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Options

40 × 40 mm

60 × 60 mm

80 × 80 mm

85 × 85 mm

100 × 100 mm

120 × 120 mm

Others



GSC-01



参照 G108

GSC-02



参照 G109

SHOT-702



参照 G110

GIP-101



参照 G111

Standard driver (full step/half step)

0.75A/phase rated motor or lower

Single axis

1 – 2 axes

1 – 2 axes

Single axis

D15RP-CA
cableD15RP-CA
cableD15RP-CA
cableD15RP-CA
cableOSMS-60/80ZF
OSMS-40: Not compatibleD15RP-CA
cable(OSMS20/26:
D15D15A cable)D15RP-CA
cable(OSMS20/26:
D15D15A cable)D15RP-CA
cable(OSMS20/26:
D15D15A cable)D15RP-CA
cable(OSMS20/26:
D15D15A cable)

Not compatible

Not compatible

D15D15A
cable

Not compatible

* OSMS-YAW compatible
D15D15A cable

Not compatible

Not compatible

Not compatible

Not compatible

Not compatible

Not compatible

Not compatible

Not compatible

Not compatible

Not compatible

Not compatible

Not compatible

Stepping Motor Stage

Stages with built in
Glass-scale EncoderOSMS-ZF
OSMS-40/60YAW
SGSP-ACT-B0
OSMS-40
seriesTAMM40/60
OSMS-60
HPS
HDS
OSMS20/26
seriesOSMS33
OSMS-80/120/160YAW
TAMM100
KLSA/KLSS
seriesHST
seriesOSMS(CS)
seriesHST(GS)
series

Part Name		1 axis Stage Controller	2 axis Stage Controller	2 axis Stage Controller	Intelligent Positioning System
Part Number		GSC-01	GSC-02	SHOT-702	GIP-101
Primary Functions	Controller Function	○	○	○	○
	Number of Control Axes	1	2	2	1
	Stored Program Control	—	△	—	—
	Feedback Control	—	—	—	—
	Circular Interpolation Control	—	—	—	—
	Linear Interpolation Control	—	—	—	—
	Driver Function	Standard	Standard	Standard	Micro-step
	Micro-step (Max. Division)	2	2 (half step only)	250	250
General Specifications	Driving Current (A/phase)	0.8	0.8	1.1	0.75
	Power Voltage	DC24V 1.2A	DC24V 2A	AC100 — 240V 50/60Hz	AC100—240V 50/60Hz
	Power Consumption	30VA	48VA	50VA	100VA
	External Dimensions (W×H×Dmm)	47×90×125	180×40×125	260×70×280	145×205×81
	Weight (kg)	0.4	0.7	2.8	2.0
Interface	GP-IB	—	—	—	—
	RS232C	○	○	○	○
	USB	—	—	—	—
	Ethernet	—	—	—	—

HSC-103	SHOT-302GS	SHOT-304GS	HIT-M	HIT-S/HIT-SH	PGC-04-U
					
参照 G112	参照 G113	参照 G113	参照 G114	参照 G114	参照 G116
Micro-step driver					
0.75, 1.4A/phase rated motor or lower	1.4A/phase rated motor or lower	1.4A/phase rated motor or lower	1.4A/phase rated motor or lower		
1 – 3 axes	1 – 2 axes	1 – 4 axes	1 – 8 axes		4 axes
D15RP-CA cable (OSMS-40ZF SGSP-ACT-B0 Not compatible)	D15RP-CA cable	D15RP-CA cable	D15RP-CA cable (*HIT-SH:Not compatible)		Driver/ MINI-CA-SG cable
D15RP-CA cable (OSMS20/26: D15D15A cable)	D15RP-CA cable (OSMS20/26: D15D15A cable)	D15RP-CA cable (OSMS20/26: D15D15A cable)	D15RP-CA cable (OSMS20/26: D15D15A cable) (*HIT-SH:Not compatible)		Driver/ MINI-CA-SG cable (OSMS20/26: DAC-SG cable)
D15D15A cable	D15D15A cable	D15D15A cable	D15D15A cable (*HIT-SH:Not compatible)		Driver/DAC-SG cable
D15D15A cable	D15D15A cable	D15D15A cable	D15D15A cable (*HIT-S:Not compatible)		Driver/DAC-SG cable
Not compatible	D15D15A/GSEF cable	D15D15A/GSEF cable	D15D15A/GSEF cable (*HIT-SH:Not compatible)		Not compatible
Not compatible	D15D15A/GSEF cable	D15D15A/GSEF cable	D15D15A/GSEF cable (*HIT-S:Not compatible)		Not compatible

3 axis Stage Controller	2 axis Stage Controller	4 axis Stage Controller	Extensible Stage Controller (Master)	Extensible Stage Controller (Slave)	Pulus Generating Controller
HSC-103	SHOT-302GS	SHOT-304GS	HIT-M	HIT-S/HIT-SH	PGC-04-U
○	○		○	—	○
3	2	4	1 – 8	—	4
○	○		○	—	○
—	Glass scale		*Glass scale		—
○	○		○	—	○
3 axes	2 axes		3 axes	—	3 axes
Standard	Micro-step		—	Micro-step	—
40	250		—	250	—
0.75/1.4	1.4		—	1.1/1.4	—
AC100–240V 50/60Hz	AC100–240V 50/60Hz		DC24V 1A (HIT-SH: 2A)		DC24V 1.4A
200VA	160VA	300VA	24VA		34VA
260×90×280	270×118×302		130×120×50 (HIT-SH: 130×120×65)		180×140×60
3.3	5.5	6.5	0.62	0.63/0.72	1.0
—	○	○	—	—	—
—	○	○	○	—	—
○	○	○	○	—	○
—	—	—	○	—	○

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40 × 40 mm

60 × 60 mm

80 × 80 mm

85 × 85 mm

100 × 100 mm

120 × 120 mm

Others

Single axis Stage Controller | GSC-01

RoHS

CE

Catalog
Code

W9042

Low cost single axis stage controller with built-in 5-phase stepping motor driver.

- Can be operated by computer control using the RS232C interface, by the jog switch on the front panel, or by TTL I/O.



Guide

- ▶ Sample programs are available for download from our website.
 - SG Sample 32/64-bit version for Windows® (only for RS232C)
 - LabVIEW for RS232C (for v.5.1/v.6i/v7.1/v.8.6/v.2012/v.2013/v.2014/v.2015)

Attention

- ▶ The GSC-01 requires an external power supply (24VDC, 2A output). The PAT-001-POW1 (AC adapter) can be purchased with the controller or power can be provided by the end user.

