<b>Maximum travel</b>	9" [229 mm]	
<b>Loading method</b>	Lever (can be placed in 3 positions for ease of operation)	Top-mounted handwheel
<b>Travel rate</b>	1.050" [26.7 mm] / lever rev.	0.083" [2.1 mm] / wheel rev.
<b>Weight (test stand, only)</b>	10 lb [4.5 kg]	

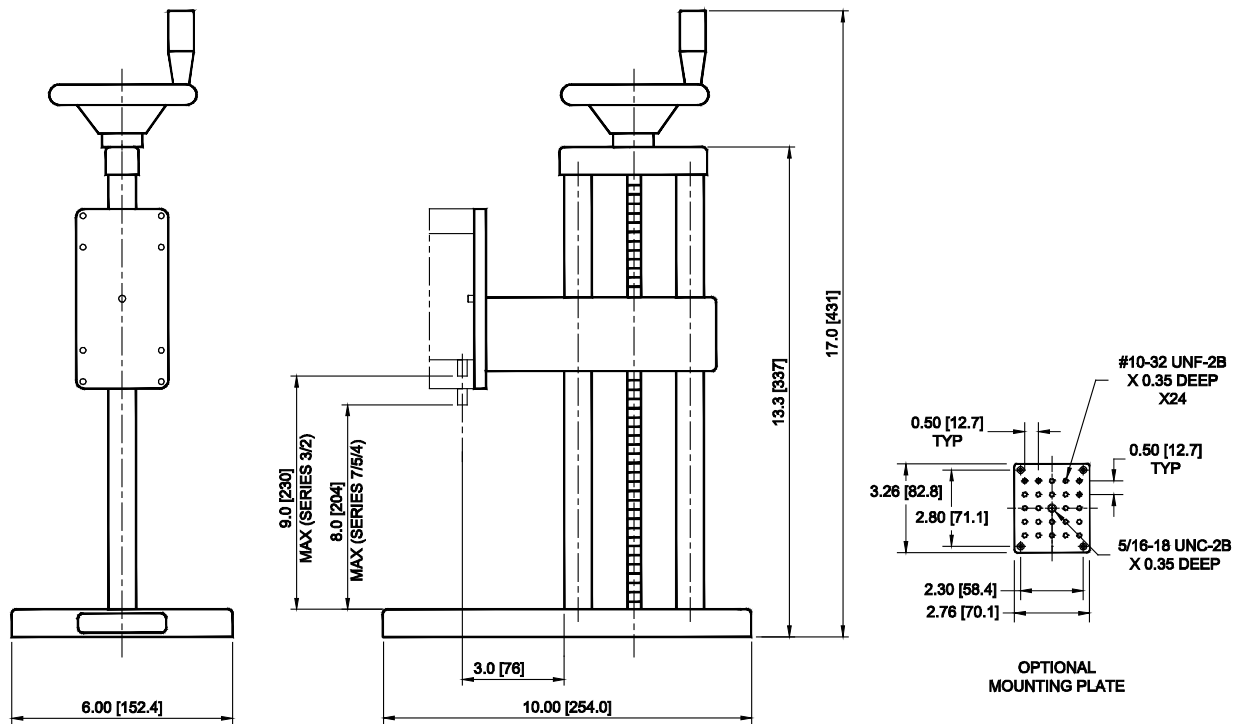


6 DIMENSIONS in [mm]

ES10



ES20



## ES30

### 1 LIST OF INCLUDED ITEMS

Quantity	Item
1	G1009 – 2" diameter compression plate
1	G1028 – small hook
1	G1030 – thread adapter, 5/16-18M to #10-32F
1	G1038 – medium hook
1	G1039 – coupling, #10-32F/F
1	Handwheel
4	Thumb screws for gauge mounting
1	Allen wrench set



## 2 OPTIONAL EQUIPMENT

### 2.1 ESM001 – Digital Travel Display Kit

6" [150 mm] travel, 0.0005" [0.01 mm] resolution, SPC output for automated data collection. Requires travel stops kit. To output data to a PC via USB, use communication adapter part no. MU100 and AC1105 cable.



## 3 UNPACKING AND SETTING UP

1. Carefully unpack the stand and inspect for any damage. Inspect the contents to ensure that you have received a test stand complete with all accessories – see **List of Included Items**.
2. Place the stand on a firm, flat and level working surface free from vibration to ensure accurate readings.
3. Save original packaging materials in case future transportation is required.

## 4 OPERATION

Place the stand on a clean, flat, and level surface. It is recommended that the stand be mounted to the surface with two 5/16 screws through the clearance hole in the base.

Install a force gauge onto the gauge plate with four thumb screws. Mark-10 force gauges with capacities up to 500 lbF / 2,500 N mount directly to the stand without adapters.

Install the necessary attachments and make sure they are secure, safe to operate, and set up properly for your sample. Then zero out the force gauge and begin operation.

