

## Specifications

### LOAD TEST STAND

LTS-50NB/200NB/500NB/1kNB

Spec.No. ENLTS4150B

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#### 1. General

Load Test Stand, LTS is a desk type testing machine featuring light weight and compact size, and you can make tests easily. During the test, test force and shifting value of movable crosshead can be displayed digitally and also the peak value can be confirmed after tests.

You can make use of this Load Test Stand in Strength test on various kinds of materials and checks on products and so on in wide range of the fields.

#### 2. Specifications

2-1	Max. testing capacity	LTS-50 NB : 50 N LTS-200 NB : 200 N LTS-500 NB : 500 N LTS-1k NB : 1 kN
2-2	Testing space	Tension & Compression test can be made at the lower section of movable crosshead. The dimensions of testing space are shown on the Outline dimensions.
2-3	Allowable test force for test speed	Speed range S20,S50,S100,S200,S300 at 1kN{102.0 kgf} Speed range S400, S500 at 500 N {50.99 kgf} ※The detail of a speed range refer to the “2-5 movable crosshead speed”
2-4	Movable crosshead stroke	Between chucks :0 mm ~ 310 mm (Load cell: LTTU-200N, Chuck: PCH-500N-012 is installed.)
2-5	Movable crosshead speed	Digital display setting by the select mode. (Make selection by using [↑]·[←] keys.)
	Setting method	
	Test speed	
	Manual speed	Same as the set-up test speed
	Speed range	Select speeds from the ①~⑦ speeds in below (■ : The selected speed range)
	<input type="checkbox"/> ①Speed range:S20 (LTS-50NB-S20/LTS-200NB-S20/LTS-500NB-S20/LTS-1kNB-S20)	
	Test speed	1.5、2、5、10、15、20 mm/min
	Return speed	Same as the set-up test speed The return speed becomes 20 mm/min when the “RAPID RETURN” is selected in the Function mode. (LED on the “RETURN” key lights on when the “RAPID RETURN” is selected.)
	Speed accuracy	Over-shooting prevention function attached. ±3 % of setting speed (No load applied.)

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- ②Speed range:S50  
(LTS-50NB-S50/LTS-200NB-S50/LTS-500NB-S50/LTS-1kNB-S50)
  - Test speed 5、10、20、30、40、50 mm/min
  - Return speed Same as the set-up test speed  
The return speed becomes 50 mm/min when the “RAPID RETURN” is selected in the Function mode.  
(LED on the “RETURN” key lights on when the “RAPID RETURN” is selected.)
  - Speed accuracy Over-shooting prevention function attached.  
±3 % of setting speed (No load applied.)
  
- ③Speed range:S100  
(LTS-50NB-S100/LTS-200NB-S100/LTS-500NB-S100/LTS-1kNB-S100)
  - Test speed 10、20、30、50、75、100 mm/min
  - Return speed Same as the set-up test speed  
The return speed becomes 100 mm/min when the “RAPID RETURN” is selected in the Function mode.  
(LED on the “RETURN” key lights on when the “RAPID RETURN” is selected.)
  - Speed accuracy Over-shooting prevention function attached.  
±3 % of setting speed (No load applied.)
  
- ④Speed range:S200  
(LTS-50NB-S200/LTS-200NB-S200/LTS-500NB-S200/LTS-1kNB-S200)
  - Test speed 15、20、50、100、150、200 mm/min
  - Return speed Same as the set-up test speed  
The return speed becomes 200 mm/min when the “RAPID RETURN” is selected in the Function mode.  
(LED on the “RETURN” key lights on when the “RAPID RETURN” is selected.)
  - Speed accuracy Over-shooting prevention function attached.  
±3 % of setting speed (No load applied.)
  
- ⑤Speed range:S300  
(LTS-50NB-S300/LTS-200NB-S300/LTS-500NB-S300/LTS-1kNB-S300)
  - Test speed 30、50、100、150、200、300 mm/min
  - Return speed Same as the set-up test speed  
The return speed becomes 300 mm/min when the “RAPID RETURN” is selected in the Function mode.  
(LED on the “RETURN” key lights on when the “RAPID RETURN” is selected.)
  - Speed accuracy Over-shooting prevention function attached.  
±3 % of setting speed (No load applied.)

