

CE6000 Series

CUTTING PLOTTER

SERVICE MANUAL

MANUAL NO. CE6000-UM-251



GRAPHTEC

CE6000-UM-251-04-9370

HISTORY OF REVISIONS

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1	12.10.15	First Printing	All	01
2	12.12.27	CE6000-120AP was added.	All	02
3	13.03.12	Part number for the Push Roller Arm was corrected.	10-4,10-6	03
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8	13.06.21	The rank of 2 Pen Station Bracket was changed to D rank.	10-10	04
9	13.06.21	The Y limit position adjustment was added for the CE6000-120AP.	7-33, 7-34	04

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1 INTRODUCTION

CAUTION

DOUBLE POLE/NEUTRAL FUSING

1.1 Main Specifications

CE6000-40/60/120/120AMO

Item	CE6000-40	CE6000-60	CE6000-120 (AMO)
CPU	32-bits CPU		
Configuration	Grit rolling		
Drive system	Digital servo		
Maximum cutting area	375 mm x 50 m	603 mm x 50 m	1213 mm x 50 m
Guaranteed precision cutting area ^{*1}	356 mm x 2 m	584 mm x 5 m (When using optional basket)	1194 mm x 5 m (When using optional basket)
Mountable media width ^{*2}	Minimum: 50 mm Maximum: 484 mm	Minimum: 50 mm Maximum: 712 mm	Minimum: 85 mm (CE6000-120) Minimum: 125 mm (CE6000-120-AMO) Maximum: 1346 mm
Available roll media diameter	Minimum: 180 mm Maximum: 76 mm		
Maximum cutting speed	600 mm/s (in all directions)	900 mm/s (45° direction)	1000 mm/s (45° direction)
Specifiable cutting speeds (cm/s)	1–10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60 cm/s	1–10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 64 (45° direction 90 cm/s)	1–10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 71 (45° direction 100 cm/s)
Cutting Pressure	0.2 to 2.9 N (20 gf to 300 gf) (31 steps)	0.2 to 4.4 N (20 gf to 450 gf) (38 steps)	
Minimum character size	5 mm (0.197 in) for alphanumeric Helvetica med. Font		
Mechanical resolution	0.005 mm		
Programmable resolution	GP-GL: 0.1/0.05/0.025/0.01 mm; HP-GLTM ^{*3} : 0.025 mm		
Repeatability accuracy ^{*1}	Max. 0.1 mm/in unit of 2 m (Designated file and cutting condition)		
No. of pens mountable	1 pen		
Compatible cutter type	Supersteel cutter blades		
Compatible pen type	Water-based fiber-tip pens and oil-based ballpoint pen		
Compatible cutting film	Marking film (PVC, fluorescent, or reflective film) up to 0.25 mm in thickness (excluding high-luminosity reflective film)		
Interfaces	RS-232C/USB (Full Speed)		
Buffer capacity	2 MB		
Command modes	GP-GL, HP-GL ^{*3}		
Display panel	Liquid crystal graphic display (240dot x 128dot)		
Rated power supply	100 to 120, 200 to 240 V AC, 50/60 Hz		
Power consumption	100 VA		
Operating environment	10°C to 35°C, 35% to 75% RH (Non-condensing)		
Conditions for guaranteed precision	16°C to 32°C, 35% to 70% RH (Non-condensing)		
External dimensions (W x D x H)	Approx. 672 x 336 x 266 mm	Approx. 901 x 593 x 1045 mm	Approx. 1541 x 736 x 1250 mm
Weight	10.5 kg	21 kg (Including stand)	40.5 kg (Including stand)

*1: Varies depending on the type of Graphtec-authorized film and the cutting conditions

*2: The accuracy of minimum media width is when the push rollers are set to 5 mm from both edges of media.

*3: HP-GLTM is a registered trademark of Hewlett-Packard Company.