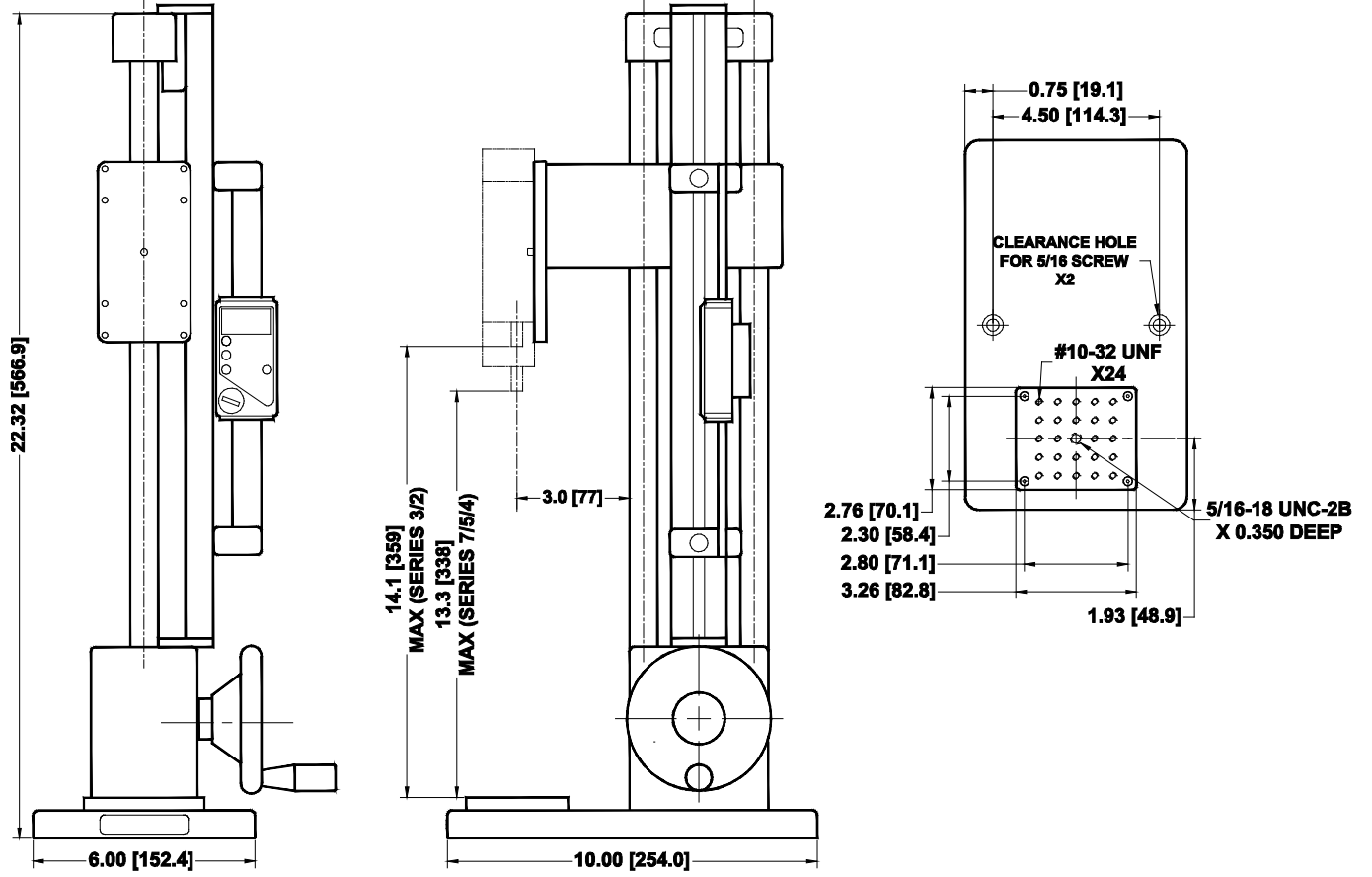
The base is removable so that the stand may be used as a component of a larger testing system. Proper care should be taken during installation to avoid injury.

To maintain smooth functioning of the stand, avoid overloads.

## 5 SPECIFICATIONS

<b>Maximum force</b>	200 lbF [1 kN]
<b>Maximum travel</b>	13" [330 mm]
<b>Travel rate</b>	0.05" [1.27 mm] / handwheel rev.
<b>Weight (test stand, only)</b>	17 lb [7.7 kg]

6 DIMENSIONS in [mm]





*Mark-10 Corporation has been an innovator in the force and torque measurement fields since 1979. We strive to achieve 100% customer satisfaction through excellence in product design, manufacturing and customer support. In addition to our standard line of products we can provide modifications and custom designs for OEM applications. Our engineering team is eager to satisfy any special requirements. Please contact us for further information or suggestions for improvement.*



*Force and torque measurement engineered better*

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