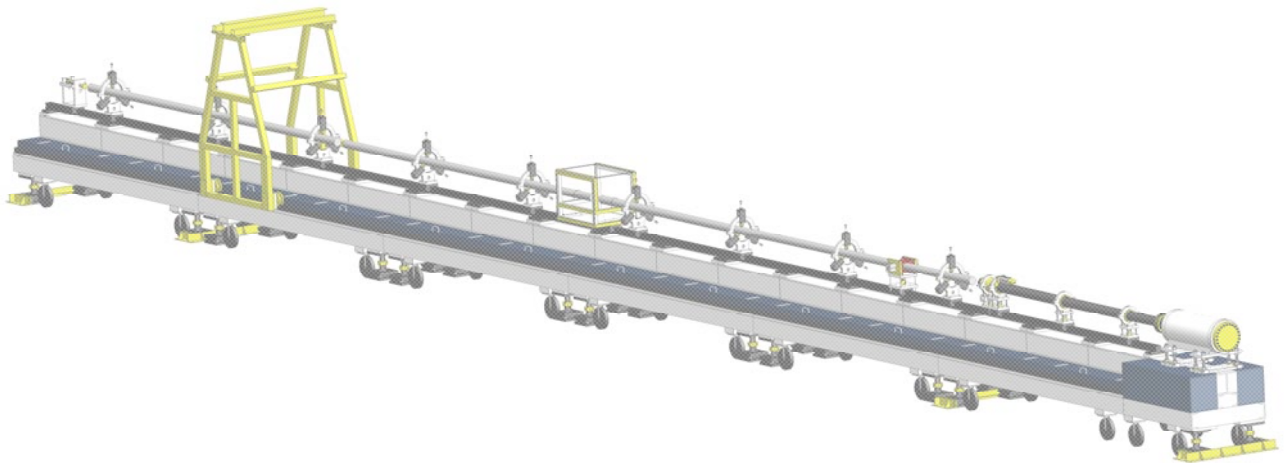


Series of High-Strain-Rate Test Apparatus

LW-9397

Split Hopkinson Pressure Bar Tester



LW-9397A: For bar system of 30~75 mm in diameter

LW-9397B: For bar system of 12~25 mm in diameter

Design & Manufacture

Long Win Science & Technology Corporation

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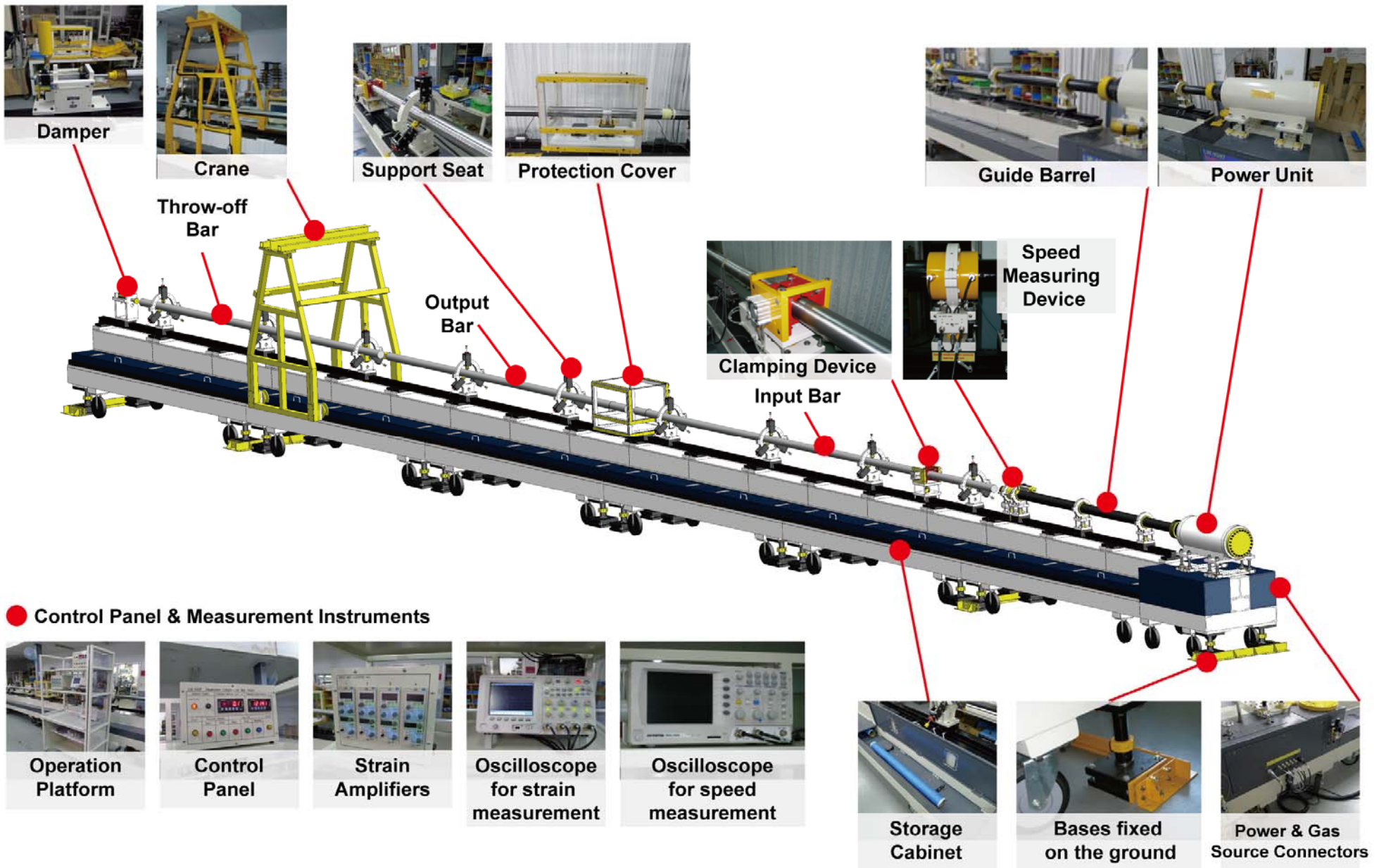
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I. System Drawing of SHPB – 9397A