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□ ⑥Speed range:S400

(LTS-50NB-S400/LTS-200NB- S400/LTS-500NB- S400)

Test speed 40、75、100、200、300、400 mm/min

Return speed Same as the set-up test speed

The return speed becomes 400 mm/min when the “RAPID RETURN” is selected in the Function mode.

(LED on the “RETURN” key lights on when the “RAPID RETURN” is selected.)

Over-shooting prevention function attached.

Speed accuracy  $\pm 3$  % of setting speed (No load applied.)

□ ⑦Speed range:S500

(LTS-50NB-S500/LTS-200NB- S500/LTS-500NB- S500)

Test speed 50、100、200、300、400、500 mm/min

Return speed Same as the set-up test speed

The return speed becomes 500 mm/min when the “RAPID RETURN” is selected in the Function mode.

(LED on the “RETURN” key lights on when the “RAPID RETURN” is selected.)

Over-shooting prevention function attached.

Speed accuracy  $\pm 3$  % of setting speed (No load applied.)

2 – 6 Test force measurement

Test force display 5 digits digital display (—sign applied.)

Display range  $-19\,999 \sim 19\,999$

Display 7 segments, red LED

Range Once (1), 10 times

Can be changeable by the “RANGE” key.

(When 10 times is selected, the LED on the “RANGE” key lights on.)

Measurement accuracy Relative error $\pm 1.0$  % (Appreciable to JIS B7721 class 1)

Peak detection function After the test, test force value in the peak and position value will be displayed in the test made directly before in the selection mode.

Auto zero function Automatic zero point adjustment with the “ZERO” key.

Measuring unit SI unit, N

Changeover of load cell Change can be made in function mode.

Max of 4 kinds of load cells can be registered.

※Details of a load cell kind refer to “2-17 Standard accessories Load cell.”

Detective function of sample break point

Detects when the test force decreases suddenly more than the sensitivity of break point detection after exceeding 7 % of rated capacity of load cell, or detects when the test force decreases less than 0.1 % of rated capacity of load cell.

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Control at the time of break detection	At the time of break detection, stop of movable crosshead, reverse to position 0 mm and disregard of detection can be available.
Setting range of sensitivity of break point detection	0.1 %F.S. ~ 9.9 %F.S.
Setting method	Control and sensitivity of break detection can be set in function mode.
Analog output	DC±5 V (output connector: BNC female) Load resistance 5 kΩ or more, scaling function applied. Accuracy: ±0.5 %F.S. Resolution: Approx. 1/4 000 Output cable: option
2 - 7 Position display of movable crosshead	
Position display	5 digits digital display (with -sign)
Display range	-999.99 ~ 999.99
Display resolution	0.01
Display	7 segments, red LED
Display unit	mm
Zero reset	Zero reset can be provided at the optional position with the "RESET".
2 - 8 Test condition setting	
Test speed setting	Setting test speed by selection.
MAX control setting	Setting max value of test force or position.
MAX operation setting	Setting return or stop at max value.
2 - 9 Safety device	
EMERGENCY SW	Shuts the power supply of the testing machine during operation. (Lock method)
Stroke limit	Stops the operation of movable crosshead during operation. Setting can be made at the optional positions on upper/lower within the operating range of movable crosshead.
Limit of overload	Stops the movable crosshead when the test force value arrived at the ±102 % of rated capacity of load cell.
2 - 10 Keeping the test condition	Shuts off the power supply, and at the time of feeding power, the condition will be the one before shutting off. However, you can't keep the operating condition. (Keeps the condition when the movable crosshead stopped.)