Part Name	Part Number
Single axis Stage Controller	GSC-01
AC Adapter	PAT-001-POW1

Primary Functions

Controller Function	○
Number of Control Axes	1
Stored Program Control	—
Feedback Control	—
Circular Interpolation Control	—
Linear Interpolation Control	—
Driver Function	Standard
Micro-step (Max. Division)	2
Driving Current (A/phase)	0.2 – 0.8

General Specifications

Power Voltage	DC24V 2A
Power Consumption	48VA
Operating Temperature	5 – 40°C
Storage Temperature	—
Ambient Humidity	20 – 80%RH (without condensation)
External Dimensions (WxHxDmm)	47×125×90
Weight (kg)	0.4

Interface

GP-IB	—
RS232C	○
USB	—
Ethernet	—

Performance Specifications

Coordinate Indication Range	—
Max. Travel to Set	16,777,215
Max. Driving Speed (pps)	20,000
Min. Driving Speed (pps)	100
Acceleration/Deceleration Time (ms)	0 – 1,000

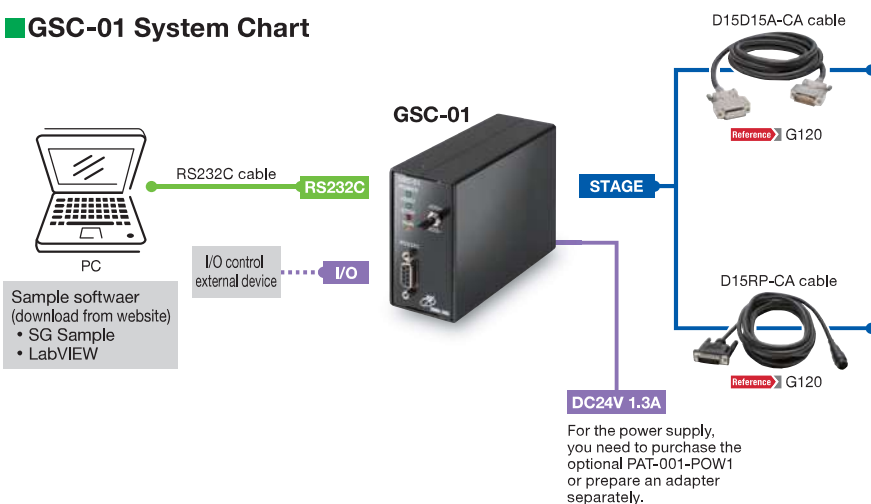
I/O Specification

Origin Sensor	—
Proximity Sensor	—
CW (+) Limit	○
CCW (–) Limit	○
General Purpose Input	4 points
General Purpose Output	4 points
Control Input	3 points
Control Output	—
Trigger Output	—

Control Command

Machine Origin Return	○
Theoretical Origin Setting	○
Relative Position Drive	○
Absolute Position Drive	○
Jog Operation	○
Position Appointment	—
Circular Interpolation Control	—
Linear Interpolation Control	—
Drive	○
Deceleration Stop	○
Emergency Stop	○
Speed Setting	○
Motor Free/Hold	○
Port Input	○
Port Output	○
Origin Offset Setting	○
Jog Operation Speed Setting	○

GSC-01 System Chart



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Options

40 × 40 mm
60 × 60 mm
80 × 80 mm
85 × 85 mm
100 × 100 mm
120 × 120 mm
Others

Low cost two axis stage controller with built-in 5-phase stepping motor driver.

- Can be operated by computer control using the RS232C interface. Manual and programmed control is available using optional SJT-02 dedicated controller.



Guide

- ▶ Sample programs are available for download from our website.
 - SG Sample 32/64-bit version for Windows® (only for RS232C)
 - LabVIEW for RS232C (for v.5.1/v.6i/v.7.1/v.8.6/v.2010/v.2012/v.2013/v.2014/v.2015)

Attention

- ▶ The GSC-02 requires an external power supply (24VDC, 2A output). The PAT-001-POW1 (AC adapter) can be purchased with the controller or power can be provided by the end user.

Part Name	Part Number
2 axis Stage Controller	GSC-02
Joystick Terminal	SJT-02
AC Adapter	PAT-001-POW1

Primary Functions

Controller Function	○
Number of Control Axes	2
Stored Program Control	△
Feedback Control	—
Circular Interpolation Control	—
Linear Interpolation Control	—
Driver Function	Standard
Micro-step (Max. Division)	2 (half step only)
Driving Current (A/phase)	0.3 – 0.8

△...Programs can be controlled using SJT-02.

General Specifications

Power Voltage	DC24V 2A
Power Consumption	48VA
Operating Temperature	5 – 40°C
Storage Temperature	–20 – 60°C
Ambient Humidity	20 – 80%RH (without condensation)
External Dimensions (W×H×Dmm)	180×40×125
Weight (kg)	0.7

Interface

GP-IB	—
RS232C	○
USB	—
Ethernet	—

Optional

CJ-200A	—
JS-300	—
JB-400	—
SJT-02	○

Performance Specifications

Coordinate Indication Range	—
Max. Travel to Set	16,777,214
Max. Driving Speed (pps)	20,000
Min. Driving Speed (pps)	1
Acceleration/Deceleration Time (ms)	0 – 1,000

I/O Specification

Origin Sensor	○
Proximity Sensor	○
CW (+) Limit	○
CCW (–) Limit	○
General Purpose Input	—
General Purpose Output	—
Control Input	—
Control Output	—
Trigger Output	—

Control Command

Machine Origin Return	○
Theoretical Origin Setting	○
Relative Position Drive	○
Absolute Position Drive	—
Jog Operation	○
Position Appointment	—
Circular Interpolation Control	—
Linear Interpolation Control	—
Drive	○
Deceleration Stop	○
Emergency Stop	○
Speed Setting	○
Motor Free/Hold	○
Port Input	—
Port Output	—

GSC-02 System Chart



2 axis Stage Controller | SHOT-702

RoHS

CE

Catalog Code W9045

2 axis stage controller with built-in micro-step driver.

- Can be operated by computer control using the RS232C interface. Manual and programmed control is available using optional dedicated controllers (JS-300, JB-400).



Guide

- Sample programs are available for download from our website.
 - SG Sample 32/64-bit version for Windows® (only for RS232C)
 - LabVIEW for RS232C (for v.5.1/v.6/v.7.1/v.8.6/v.2010/v.2012/v.2013/v.2014/v.2015)

Part Name	Part Number
2 axis Stage Controller	SHOT-702
Joy Stick	JS-300
Jog Operation Box	JB-400
Jog Dial	JD-100
MDR Cable	MDR14-CA-2.5

Primary Functions

Controller Function	○
Number of Control Axes	2
Stored Program Control	—
Feedback Control	—
Circular Interpolation Control	—
Linear Interpolation Control	—
Driver Function	Micro-step
Micro-step (Max. Division)	250
Driving Current (A/phase)	0.1 – 1.1

General Specifications

Power Voltage	AC100 – 240V 50/60Hz
Power Consumption	50VA
Operating Temperature	5 – 40°C
Storage Temperature	–20 – 60°C
Ambient Humidity	20 – 80%RH (without condensation)
External Dimensions (WxHxDmm)	260x70x280
Weight (kg)	2.8

Interface

GP-IB	—
RS232C	○
USB	—
Ethernet	—

Optional

CJ-200A	—
JS-300	○
JB-400	○
JD-100	○
SJT-02	—

Performance Specifications

Coordinate Indication Range	—
Max. Travel to Set	268,435,455
Max. Driving Speed (pps)	500,000
Min. Driving Speed (pps)	1
Acceleration/Deceleration Time (ms)	1 – 1,000