II. More Photos of 9397B



Fig 1. 9397B: System Overview



Fig 2. Pressure Tank



Fig 3. Guide Barrel



Fig 4. Speed Measurement Device



Fig 5. Support Seats & Protection Cover



Fig 6. Damper



Fig 7. Control Panel

III. System Specification

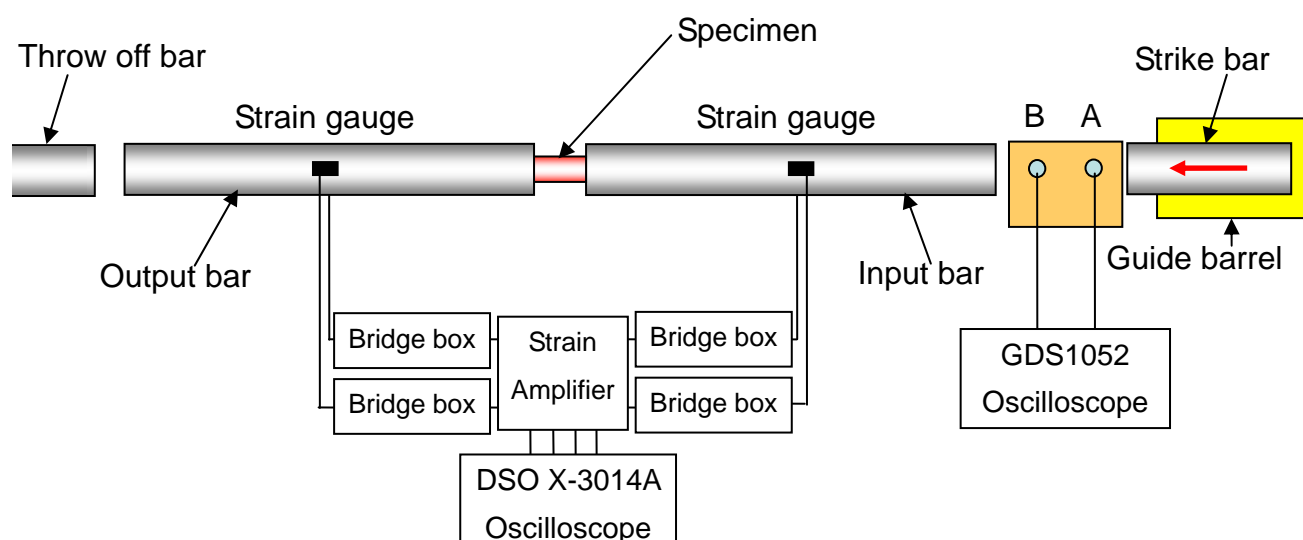
(I) LW-9397A

No.	Item	Description		Remark
1.	Power Unit	Pressure tank	Volume: 20 liter	Spec. adjustable
2.		Operation range	0~40 kg/cm ²	
3.		Supplied gas	Compressed nitrogen gas, including regulator and related assembly	
4.	Control Panel	Pressure display and setting		
5.		For system operation, indication, interlock switch for safety issues		
6.		Alarm or buzzer before firing		
7.	Clamping Device	Diameter is varied depending on the diameter of bars. It is used for holding input bar after energy is transmitted to avoid strike bar is popped out of the guide barrel.		
8.	Damper	It is to absorb residual energy after each test. With a set of oil cylinder and can be repositioned by a manual toggle switch.		
9.	Protection Cover	Made of clear PC board and metal frame;		
10.	Support Seats	8 sets for bar system of 75 mm in diameter; 3-point supporting, easy for bars' alignment		Qty adjustable
11.	Crane	With track along the apparatus for easy movement; It is to carry bars with larger length and diameters.		Optional
12.	Speed	Optical sensor	2 sets	
13.	Measurement	Oscilloscope	Model: GW GDS1052	
14.	Strain Measurement	Amplifier	1. NMB DAS-406B (DC to 220 kHz) or 2. NEC AS2503 (DC to 500 K Hz)	Spec. adjustable
15.		Oscilloscope	Agilent DSO X-3014A	
16.	Dimension	1.2 (W) × 1.4 (H) × 20 (L) M		Ref.
17.	Power Source	AC220V, single phase, 50/60 Hz, 10 Amp		Prepared by clients
18.	Compressed Air Source	5~7 kg/cm ² Air consumption: < 1 liter/min.		
19.	Gas Source	Nitrogen gas cylinders		

(II) LW-9397B

No.	Item	Description		Remark
1.	Power Unit	Pressure tank	Volume: 5 liter	Spec. adjustable
2.		Operation range	0~40 kg/cm ²	
3.		Supplied gas	Compressed nitrogen gas, including regulator and related assembly	
4.	Control Panel	Pressure display and setting		
