

# Autograph X Retrofit

Significantly Enhance an Existing AG-A/B/C/D/E/G/I/IS Autograph to the Latest AG-X Functions

## Major Benefits of Retrofitting

### Upgrade to AG-X functionality

- Auto-zeroing and auto-calibration permit simple and accurate testing
- Rangeless test force eliminates extensometer range settings
- Realtime auto-tuning of control parameters permits easy stress and strain control
- USB memory simplifies testing (Requires LCD touch panel\*<sup>1</sup>)



LCD touch panel\*<sup>1</sup>



### Use the latest software, TRAPEZIUM X

- Operate with a laptop computer.
- Comprehensive recalculation functions
- Output data in Word or Excel format.

### 0.2 msec ultra-high-speed sampling (using TRAPEZIUM X)

### Compact, space-saving measurement controller

(AG-A/B/C/D/E only)

### Automatic test force – strain control program as standard.

(Strain control, stress control, test force control, creep, etc.)



### Configuration

- TRAPEZIUM X Single ... 1 set
- AG-X/R measurement controller (with internal load amplifier) ... 1 set
- AG-X Smart Controller and fixtures ... 1 set
- Load cell CAL cable ... 1 set
- AG-X drive motor and fixtures ... 1 set

\*<sup>1</sup> Optional LCD touch panel permits testing without a PC.

(PC and desk not included)

# Specifications

## 1. Basic Specifications

Compliant with AG-X catalog specifications. (See separate AG-X catalog.)

### 1) Crosshead speed

#### ① Standard Speed Type

Capacity	AG-A/B/C	AG-D/E/G	AG-I/IS
10 kN max.	0.05 to 500mm/min	0.05 to 1000mm/min	0.0005 to 1000mm/min
20 to 100 kN	0.05 to 500mm/min	0.05 to 1000mm/min	0.0005 to 1000mm/min
250 kN	0.05 to 500mm/min	0.05 to 500mm/min	0.0005 to 500mm/min

(The crosshead minimum speed is also 0.05 mm/minute even if base model minimum speed is 0.5 mm/minute.)

#### ② Wide Speed Range Type

The minimum speeds in Table ① change as follows.

0.005 mm/min: AG-A/B/C/D/E/G    0.00005 mm/min: AG-I/IS

A standard-speed type base model can be upgraded to a wide-speed-range type.

- 2) The crosshead speed and permitted test force, crosshead-to-table clearance, tensile stroke, and frame rigidity comply with the model AG-A/B/C/D/E/G/I/IS delivery specifications.

## 2. Power Supply Capacity

Retrofitting changes the power supply voltage and capacity.