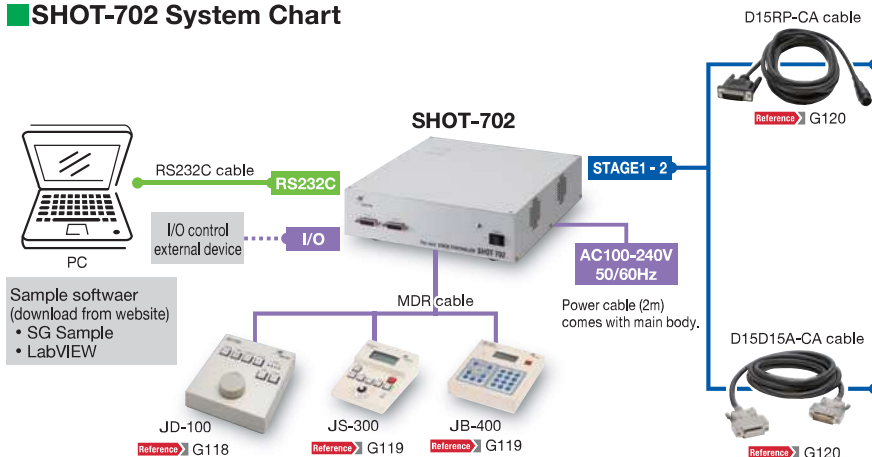
I/O Specification

Origin Sensor	○
Proximity Sensor	○
CW (+) Limit	○
CCW (–) Limit	○
General Purpose Input	1 point
General Purpose Output	1 point
Control Input	1 point
Control Output	1 point
Trigger Output	—

Control Command

Machine Origin Return	○
Theoretical Origin Setting	○
Relative Position Drive	○
Absolute Position Drive	○
Jog Operation	○
Position Appointment	—
Circular Interpolation Control	—
Linear Interpolation Control	—
Drive	○
Deceleration Stop	○
Emergency Stop	○
Speed Setting	○
Motor Free/Hold	○
Port Input	○
Port Output	○

SHOT-702 System Chart



Stepping Motor Stage



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Options

40 × 40 mm
60 × 60 mm
80 × 80 mm
85 × 85 mm
100 × 100 mm
120 × 120 mm
Others

Single axis controller with built-in micro-step driver and 5 buttons for quick access to memorized locations.

- Compatible with objective lens turrets, motorized zoom lens and other LASER accessory units in addition to motorized stages fitted with 5-phase stepping motor.



Guide

- ▶ Sample programs are available for download from our website.
 - SG Sample 32/64-bit version for Windows® (only for RS232C)
 - LabVIEW for RS232C (for v.5.1/v.6i/v7.1/v.8.6/v.2010/v.2012/v.2013/v.2014/v.2015)

Part Name	Part Number
Intelligent Positioning System	GIP-101

Primary Functions

Controller Function	○
Number of Control Axes	1
Stored Program Control	—
Feedback Control	—
Circular Interpolation Control	—
Linear Interpolation Control	—
Driver Function	Micro-step
Micro-step (Max. Division)	250
Driving Current (A/phase)	0.23 – 0.75

General Specifications

Power Voltage	AC100 – 240V 50/60Hz
Power Consumption	100VA
Operating Temperature	0 – 40°C
Storage Temperature	—
Ambient Humidity	20 – 80%RH (without condensation)
External Dimensions (WxHxDmm)	145x205x81
Weight (kg)	2

Interface

GP-IB	—
RS232C	○
USB	—
Ethernet	—

Performance Specifications

Coordinate Indication Range	—
Max. Travel to Set	16,777,214
Max. Driving Speed (pps)	22,000
Min. Driving Speed (pps)	50
Acceleration/Deceleration Time (ms)	20 – 1,000 16 steps

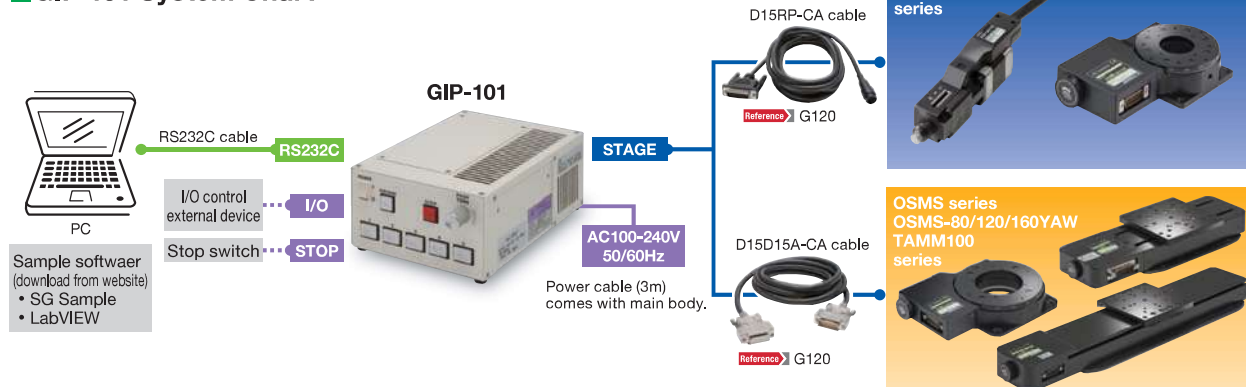
I/O Specification

Origin Sensor	○
Proximity Sensor	○
CW (+) Limit	○
CCW (–) Limit	○
General Purpose Input	—
General Purpose Output	—
Control Input	6 points
Control Output	1 point
Trigger Output	—

Control Command

Machine Origin Return	○
Theoretical Origin Setting	○
Relative Position Drive	○
Absolute Position Drive	○
Jog Operation	○
Position Appointment	○
Circular Interpolation Control	—
Linear Interpolation Control	—
Drive	○
Deceleration Stop	○
Emergency Stop	○
Speed Setting	○
Motor Free/Hold	○
Port Input	○
Port Output	○

GIP-101 System Chart



3 axis Stage Controllers | HSC-103

RoHS

CE

Catalog Code W9094

HSC-103 is designed to operate medium to high current 5-phase motor stages. The driver design reduces noise and vibration compared to older stepper motor drivers.

- USB communication (serial communication) from PC is available.
- Up to 3 axis motorized stages can be operated.



Guide

- ▶ Sample programs are available for download on our website.
 - SG Sample 32/64 bit version for Windows®
 - LabVIEW for RS232C (for v.2010/v.2012/v.2013/v.2014/v.2015)

Part Name	Part Number
3 axis Stage Controllers	HSC-103
Joy Stick	JD-100
Jog Operation Box	JS-300
Jog Dial	JB-400
MDR Cable	MDR14-CA-2.5

Primary Functions

Controller Function	○
Number of Control Axes	3
Stored Program Control	○
Feedback Control	—
Circular Interpolation Control	○
Linear Interpolation Control	3 axes
Driver Function	Micro-step
Micro-step (Max. Division)	40*1
Driving Current (A/phase)	1.4*2

*1 Division is fixed.
*2 0.75A/Phase is available by switching.