5.		For system operation, indication, interlock switch for safety issues		
6.		Alarm or buzzer before firing		
7.	Clamping Device	Diameter is varied depending on the diameter of bars. It is used for holding input bar after energy is transmitted to avoid strike bar is popped out of the guide barrel.		
8.	Damper	It is to absorb residual energy after each test. With a set of oil cylinder and can be repositioned by a manual toggle switch.		
9.	Protection Cover	Made of clear PC board and metal frame;		
10.	Support Seats	6 sets; 3-point supporting, easy for bars' alignment		Qty adjustable
11.	Speed	Optical sensor	2 sets	
12.	Measurement	Oscilloscope	Model: GW GDS1052	
13.	Strain Measurement	Amplifier	1. NMB DAS-406B (DC to 220 kHz) or 2. NEC AS2503 (DC to 500 K Hz)	Spec. adjustable
14.		Oscilloscope	Agilent DSO X-3014A	
15.	Dimension	0.6 (W) × 1.3 (H) × 6 (L) M		(Ref.)
16.	Power Source	AC220V, single phase, 50/60 Hz, 10 Amp		Prepared by clients
17.	Compressed Air Source	5~7 kg/cm ² Air consumption: < 1 liter/min.		
18.	Gas Source	Nitrogen gas cylinders		

IV. Bar Options



1. Dimension

Model	Nominal Diameter*	Length of				
		Input bar	Output bar	Strike bar	Throw-off bar	Guide barrel
	mm	m	m	mm	m	m
9397A	75	5.4	5.4	300~2000	3	3
	50	4	4	200~1200	2	3
	30	3	3	100~1000	2	3
9397B	25	1.5	1.5	100~1000	1.5	1.5
	18	1.5	1.5	100~1000	1.5	1.5
	15	1.5	1.5	100~1000	1.5	1.5
	12	1.2	1.2	100~1000	1.5	1.5

* The diameter of bar system can be modified according to clients' need. It is very welcomed to discuss with us.

2. Material

Model	Bar	Options*						
		SAE 1045	A7075-T6	SCM440 HRC30	SK-4	SUS630 H1150	Ti-6Al-4 V alloy	SKH-51
9397A	Input	V	V	V				
	Output	V	V	V				
	Strike	V	V	V				
	Throw-off	V	V					
9397B	Input	V	V	V	V	φ 12~17.1 mm	φ 12~18 mm	φ 5~12 mm
	Output	V	V	V	V			
	Strike	V	V	V	V			
	Throw-off	V	V					

* Yield strength of each option:

A7075-T6: >500 MPa;

SCM440: >500 MPa;

SK-4: >500 MPa;

SUS630_H1150: >950 MPa;

Ti-6Al-4V alloy: >950 MPa;

SKH-51: >1,800 MPa;

* Other options about bar material can be discussed based on clients' requirement.