

# ROCK DIRECT SHEAR - HYDRAULIC TEST MACHINE

## 101-R0158-SERIES



### 101-R0158-20 ROCK DIRECT SHEAR - HYDRAULIC TEST MACHINE

#### STANDARDS: ASTM D5607, ISRM

Used to determine the strength and slope stability of rock size max 115x125 mm or cores max. diameter 102 mm, both in the field and in the laboratory.

The technique enables the engineer to select specimens of rock from exposed faces or bore holes, observe orientation of fault lines, then set and test the fault in the shear box.

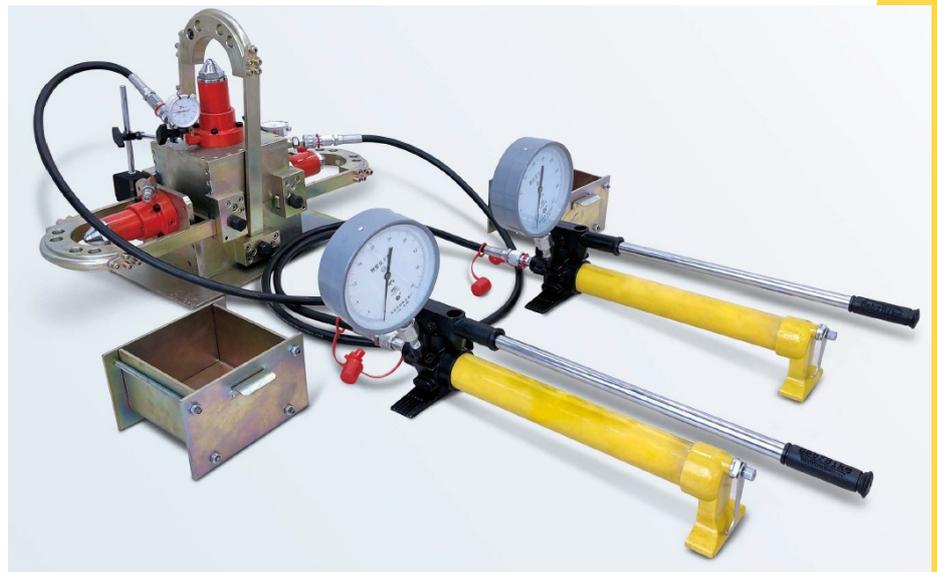
The apparatus consists of a diagonally split box assembly. The upper half incorporates a vertical ram for compressive loading, and the lower half, two horizontal rams for reversible shearing action. The force applied by the horizontal ram is aligned with the centre of the box and the discontinuity in the specimen. Pressure is applied to the rams by means of hand-operated hydraulic pumps.

#### NOTE:

1. For ASTM compliance the kit needs to be upgraded to 4 Precision dial gauges 25 x 0.002mm or better to provide averaging of the movement across the frame system. We would recommend 101-V0056-D25
2. The system can be upgraded to be fully digital with data logger

#### 101-V0056-D25

DIAL DIGITAL INDICATOR 25;4 X 0;001 MM - RS232 (4 required for ASTM)



Kit Includes		Specification	
Item	Quantity		
Main Shear Assembly	1	Dimensions of shear box (mm)	160x150x200 (LxWxH)
Specimen box	6	Load application	Hydraulic via two single speed hand pump
Hydraulic Pumps	2	Pressure gauge	40Mpa
Pressure gauges	2	Horizontal displacement	Dial gauge 10 mm travel x 0.01 mm
Dial gauge 25 x 0.01mm	2	Dimension of package	480x730x250 (LxWxH) 120kg
Tool Set	1		

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# ROCK DIRECT SHEAR - HY- DRAULIC TEST MACHINE

## 101-R0158-SERIES

**MatCivTest**  
MATERIAL CIVIL TEST EQUIPMENT

### 101-R0158-25 ROCK DIRECT SHEAR - HYDRAULIC TEST MACHINE

#### FULL DATA LOGGING

#### STANDARDS: ASTM D5607, ISRM

This kit includes the standard Shear machine as described above code 101-R0158-25 plus the data logging system described on the following pages with 7 transducers and associated hardware