General Specifications

Power Voltage	AC100 – 240V 50/60Hz
Power Consumption	200VA
Operating Temperature	5 – 40°C
Storage Temperature	–20 – 60°C
Ambient Humidity	20 – 80%RH (without condensation)
External Dimensions (WxHxDmm)	260x260x95
Weight (kg)	3.3

Interface

GP-IB	—
RS232C	—
USB	○
Ethernet	—

Optional

CJ-200A	—
JS-300	○
JB-400	○
JD-100	○
SJT-02	—

Performance Specifications

Coordinate Indication Range	—
Max. Travel to Set	134,217,727
Max. Driving Speed (pps)	4,000,000
Min. Driving Speed (pps)	1
Acceleration/Deceleration Time (ms)	1 – 1,000

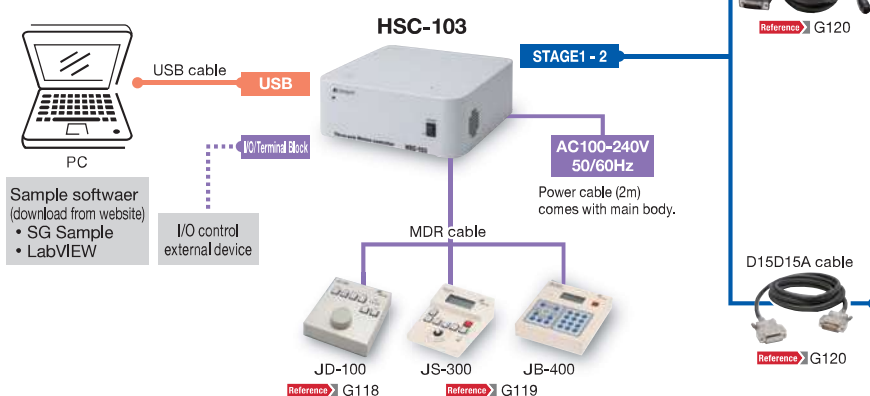
I/O Specification

Origin Sensor	○
Proximity Sensor	○
CW (+) Limit	○
CCW (–) Limit	○
General Purpose Input	4 points
General Purpose Output	4 points
Control Input	8points
Control Output	—
Trigger Output	—

Control Command

Machine Origin Return	○
Theoretical Origin Setting	○
Relative Position Drive	○
Absolute Position Drive	○
Jog Operation	○
Position Appointment	—
Circular Interpolation Control	○
Linear Interpolation Control	○
Drive	—
Deceleration Stop	○
Emergency Stop	○
Speed Setting	○
Motor Free/Hold	○
Port Input	○
Port Output	○

HSC-103 System Chart



Stepping Motor Stage



2 axis and 4 axis stage controllers with built-in display and micro-step driver.

Multiple operation modes:

- Computer control using RS232C/GP-IB/USB interfaces
- Manually operated using the optional control pad (CJ-200A) or dedicated controllers (JS-300, JB-400)
- Internally programmed using two banks of stored programs.
- Remotely operated by other devices using TTL I/O.
- Full closed loop control is possible when used in combination with stages equipped with built in glass-scales.



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- Sample programs are available for download from our website.
- SG Sample 32/64-bit version for Windows® (only for RS232C)
 - LabVIEW for RS232C (for v.5.1/v.6i/v7.1/v.8.6/v.2010/v.2012/v.2013/v.2014/v.2015)
 - LabVIEW for GP-IB (for v.5.1/v.6i/v7.1/v.8.6/v.2010/v.2012/v.2013/v.2014/v.20152)

Part Name	Part Number
2 axis Stage Controller	SHOT-302GS
4 axis Stage Controller	SHOT-304GS
Control Pad	CJ-200A
Joy Stick	JS-300
Jog Operation Box	JB-400
Jog Dial	JD-100
MDR Cable	MDR14-CA-2.5

Primary Functions

Part Number	SHOT-302GS	SHOT-304GS
Controller Function		○
Number of Control Axes	2	4
Stored Program Control		○
Feedback Control		GS
Circular Interpolation Control		○
Linear Interpolation Control		2 axes
Driver Function		Micro-step
Micro-step (Max. Division)		250
Driving Current (A/phase)		0.25 – 1.4
CJ-200A		Required

General Specifications

Power Voltage	AC100 – 240V 50/60Hz
Power Consumption	160VA 300VA
Operating Temperature	5 – 40°C
Storage Temperature	–20 – 60°C
Ambient Humidity	20 – 80%RH (without condensation)
External Dimensions (WxHxDmm)	270x302x118
Weight (kg)	5.5 6.5

Interface

GP-IB	○
RS232C	○
USB	○
Ethernet	—

Optional

CJ-200A	○
JS-300	○
JB-400	○
JD-100	○
SJT-02	—

Performance Specifications

Coordinate Indication Range	±999,999,999
Max. Travel to Set	268,435,455
Max. Driving Speed (pps)	500,000
Min. Driving Speed (pps)	1
Acceleration/Deceleration Time (ms)	0 – 1,000

I/O Specification

Origin Sensor	○
Proximity Sensor	○
CW (+) Limit	○
CCW (–) Limit	○
General Purpose Input	4 points
General Purpose Output	4 points
Control Input	15 points
Control Output	5 points
Trigger Output	○

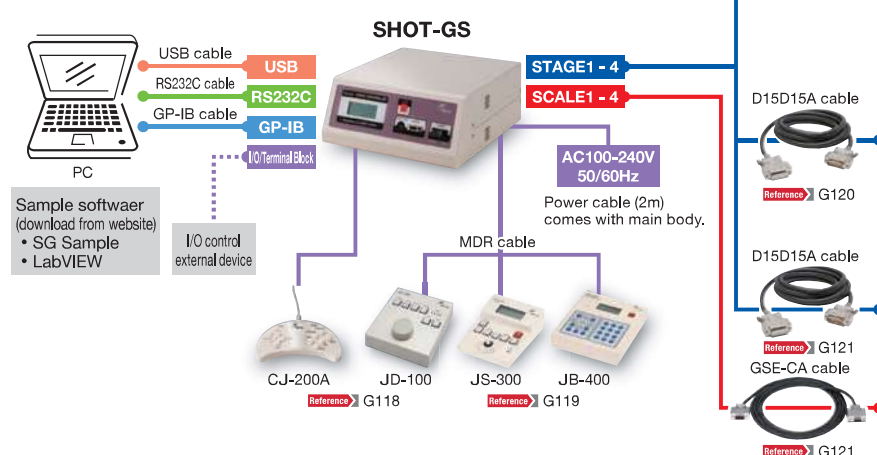
Control Command

Machine Origin Return	○
Theoretical Origin Setting	○
Relative Position Drive	○
Absolute Position Drive	○
Jog Operation	○
Position Appointment	—
Circular Interpolation Control	○
Linear Interpolation Control	○
Drive	○
Deceleration Stop	○
Emergency Stop	○
Speed Setting	○
Motor Free/Hold	○
Port Input	○
Port Output	○

Stepping Motor Stage



SHOT-302GS/304GS System Chart



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40 × 40 mm

60 × 60 mm

80 × 80 mm

85 × 85 mm

100 × 100 mm

120 × 120 mm

Others

Extensible Stage Controller | HIT-M/S/SH

RoHS

CE

Modular stage control system with Master controller and from one to eight slave Axes.

- Control with RS232C/USB/Ethernet interfaces is available.
- Full closed loop control is possible when used in positioning stage equipped with encoder.



Guide

- ▶ Sample programs are available for download on our website.
 - SG Sample 32/64 bit version for Windows®
 - LabVIEW for RS232C (for v.2014/v.2015)

Attention

- ▶ Power supply is DC+24V 1A. Depending on the number of stage axes, rated current of 2A (single axis) to 9A (8 axes) is required. Power supply is DC+24V 2A. Depending on the number of stage axes, rated current of 3A (single axis) to 17A (8 axes) is required. Please purchase the PAT-001-POW1 (AC adapter) or prepare a power supply separately.

