

PROGRAMMABLE FORCE TEST STAND 35-05-01



The **Programmable Force Test Stand** is a highly configurable motorized test stand for tension and compression applications up to 1.5 kN (300 lbF). This tester introduces a unique concept in force testing: all major controller software features are optional and may be purchased at time of order or added by the user in the field at a later date. Such flexibility makes the force test stand a highly versatile tester that can be as basic or advanced as required, from basic push/ pull requirements to advanced sequences for demanding test procedures. When fully equipped, the stand has a class-leading speed range, programmable cycling sequences with dwell time at limits, auto-return, button control options, password protection, and more. An LCD with intuitive menu navigation and modular mechanical design round out the exciting features of this motorized test stand.

Standard Features

Controller Features

- LCD display with UP, DOWN, STOP, and emergency stop buttons and soft keys
- Selectable speed units of measurement (mm/min & in/min)
- Configurable password prevents unwanted changes to test parameters

Test Frame Features

- Integrated travel limit switches
- Removable fixture mounting plate with matrix of threaded holes
- Stepper motor-driven, produces 0% speed variation with increasing load
- Mounting holes for bench mounting
- Unique mechanical design significantly reduces column bending

Optional Hardware Features

► Digital travel display

15 cm [6 in] travel, 0.1 cm [0.0005 in] resolution, SPC output for data collection.

■ Set point cable

Stops test stand travel or cycles between programmable high and low force set points. Compatible with force gauges with set point outputs only.

■ Overload protection module

Protects the force gauge against overloads, adjustable from 20 - 110% of gauge's full capacity.

Compatible with force gauges equipped with analog output.

■ Column extensions

Available in 15 cm (6 in), 30 cm (12 in), 60 cm (24 in), and custom lengths



▲ The Force Test Stand is shown in a typical tensile testing application, with Series BG digital force gauge, digital travel display, and parallel jaw grips



▲ Optional digital travel display

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OPTIONAL CONTROLLER FEATURES

Any of the below option packages may be purchased at time of order or may be added in the field at a later date by entering an activation code.

■ Auto-return

The crosshead moves to a limit switch or force set point (requires a force gauge with set point outputs), stops, and reverses direction at full speed to the other limit switch or set point.

■ Cycling / Dwell Time

The crosshead to move up and down between limit switches or force set points (requires a force gauge with set point outputs). Configurable up to 99,999 cycles. Dwell time allows the operator to program the length of time, up to 9,999.9 seconds, in 0.1 second intervals, for which the crosshead pauses at limits.

■ Programmable Button Functions

Expands UP and DOWN button operation to three user-configurable modes:

1. Maintained (standard): a short push produces continuous motion until STOP is pressed
2. Momentary: crosshead moves only while the button is pressed
3. Auto: short push produces maintained motion, while holding the button down will produce momentary motion

■ Independent Up and Down Speeds

Configurable speeds for up and down directions

■ Low Speed Extended Range

Extends the speed range to 0.5 - 330 mm/min (0.02 - 13 in/min)

■ High Speed Extended Range

Extends the speed range to 13 - 1100 mm/min (0.5 - 45 in/min)

■ Complete Speed Range

Extends the speed range to 0.5 - 1100 mm/min (0.02 - 45 in/min)



▲ **Digital controller contains a backlit LCD screen with menu choices for ease of setup and operation**

Load capacity	
Up to 24 in/min (610 mm/min)	1.5 kN [300 lbF]
> 24 in/min (> 610 mm/min)	1 kN [200 lbF]
Standard speed range	13-330 mm/min [0.5-13 in/min]
Maximum travel	317 mm [12.5 in]
Speed setting accuracy	±0.2%
Speed variation with load	±0% [Stepper motor driven]
Limit switch repeatability	0.03 mm [0.001 in]
Power	Universal input 80-240 VAC, 50/60 Hz
Weight (without options)	14.5 kg [32 lbs]
Included accessories:	Extension rod, small hook, medium hook, #10-32 coupler, compression plate, force gauge mounting hardware, tool kit

ORDERING INFORMATION

Model No. 35-05-01	Description
Hardware	
ESM300	Motorized test stand, 110 V
ESM300E	Motorized test stand, 220 V
ESM300-001	Digital travel display, 150 mm x 0.01 (6 x 0.0005 in)
ESM300-002-1	Column extension, 15.2 cm (6 in)
ESM300-002-2	Column extension, 30.5 cm (12 in)
ESM300-002-3	Column extension, 61 cm (24 in)
09-1090	Set point cable
11-1042	Overload protection module
Controller Options	
CF001	Auto return
CF002	Cycling / dwell time
CF003	Programmable button functions
CF004	Independent up and down speeds
CF005-1	Low speed range extension
CF005-2	High speed range extension
CF005-3	Complete speed range
CF006	Complete options package (includes all above items)

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