#### **Kit Includes**

CODE		ITEM	QTY
<b>101-R0158-25</b>	<b>SHEAR MACHINE</b>	MAIN SHEAR ASSEMBLY	1
		SPECIMEN BOX	6
		HYDRAULIC PUMPS	2
		PRESSURE GAUGES	2
		TOOL SET	1
<b>101-V0160-01</b>	<b>DATA LOGGER KIT</b>		
	101-V0160-10	10 CHANNEL DATA LOGGER	1
	101-V0120-001	CASE HEAVY DUTY 515X415X158MM - BLACK	1
	101-V0070-025A-18SM	TRANSDUCER TYPE "A" - 25 MM POT SQUARE	5
	101-V0056-90	HOLDER ONLY - MAGNETIC FOR DISPLACE TRANSDUCER	5
	101-V0067-350	TRANSDUCER PRESSURE 350 BAR 1/4" BSPF	2
	101-0530a-101-10sr	TEE - SWIVEL NUT RUN TEE 10SR	2
	101-0530a-002-10ssf-1/4m	NIPPLE SWIVEL NUT 10S STUD CONNECTOR BSPPM 1/4"	2



# DATA LOGGER

## 10 CHANNEL

### 101-V0160-10



#### About Data Logger

A 10-channel type data logger that supports all channel isolated and multi-function input. It can measure various signals such as voltage and temperature. It operates recording at intervals of 10ms to 1 hour. Also available is an optional Wireless LAN unit enables wireless measurement and remote monitoring.

#### G-REMOTE

The system supports the new Remote control service "G-REMOTE", which makes your measuring more efficient.

\*G-REMOTE is offered for limited areas only.

Remote control and the data recording becomes easier by using web browser from anywhere you have an internet connection. The recorded data can be backed up to a dedicated cloud server.

Remote control & Data storage

#### Web server function

This function allows the GL unit settings and measurement values to be monitored using a web browser within the local network. Easy to set up and control via PC without installing software.



#### Standard Included PC Software

#### Up to 10 units can be connected

Easy to use software with simple operation and sophisticated display design.

#### Main Functions

- Various waveforms display
- Connected device search function
- Scheduling Function
- Search list display function
- Statistical display of any range (max, min, mean, P-P)
- Extract and save data
- The recording synchronization with multiple devices and automatic file synthesis function
- The direct-Excel function
- Save all playback data or convert between cursors

Check, record and save the waveform to your PC

Standard Included PC Software

This function displays a list of the time history of alarm occurrence/clearing.



Alarms can be checked while data is being recorded, allowing the user to look them back later.

# DATA LOGGER

## 10 CHANNEL

### 101-V0162-10

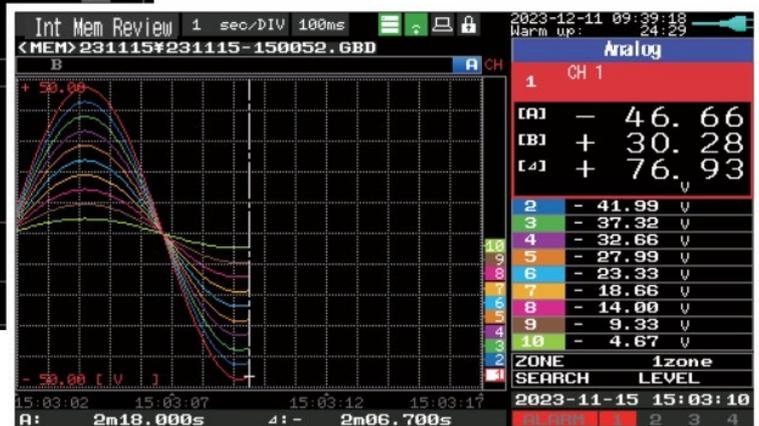
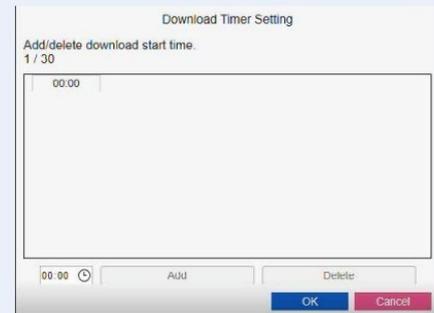


#### Main Functions

- Various waveforms display
- Connected device search function
- Scheduling Function
- Search list display function
- Statistical display of any range (max, min, mean, P-P)
- Extract and save data
- The recording synchronization with multiple devices and automatic file synthesis function
- The direct-Excel function
- Save all playback data or convert between cursors