Part Name	Part Number
Extensible Stage Controller (Master)	HIT-M
Extensible Stage Controller (Slave)	HIT-S
Extensible Stage Controller (Slave)	HIT-SH
LAN Cable	LAN-2
AC Adapter	PAT-001-POW1

Primary Functions

Part Number	HIT-M	HIT-S	HIT-SH
Controller Function	○	—	—
Number of Control Axes	8	—	—
Stored Program Control	○	—	—
Feedback Control	—	OSMS (CS)series	HST (GS) series
Circular Interpolation Control	○	—	—
Linear Interpolation Control	3 axes	—	—
Driver Function	—	Micro-step	Micro-step
Micro-step (Max., Division)	—	250	250
Driving Current (A/phase)	—	0.11 – 11.1	1.4 (Fixed)

General Specifications

Part Number	HIT-M	HIT-S	HIT-SH
Power Voltage	DC24V 1A		DC24V 2A
Power Consumption	24VA		48VA
Operating Temperature	5 – 40°C		
Storage Temperature	–20 – 60°C		
Ambient Humidity	20 – 80%RH (without condensation)		
External Dimensions (W×H×Dmm)	130×120×50	130×120×50	130×120×65
Weight (kg)	0.62	0.63	0.72

Interface

GP-IB	—
RS232C	○
USB	○
Ethernet	○

Optional

CJ-200A	—
JS-300	—
JB-400	—
JD-100	—
SJT-02	—

Performance Specifications

Coordinate Indication Range	—
Max. Travel to Set	134,217,727
Max. Driving Speed (pps)	500,000
Min. Driving Speed (pps)	1
Acceleration/Deceleration Time (ms)	1 – 1,000

I/O Specification

Origin Sensor	○
Proximity Sensor	○
CW (+) Limit	○
CCW (–) Limit	○
General Purpose Input	4 points
General Purpose Output	4 points
Control Input	—
Control Output	—
Trigger Output	—

Control Command

Machine Origin Return	○
Theoretical Origin Setting	○
Relative Position Drive	○
Absolute Position Drive	○
Jog Operation	○
Position Appointment	—
Circular Interpolation Control	○
Linear Interpolation Control	○
Drive	○
Deceleration Stop	○
Emergency Stop	○
Speed Setting	○
Motor Free/Hold	○
Port Input	○
Port Output	○

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40 × 40 mm

60 × 60 mm

80 × 80 mm

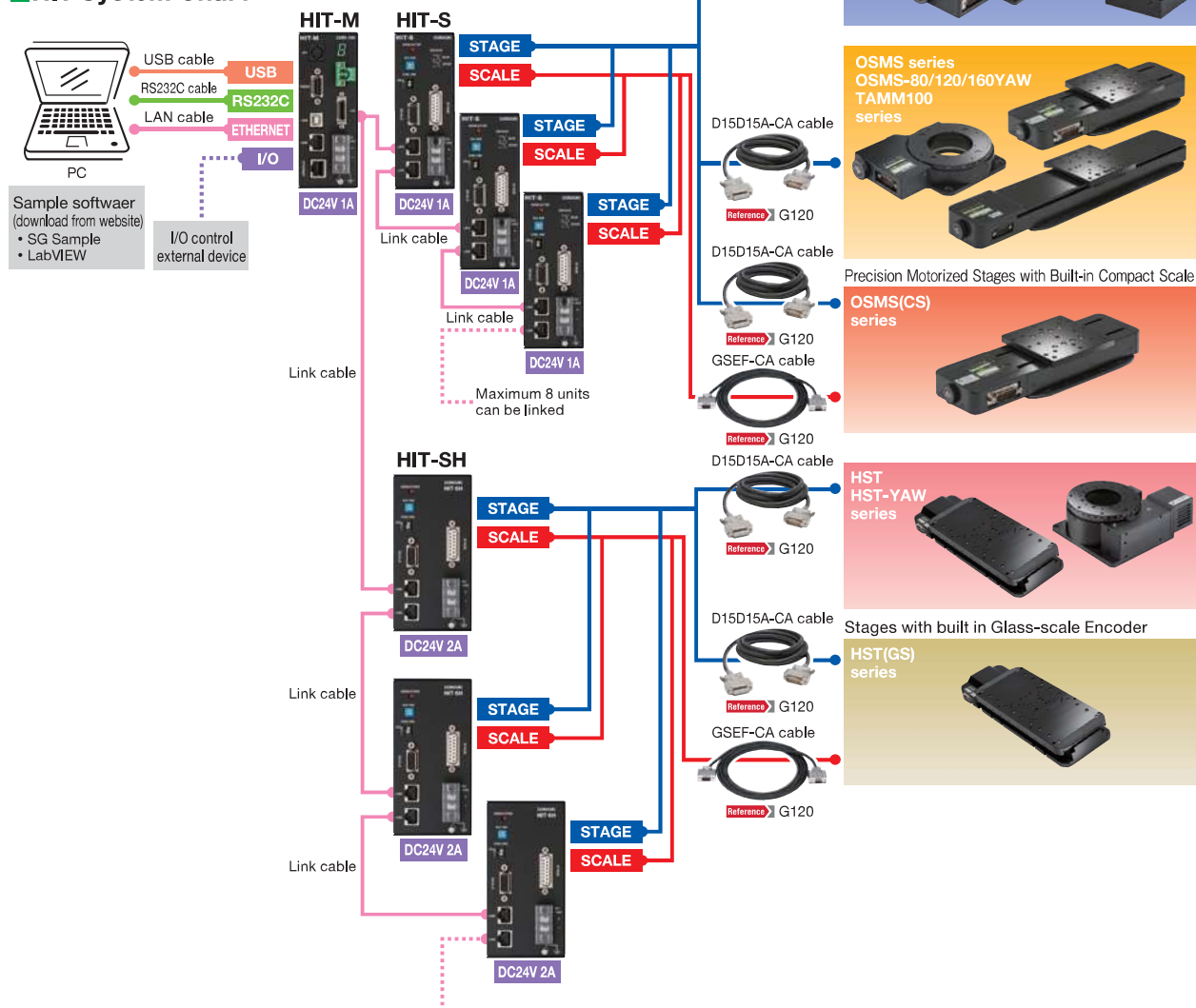
85 × 85 mm

100 × 100 mm

120 × 120 mm

Others

HIT System Chart



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85 × 85 mm

100 × 100 mm

120 × 120 mm

Others

Pulse Generating Controller | PGC-04-U

RoHS

CE

4-axis pulse generator type controller that can be connected to the various motor drivers.

- External control with USB and Ethernet interfaces are available.
- Can be manually operated by a Handy Terminal (JS-300, JB-400, JD-100).



Guide

- ▶ Sample programs are available for download from our website.
 - SG Sample 32/64-bit version for Windows® (only for RS232C)
 - Lab VIEW for RS232C (for v.2014/v.2015)

Attention

- ▶ Cable and motor driver are sold separately. Please purchase 5-phase stepping motor drivers MC-S0514ZU or prepare compatible driver of customer choice.
- ▶ Power supply is DC+24V 2A. You need to purchase the PAT-001-POW1 (AC adapter) or prepare an adapter separately.