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2-11	Communication function	Used to communicate with the external devices such as personal computer and so on. Conform to USB2.0. Also, applicable to the instruments to the USB1.1 standard. (Connector: B type female)
	Standard	USB connection port
	Connection	Test force and position value can be transferred with 20 times/s.
	Communication times	
2-12	Horizontal adjustment function	With level adjuster attached that can adjust horizontally at the lower section of testing machine.
2-13	Outline dimensions	Width 475 mm × Height 710 mm (*) × Depth 347 mm *Level adjuster is excluded.  Space for the connection with connector at the rear side of testing machine. : 80 mm
2-14	Weight	Approx. 18 kg
2-15	Power supply	Single phase AC100 V ±10 V (50/60 Hz)、300 VA
2-16	Operating condition	Temperature : 5 °C ~ 40 °C Humidity : 20 % ~ 80 %RH (Excludes frozen.)
2-17	Standard accessories	(■ : The selected Load cell) □LTTU-50NB Rated capacity : 50 N □LTTU-200N Rated capacity : 200 N □LTTU-500N Rated capacity : 500 N □LTTU-1kN Rated capacity : 1 kN You can choose two or more load cells.(Max of 4 kind registration is possible) A change by function setup after load cell exchange is possible. ※Load cell is not changed automatically.
	Load cell	
	Power supply cable	2.4 m 1 pce For AC100 V, one side 3P plug (with 2P conversion adapter)
	Fuse for power supply	Midget fuse 5 A, 1 pce
	USB communication cable	A connector male ~ B connector male 2 m, 1 pce
	USB driver	Set up disk with Data acquisition software.
	Instruction manual	Each 1 set (Main body of Load Test Stand, Data acquisition set up disk)

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Data acquisition software

Setting item

LTSD-02 For set up CD-ROM : 1 pce

Test condition name

Kinds of tests (Tension/Compression)

Test force range (Once/10 times)

Test speed (6 steps selectable)

MAX control (LOAD/POSITION)

MAX operation (STOP/RETURN)

Input of the MAX value

Sample break detection (STOP/RETURN/OFF)

Input of sensitivity value of Sample break

Printing items

S-S curve

The maximum value (Test force · Displacement)

Break point (Test force · Displacement)

Data store

CSV file outputs of test data per sample.

Test results (Maximum value · Break point)

Output of data CSV file

Operational environment

Personal computer: PC/AT compatible machine  
(RAM256MB or more)

OS: Windows XP, Vista, 7, 10 32bit or 64 bit

USB port: 1 port is essential

Mouse: 1 piece is essential

Printer: Can be connectable with the PC described  
as above and also can be worked with the OS  
described as above.

CD-ROM drive: Required at the time of installation.

### 3. Function of options ( attached not attached)

Analog output cable (CAC-124S-2M)

BNC cable (one-side Y terminal, 2m)

※Specifications and outline dimensions and so on which have printed may subject to change for the propose of improvement without notice.