Use the power supply specified in the table below.\*2

Machine type	Before retrofit	After retrofit
AG-1, 5, 10kNA	1Φ100V, 300VA 3Φ200/220V, 400VA	1Φ100V, 1.5kVA (450W)
AG-20, 50kNA	1Φ100V, 300VA 3Φ200/220V, 2kVA	Trapezoidal screw: 3Φ 200/220 V, 7.5 kVA (2.5 kW) Ball screw: 3Φ 200/220 V, 5.0 kVA (1.2 kW)
AG-100kNA	1Φ100V, 300VA 3Φ200/220V, 2kVA	Trapezoidal screw: 3Φ 200/220 V, 7.5 kVA (2.5 kW) Ball screw: 3Φ 200/220 V, 7.0 kVA (2.0 kW)
AG-250kNA	1Φ100V, 300VA 3Φ200/220V, 2kVA	3Φ200V/220V, 7.5kVA (2.5kW)
AG-1, 5, 10kNB	1Φ100V, 500VA 3Φ200/220V, 400VA	1Φ100V, 1.5kVA (450W)
AG-20, 50kNB	1Φ100V, 500VA 3Φ200/220V, 2kVA	Trapezoidal screw: 3Φ 200/220 V, 7.5 kVA (2.5 kW) Ball screw: 3Φ 200/220 V, 5.0 kVA (1.2 kW)
AG-100kNB	1Φ100V, 500VA 3Φ200/220V, 2kVA	Trapezoidal screw: 3Φ 200/220 V, 7.5 kVA (2.5 kW) Ball screw: 3Φ 200/220 V, 7.0 kVA (2.0 kW)
AG-250kNB	1Φ100V, 500VA 3Φ200/220V, 2kVA	3Φ200V/220V, 7.5kVA (2.5kW)
AG-1, 5, 10kNC	1Φ100V, 150VA 3Φ200/220V, 400VA	1Φ100V, 1.5kVA (450W)
AG-20, 50kNC	1Φ100V, 150VA 3Φ200/220V, 2kVA	Trapezoidal screw: 3Φ 200/220 V, 7.5 kVA (2.5 kW) Ball screw: 3Φ 200/220 V, 5.0 kVA (1.2 kW)
AG-100kNC	1Φ100V, 150VA 3Φ200/220V, 2kVA	Trapezoidal screw: 3Φ 200/220 V, 7.5 kVA (2.5 kW) Ball screw: 3Φ 200/220 V, 7.0 kVA (2.0 kW)
AG-250kNC	1Φ100V, 150VA 3Φ200/220V, 2kVA	3Φ200V/220V, 7.5kVA (2.5kW)
AG-1, 5, 10kND, E	1Φ100V, 500VA 3Φ200/220V, 1kVA	1Φ100V, 1.5kVA (450W)
AG-20, 50kND, E	1Φ100V, 500VA 3Φ200/220V, 2.2VA	3Φ200V/220V, 5.0kVA (1.2kW)
AG-100kND, E	1Φ100V, 500VA 3Φ200/220V, 5.5VA	3Φ200V/220V, 7.0kVA (2.0kW)
AG-250kND, E	1Φ100V, 500VA 3Φ200/220V, 5.5kVA	3Φ200V/220V, 7.5kVA (2.5kW)
AG-20, 50kNG	3Φ200V/220V, 3.5kVA	3Φ200V/220V, 5.0kVA (1.2kW)
AG-100kNG	3Φ200V/220V, 5.5kVA	3Φ200V/220V, 7.0kVA (2.0kW)
AG-250kNG	3Φ200V/220V, 7.5kVA	3Φ200V/220V, 7.5kVA (2.5kW)
AG-20, 50kNI, IS	3Φ200V/220V, 4.0kVA	3Φ200V/220V, 5.0kVA (1.2kW)
AG-100kNI, IS	3Φ200V/220V, 6.0kVA	3Φ200V/220V, 7.0kVA (2.0kW)
AG-250kNI, IS	3Φ200V/220V, 7.5kVA	3Φ200V/220V, 7.5kVA (2.5kW)

\*2 Provide a separate power supply for the PC running the software.

## 3. Software (option)

Software	P/N
TRAPEZIUM X Set	345-47653
TRAPEZIUM X Single	345-47653-01
TRAPEZIUM X Cycle	345-47653-02
TRAPEZIUM X Control	345-47653-03
TRAPEZIUM X Texture	345-47653-04

## Others

- AG-A/B/D/I/IS internal extensometer amplifiers cannot be used with the retrofit. A separate AG-X amplifier and CAL cable are required.
- To use an analog recorder after the AG-C/E retrofit, a separate desk is required for the analog recorder.
- The addition of options or modifications may be required to use optional or special functions, such as air chuck synchronization. Consult your Shimadzu representative.
- The model AG-A/B marker function is not included. If required, consult your Shimadzu representative.
- Consult your Shimadzu representative to upgrade to the ultra-low-speed model (0.00005 mm/minute).
- If multiple load cells are used, a CAL cable and calibration are required for each load cell.
- The load cell guaranteed accuracy remains unchanged after the retrofit.
- Cycle testing is not possible for the trapezoidal screw specification, as tightening of the load-direction switching nut is required.
- To change a gravitational metric system Autograph to SI units, SI weights (or Proving ring) are required.

\*Windows 7 is a registered trademark in the United States and other countries of Microsoft corporation.



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