Products Name	Part Number
Pulse Generating Controller	PGC-04-U
Joystick Terminal	JS-300
Jog Operation Box	JB-400
Jog Dial	JD-100
AC Adapter	PAT-001-POW1

Primary Functions

Controller Function	○
Number of Control Axes	4
Stored Program Control	○
Feedback Control	—
Circular Interpolation Control	○
Linear Interpolation Control	3 axes
Driver Function	—
Micro-step (Max. Division)	—
Driving Current (A/phase)	—

General Specifications

Power Voltage	DC24V
Power Consumption	1.4A
Operating Temperature	5 – 40°C
Storage Temperature	–20 – 60°C
Ambient Humidity	20 – 80%RH (without condensation)
External Dimensions (W×H×Dmm)	180×140×60
Weight (kg)	1.3

Interface

GP-IB	—
RS232C	—
USB	○
Ethernet	○

Optional

CJ-200A	—
JS-300	○
JB-400	○
JD-100	○
SJT-02	—

Performance Specifications

Coordinate Indication Range	—
Max. Travel to Set	134,217,727
Max. Driving Speed (pps)	4,000,000
Min. Driving Speed (pps)	1
Acceleration/Deceleration Time (ms)	1 – 1,000

I/O Specification

Origin Sensor	○
Proximity Sensor	○
CW (+) Limit	○
CCW (–) Limit	○
General Purpose Input	4 points
General Purpose Output	4 points
Control Input	—
Control Output	—
Trigger Output	—

Control Command

Machine Origin Return	○
Theoretical Origin Setting	○
Relative Position Drive	○
Absolute Position Drive	○
Jog Operation	○
Position Appointment	—
Circular Interpolation Control	○
Linear Interpolation Control	○
Drive	—
Deceleration Stop	○
Emergency Stop	○
Speed Setting	○
Motor Free/Hold	○
Port Input	○
Port Output	○

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40 × 40 mm

60 × 60 mm

80 × 80 mm

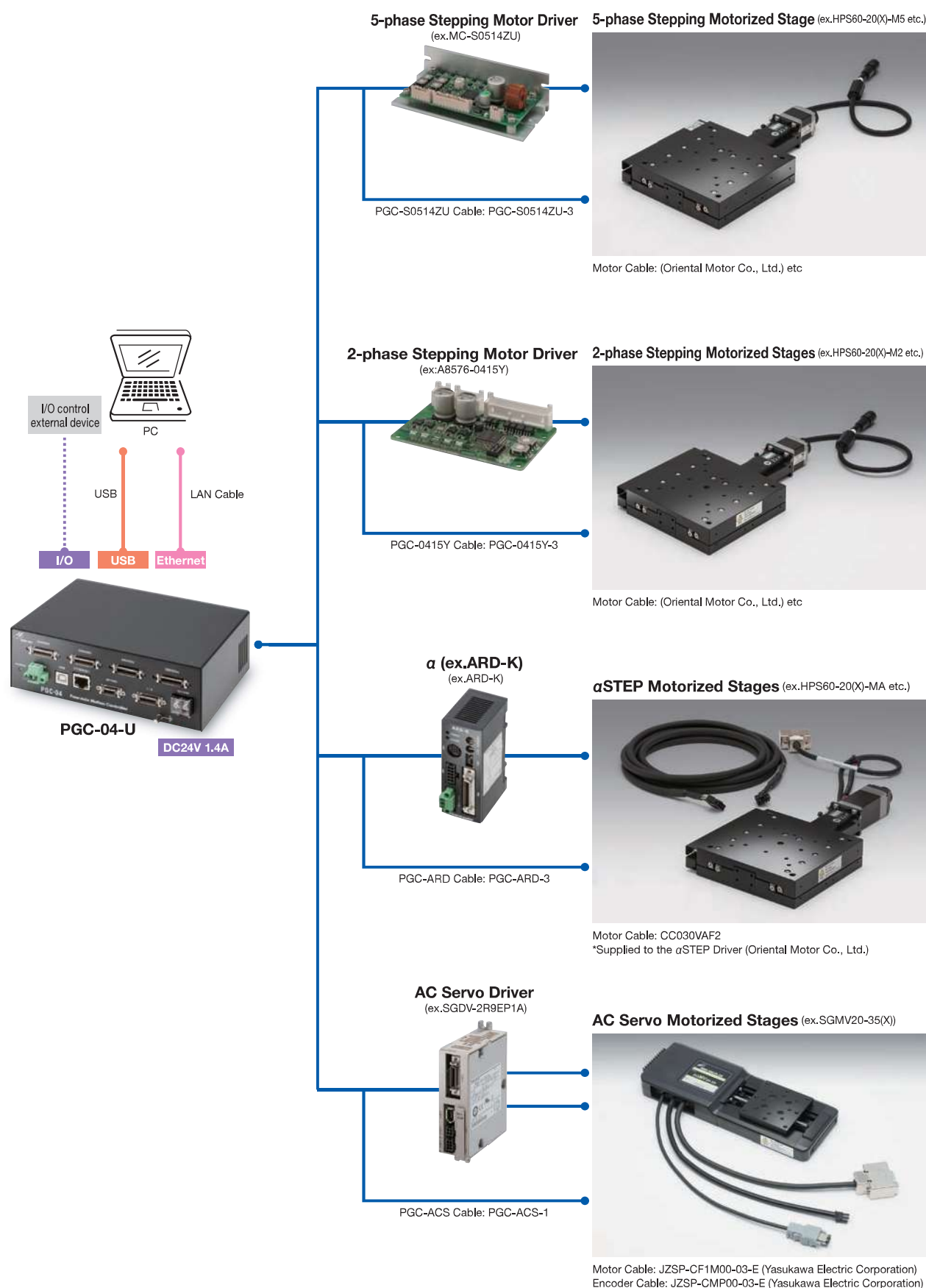
85 × 85 mm

100 × 100 mm

120 × 120 mm

Others

System Diagram



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60 × 60 mm

80 × 80 mm

85 × 85 mm

100 × 100 mm

120 × 120 mm

Others

Joystick Terminal Jog Dial

SJT-02
JD-100

RoHS

CE

SJT-02

Catalog Code **W9049**

Dedicated joystick terminal for the GSC-02 controller

- Enables manual operation of attached motorized stages.
- Internal program memory allows automatic operation without using a PC.



General Specifications

Power Supply	DC+24V Supplied from a 2 axis stage controller (GSC-02/SHOT-602).
Operating Temperature	5 – 40°C
Ambient Humidity	20 – 80%RH (without condensation)
External Dimensions	(W)94 × (H)30 × (D)140mm
Weight	0.6kg (including a special cable)
Display	LDC 16 digits, 2 lines
Connecting Cable	Attached special connecting cable (detachable)

Performance Specifications

Number of Control Axes	2 axes
Operation Mode	MANUAL (M) / TEACHING (T) / RUN (R) EDIT (E) / MEM SW SET Mode
Coordinate Indication Range	X axis: Approx. –99999999 – +99999999 pulses Y axis: Approx. –99999999 – +99999999 pulses
Coordinate Input Range	X axis: Approx. –16777214 – +16777214 pulses Y axis: Approx. –16777214 – +16777214 pulses
Limit Sensor Status	X axis: Displayed left side of coordinate symbol ("L" is displayed when detected.) Y axis: Displayed left side of coordinate symbol ("L" is displayed when detected.)
Speed Parameter	Switchable among 10 steps
Min. Driving Speed	(S) 1 – 20000pps
Max. Driving Speed	(F) 1 – 20000pps
Acceleration /Deceleration Time	(R) 0 – 1000mS
Coordinate Display Unit	[PLS] [μm] [°]
Program Memory Capacity	128 steps × 4 channels
Program Parameter	Wait time 0 – 25.5 [sec] Unit: 0.1 sec Repeated 0 – 99999999 [times]
Origin Return Axes	X axis only / Y axis only / Both axes
Motor Rotation Direction	X axis: Positive (POS) / Negative (NEG) Y axis: Positive (POS) / Negative (NEG)

Specifications

Part Number	SJT-02
Type	Joystick
Power Supply	Supplied from controller

JD-100

Catalog Code **W9085**

Manual operation of motorized stages is possible using the JOG buttons or JOG dial.