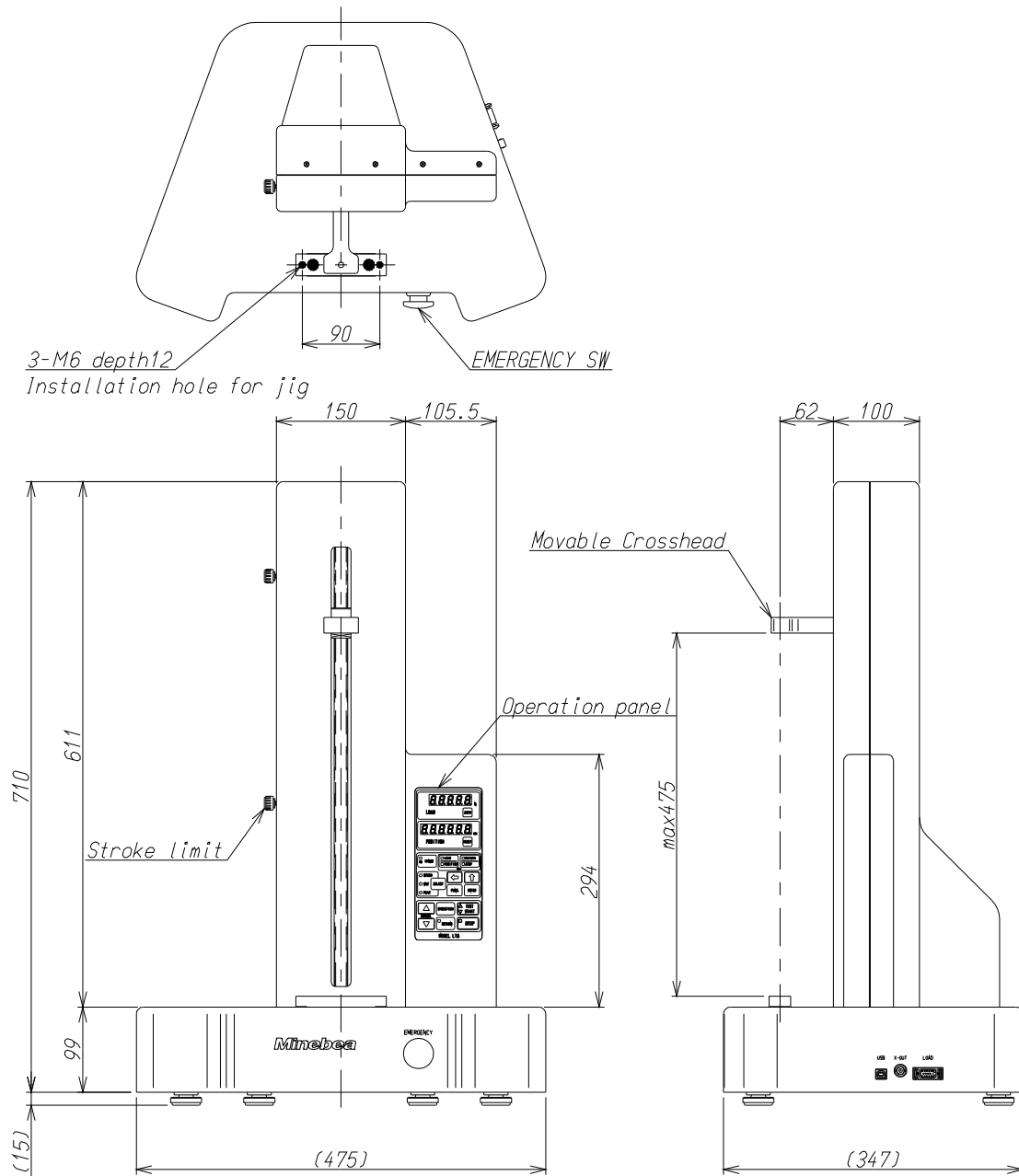
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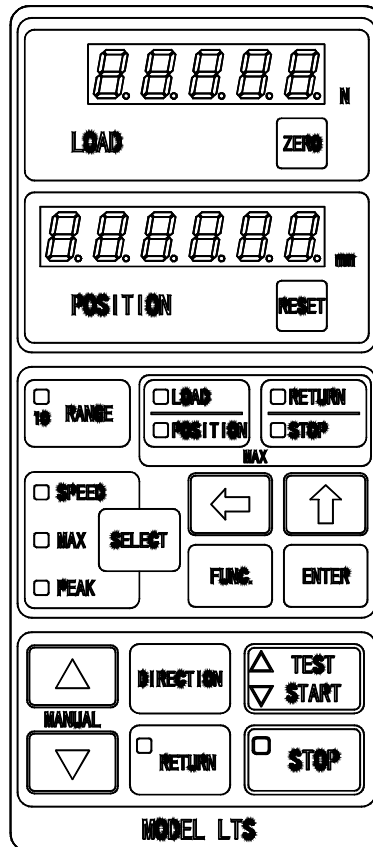
### Outline dimensions



Unit : mm

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Outline dimensions for operation panel



Test force display section(LOAD) : Displays test force value, setting item and set value.

Position display section (POSITION) : Displays position value, setting item and set value.

“ZERO” key : Resets the test force value to zero.

“RESET” key : Resets the position value to zero.

“RANGE” changeover key : Changes the test force range. (Once, 10 times)

“LOAD/POSITION” changeover key : Changes the kinds of control (LOAD,POSITION) at the MAX value.

“RETURN/STOP” changeover key : Change the kinds of operation (RETURN, STOP) at the MAX value.

“SELECT” key : Changes the SELECT menu (SPEED, MAX, PEAK).

“←”key : Changes the set value and shifts the digit of set value to the left.

“↑”key : Changes the set value and increases the set value.

“FUNC.” key : Change the Measurement mode for the Function mode.

“ENTER” key : Decides the setting items and set values.

“▲” key : Ascend the movable crosshead to upwards. (Manual operation)

“▼” key : Descend the movable crosshead to the downwards direction. (Manual operation)

“DIRECTION” changeover key : Changes the test direction .(upward, downward)

“RETURN” key : Reverses the movable crosshead to the position 0 mm.

“TEST START” key : Starts the test.

“STOP” key : Stops the test.