#### Download Timer

Transfer data automatically from GL260 to PC at specified time



#### New Features

##### Alarm History Function

- Easy search of abnormal event dates and times history

##### Inter-CH operation Function

- New calculation functions have been added

##### Memory Loop Function

- Enables recording for longer periods of time

#### 8GB memory for reliable long-term measurement

Recording time example (when only 10 analog channels are used, 2 GB recorded)\*1

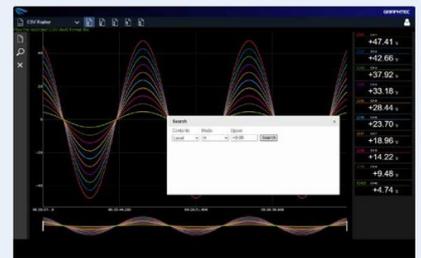
Sampling Interval*2	10ms	50ms	100ms	200ms	500ms	1s
GBD Format	41 days	88 days	103 days	207 days	Over 365	Over 365
CSV Format	3 days	12 days	18 days	36 days	91 days	182 days

\*1: Recording times are approximate.

\*2: Depending on the sampling interval, the number of channels are limited. 10ms: 1ch, 20ms: 2ch, 50ms: 5ch

#### CSV replay

Play the data recorded in CSV files



# DATA LOGGER

## 10 CHANNEL

### 101-V0162-10



#### Specifications

Item		Description
Analog input	Number of channels	10ch / Screw terminal (M3)
	Type	Scans channels for sampling, All channels isolated, balanced input
	Measurement range	Voltage: 20mV - 100V, 1-5V F.S.
		Thermocouple: K, J, E, T, R, S, B, N, C and (the old W: WRe5-26) Humidity: 0 - 100% (optional item B-530 is required)
	Filter	Off, 2, 5, 10, 20, 40 (moving average in selected number)
Max. input voltage	Between(+) / (-) terminal	20mV - 1V range: 60V p-p 2V - 100V range: 110V p-p
		Channels ((-) / (-)): 60 V p-p Channel / GND: 60 V p-p
External input (*1)	Number of channels	Trigger of Sampling (1 channel), or External Sample Inputs 1ch Logic / Pulse (4 channel)
	Pulse input	Rotation count (RPM) mode(*2), Accumulating count mode, Instant count mode Max. input frequency: 50kHz / Max. count: 50kc / sampling
External output (*1)		Alarm output: 4ch
Scaling function		Analog channel, Pulse channel
Sampling interval		10ms - 1h (10ms to 50ms: voltage only, limited number of CH), External signal
A/D converter		$\Delta\Sigma$ type, 16Bit (effective resolution: 1/40,000 of $\pm$ range)
PC I/F		USB2.0, wireless LAN (optional item B-568 is required)
Storage medium (*3)	Storage	Built-in memory: approx. 8GB, SD card slot: 1
	Data format	GBD / CSV
Capturing mode		OFF (default), Ring, Relay
Other functions		Calculation function, Trigger, Alarm function, Data backup function(*4)
Display		4.3" TFT (WQVGA: 480 x 272 dots)
Operating environment (*5)		0 - 45°C, 5 - 85% RH
Power source	AC adaptor	AC100 - 240V / 50 - 60Hz
	DC input	DC8.5 - 24V (optional item B-514 is required)
	Battery pack	DC7.2V(2875mAh)(optional item B-573 is required)
Power consumption		Max. 36VA (when AC100V)
Dimensions		188(W) x 117(D) x 42(H) mm
Weight		500g (excluding AC adaptor and battery pack)
Vibration resistance		Equivalent to Automobile parts Type 1 Class A

#### Cloud service (G-REMOTE)

(\*Additional charge for use)

Item	Description
Supported OS (*6)	Windows11/10
Supported WEB browser	Google Chrome (recommened), Microsoft Edge, Firefox (*Internet browser supporting HTML5)
Service content	<Remote control service> Easy remote control and confirmation of measurement data from G-REMOTE on a browser via an Internet connection
	<Data save service> Storing data on Graphtec cloud servers via Internet connection
	* For more information about product, please check the web site.

**DATA LOGGER  
10 CHANNEL KIT  
101-V0160-01**



**101-C0160-01 is a Complete Kit with the 10 Channel data logger installed into POLYPROPYLENE HEAVY-DUTY O-RING SEALED CASE**

To keep the equipment safe from water, dust and knocks! Pressure relief valve allows for gradual pressure equalisation

The Kit includes installed power supplies into the integral carry case with 8 sockets for external transducer plug connections and other required components.