The RATE button allows easy switching of the travel per click (2 steps).

Mode switching between SHOT-302GS/SHOT-304GS and switching of travel speed (4 steps) can be performed at using the front panel buttons.



Functions

LCD Panel	None
MODE Button	Switches between SHOT-302GS/SHOT-304GS modes.
RATE Button	Changes the travel per click. (Normal RATE: 1 pulse/click, High RATE: 5 pulses/click)
AXIS-SEL Button	Switches the motion axes (1 to 4 axes) using the jog dial.
SPEED Button	Switches the travel speed in 4 steps set with the controller. (SHOT-302GS/304GS only)
JOG+/- Button	Operates in +/- direction while the respective button is being pressed.
Number of Control Axes	2/4

Specifications

Part Number	JD-100
Type	Jog Dial
Cable	MDR14-CA-2.5 (purchase separately)
Display	None
External Dimensions [W×H×Dmm]	130×36×145
Weight [kg]	0.6

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40 × 40 mm

60 × 60 mm

80 × 80 mm

85 × 85 mm

100 × 100 mm

120 × 120 mm

Others

Remote controls for SHOT-302GS/304GS, SHOT-702, PGC-04-U, and HSC-103.

JS-300



- Enables manual operation of attached motorized stages using a joystick.

Specifications

Part Number	JS-300
Type	Button operation
Cable	MDR14-CA-2.5 (purchase separately)
Display	LCD (16 digits × 4 lines)
External Dimensions [W×H×Dmm]	120×50×160
Weight [kg]	0.7

Functions

LCD Panel	Display digits: 16 digits × 4 lines
MODE Button	Switches modes (SHOT-302GS/SHOT-304GS)
E-ORG Button	Returns to theoretical (electric) origin
ZERO Button	Sets theoretical (electric) origin
Control Axis Switch Button	Switches the operating axis of joystick (1, 2 or 3, 4 axes)
Joystick	Joystick Controls 1, 2 or 3, 4 axes
M-ORG Button	Machine Origin Return
Third axis Operating Switch	Operates third axis
SPEED Button	A button to select one of the four motion speeds set by the controller.
STOP Button	Emergency stop

JB-400



- Enables manual operation of attached motorized stages using a keypad.
- Can be used to edit setup parameters and internal programs when connected to SHOT-302GS or SHOT-304GS.

Specifications

Part Number	JB-400
Type	Button operation
Cable	MDR14-CA-2.5 (purchase separately)
Display	LCD (16 digits × 4 lines)
External Dimensions [W×H×Dmm]	178×38×195
Weight [kg]	0.7

Functions

LCD Panel	Display digits: 16 digits × 4 lines	
Program Button	Execution of internal program (exclude SHOT-702)	
SPEED Button	A button to select one of the four motion speeds set by the controller.	
MODE Button	Switches between SHOT-302GS/SHOT-304GS models	
ORG X/Y Button	Returns X/Y axis to machine origin	
Reset X/Y Button	Sets theoretical (electric) origin of X/Y axis	
STOP Button	Emergency stop	
JOG/Pulse Button	Switches between JOG operation and fixed pulse operation	
X axis / Y axis Control Button	When set to JOG operation: Move while the button is being pressed	When set to fixed pulse operation: Move for the registered number of pulses at each press of the button
CLEAR Button	Resets the fixed pulse setting to zero	
Numeric Keypad (0 – 9)	Inputs the number of fixed pulse	
SET Button	Completes setting of fixed pulse	

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40 × 40 mm

60 × 60 mm

80 × 80 mm

85 × 85 mm

100 × 100 mm

120 × 120 mm

Others

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40 × 40 mm

60 × 60 mm

80 × 80 mm

85 × 85 mm

100 × 100 mm

120 × 120 mm

Others



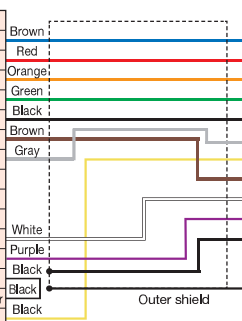
Cables for connecting motorized stages to controllers or drivers.

- Refer to compatible controllers/drivers and cables described on the page of each motorized stage.

D15RP-CA Cable

Controller side (15 pins)
D-sub15pin
(Male Type)

Pin Number	
1	Motor lead
2	Motor lead
3	Motor lead
4	Motor lead
5	Motor lead
6	GND
7	Origin sensor
8	+VS
9	N.C.
10	N.C.
11	Limit sensor (+)
12	Limit sensor (-)
13	GND
14	Origin proximity sensor
15	+VS



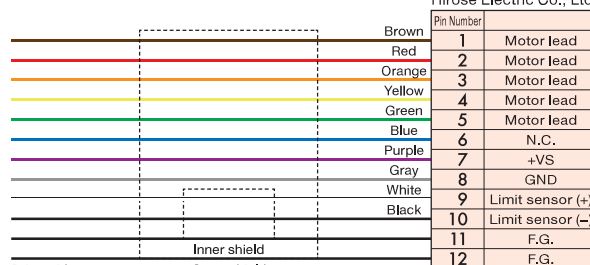
Stage side (12 pins)
RP17-13PA-12PC
(Male Type)
Hirose Electric Co., Ltd.

Pin Number	
1	Motor lead
2	Motor lead
3	Motor lead
4	Motor lead
5	Motor lead
6	Origin sensor
7	+VS
8	GND
9	Limit sensor (+)
10	Limit sensor (-)
11	F.G.
12	F.G.

(Reference) Rough guide of the minimum bending radius is 40mm.

MINI-CA-SG Cable

Stage side (12 pins)
RP17-13PA-12PC
(Male Type)
Hirose Electric Co., Ltd.



Driver side terminal is not processed (Reference) Rough guide of the minimum bending radius is 40mm.

D15D15A-CA Cable

Controller side (15 pins)
17JE-23150-02(D1)
Hood: 17JE-15H-1A4-CF
(Male Type) DDK Ltd.

Pin Number	
1	Motor lead
2	Motor lead
3	Motor lead
4	Motor lead
5	Motor lead
6	GND
7	Origin sensor
8	+VS
9	Autoconfig
10	Reserve
11	Limit sensor (+)
12	Limit sensor (-)
13	GND
14	Origin proximity sensor
15	N.C.



For the color of the cable wiring, it is marked with an insulating color, dot color and number of dots.

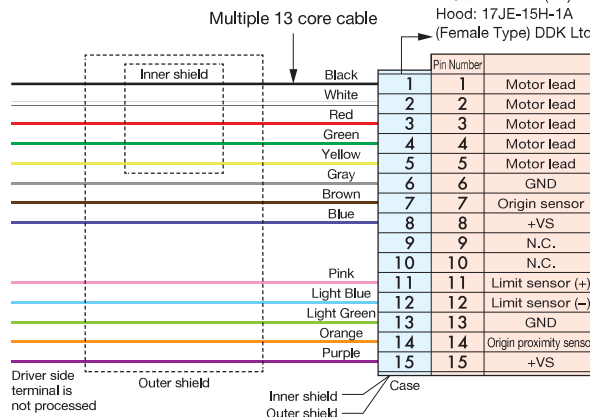
(Reference) Rough guide of the minimum bending radius is 60mm.

Stage side (15 pins)
17JE-13150-02(D1)A
Hood: 17JE-15H-1A4-CF
(Female Type) DDK Ltd.

Pin Number	
1	Motor lead
2	Motor lead
3	Motor lead
4	Motor lead
5	Motor lead
6	GND
7	Origin sensor
8	+VS
9	Autoconfig
10	Reserve
11	Limit sensor (+)
12	Limit sensor (-)
13	GND
14	Origin proximity sensor
15	N.C.

DAC-SG Cable

Stage side (15 pins)
17JE-13150-02 (D1)
Hood: 17JE-15H-1A
(Female Type) DDK Ltd.



Driver side terminal is not processed (Reference) Rough guide of the minimum bending radius is 60mm.

Specifications

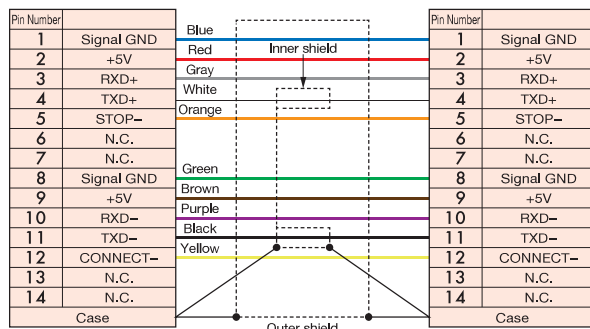
Part Number	Controller Side	Stage Side	Cable Length [m]
D15RP-CA-2	D-sub 15pin / male type	RP17-13PA-12PC / 12pin	2
D15RP-CA-3	D-sub 15pin / male type	RP17-13PA-12PC / 12pin	3
D15RP-CA-5	D-sub 15pin / male type	RP17-13PA-12PC / 12pin	5
MINI-CA-SG-1	Unprocessed	RP17-13PA-12PC / 12pin	1
MINI-CA-SG-2	Unprocessed	RP17-13PA-12PC / 12pin	2
MINI-CA-SG-3	Unprocessed	RP17-13PA-12PC / 12pin	3
MINI-CA-SG-4	Unprocessed	RP17-13PA-12PC / 12pin	4
MINI-CA-SG-5	Unprocessed	RP17-13PA-12PC / 12pin	5
D15D15A-CA-2	17JE-23150 / male type	17JE-13150 / female type	2
D15D15A-CA-3	17JE-23150 / male type	17JE-13150 / female type	3
D15D15A-CA-5	17JE-23150 / male type	17JE-13150 / female type	5
DAC-SG-2	Unprocessed	17JE-13150 / female type	2
DAC-SG-3	Unprocessed	17JE-13150 / female type	3
DAC-SG-4	Unprocessed	17JE-13150 / female type	4
DAC-SG-5	Unprocessed	17JE-13150 / female type	5

Cables for encoders to controllers and controllers to computers.

MDR14-CA-2.5 Cable

Controller side (14 pins)
Connector: 10114-3000PE
Shell: 10314-52F0-008
Sumitomo 3M Limited

Stage side (14 pins)
Connector: 10114-3000PE
Shell: 10314-52F0-008
Sumitomo 3M Limited



- The MDR14-CA-2.5 cable is for connecting between SHOT-302GS/ 304GS/SHOT-702 and JS-300/JB-400.

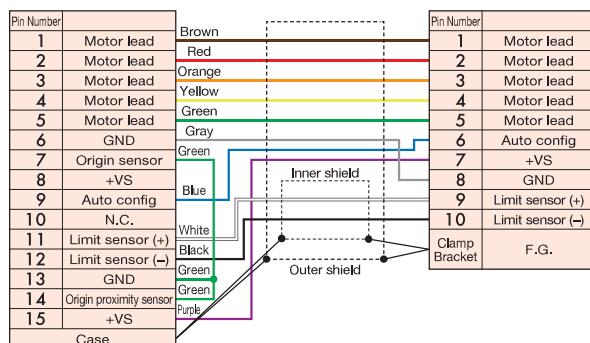
Specifications

Part Number	Controller Side	JS/JD side	Cable Length [m]
MDR14-CA-2.5	10114-3000PE	10114-3000PE	2.5

DHR-CA-3 Cable

Controller side (15 pins)
Connector: 17JE-23150-02(D1)
Hood: 17JE-15H-1A-CF
(Male Type) DDK Ltd.

Stage side (10 pins)
HR10A-10P-10PC(73)
(Male Type)
Hirose Electric Co., Ltd.



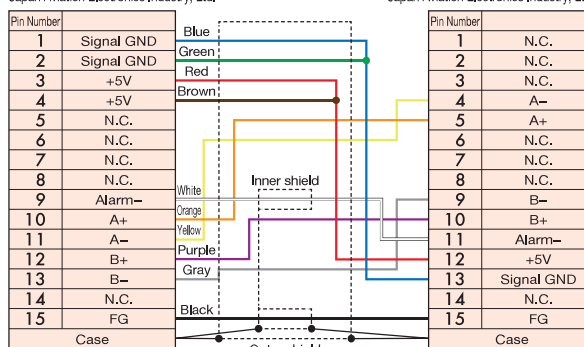
Specifications

Part Number	Controller Side	Stage Side	Cable Length [m]
DHR-CA-3	17JE-23150-02 (Male Type)	HR10A-10P-10PC(73)	3

GSEF-CA-3 Cable

Controller side (15 pins)
Connector: D02-M15SG-N-F1
Hood: DE-C8-J9-F1-1R
(Male Type)
Japan Aviation Electronics Industry, Ltd.

Stage side (15 pins)
Connector: D02-M15SG-N-F0
Hood: DE-C8-J9-F1-1R
(Female Type)
Japan Aviation Electronics Industry, Ltd.



Specifications

Part Number	Controller Side	Stage Side	Cable Length [m]
GSEF-CA-3	D02-M15PG-N-F0	D02-M15SG-N-F0 (with ferrite core)	3

Other Cables

RS232C Cable



Sigma Koki controller (D-sub 9pin male type) DOS/V PC (D-sub 9pin female type)

1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

Specifications

Part Number	Cable Length [m]
RS232C/STR-1.8	1.8
RS232C/STR-3	3
RS232C/STR-4.5	4.5

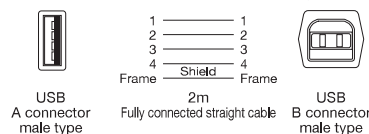
GP-IB Cable



Specifications

Part Number	Cable Length [m]
GP-IB-0.5	0.5
GP-IB-1	1
GP-IB-2	2
GP-IB-3	3
GP-IB-4	4

USB Cable



Specifications

Part Number	Cable Length [m]
USB-1	1
USB-2	2