CE6000-120AP

Item	CE6000-120AP
CPU	32-bits CPU
Configuration	Grit rolling
Drive system	Digital servo
Maximum cutting area	1190 mm x 50 m
Guaranteed precision cutting area ^{*1}	1190 mm x 3 m
Mountable media width ^{*2}	Minimum: 594 mm Maximum: 1220 mm
Available roll media core diameter	3 inch
Available roll media outer diameter	Maximum: 200 mm
Available roll media weight	Less than 20 kg
Number of push roller	5
Maximum cutting speed	600 mm/s (in all directions)
Specifiable cutting speeds (cm/s)	1–10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60 cm/s
Cutting Pressure	0.2 to 4.4 N (20 gf to 450 gf) (38 steps)
Minimum character size	5 mm (0.197 in) for alphanumeric Helvetica med. Font
Mechanical resolution	0.005 mm
Programmable resolution	GP-GL: 0.1/0.05/0.025/0.01 mm; HP-GL™ ^{*3} : 0.025 mm
Repeatability accuracy ^{*1}	Max. 0.1 mm/in unit of 2 m (Designated file and cutting condition)
No. of pens mountable	2 pens
Compatible cutter type	Supersteel cutter blades
Compatible pen type	Water-based fiber-tip pens and oil-based ballpoint pen
Interfaces	RS-232C/USB (Full Speed)
Buffer capacity	2 MB
Command modes	GP-GL, HP-GL ^{*3}
Display panel	Liquid crystal graphic display (240dot x 128dot)
Rated power supply	100 to 120, 200 to 240 V AC, 50/60 Hz
Power consumption	100 VA
Operating environment	10°C to 35°C, 35% to 75% RH (Non-condensing)
Conditions for guaranteed precision	16°C to 32°C, 35% to 70% RH (Non-condensing)
External dimensions (W x D x H)	Approx. 1575 x 1200 x 1250 mm (Including stand)
Weight	46 kg (Including stand)

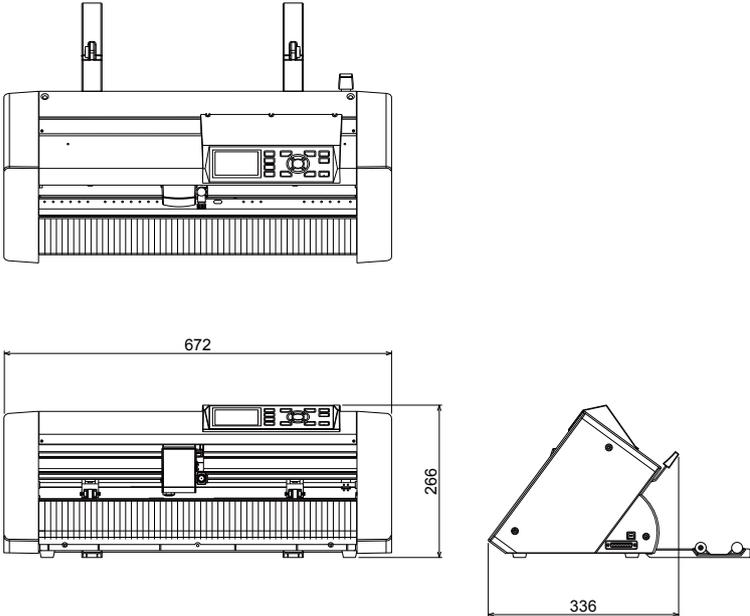
*1: Varies depending on the type of Graphtec-authorized film and the cutting conditions

*2: The accuracy of minimum media width is when the push rollers are set to 5 mm from both edges of media.

*3: HP-GL™ is a registered trademark of Hewlett-Packard Company.

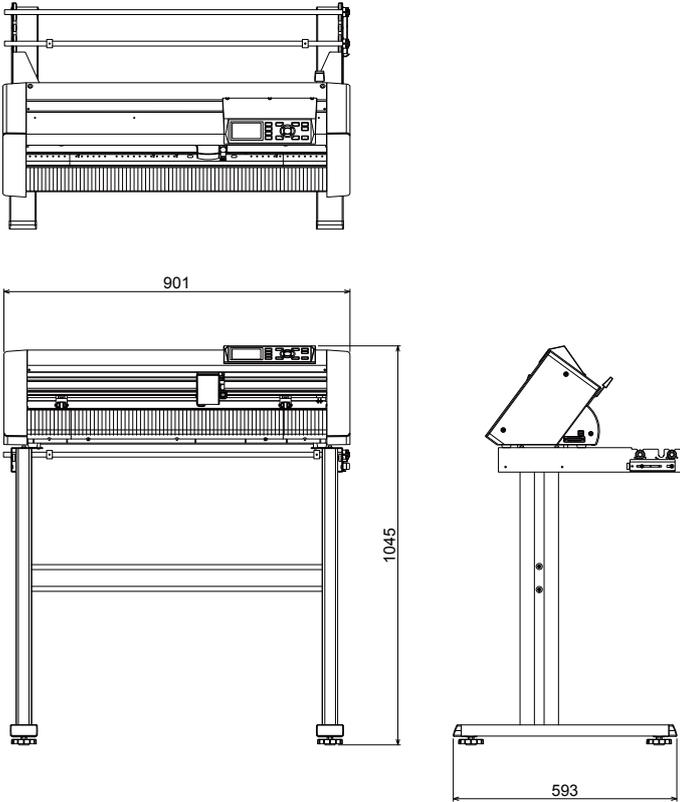
1.2 External Dimensions

CE6000-40



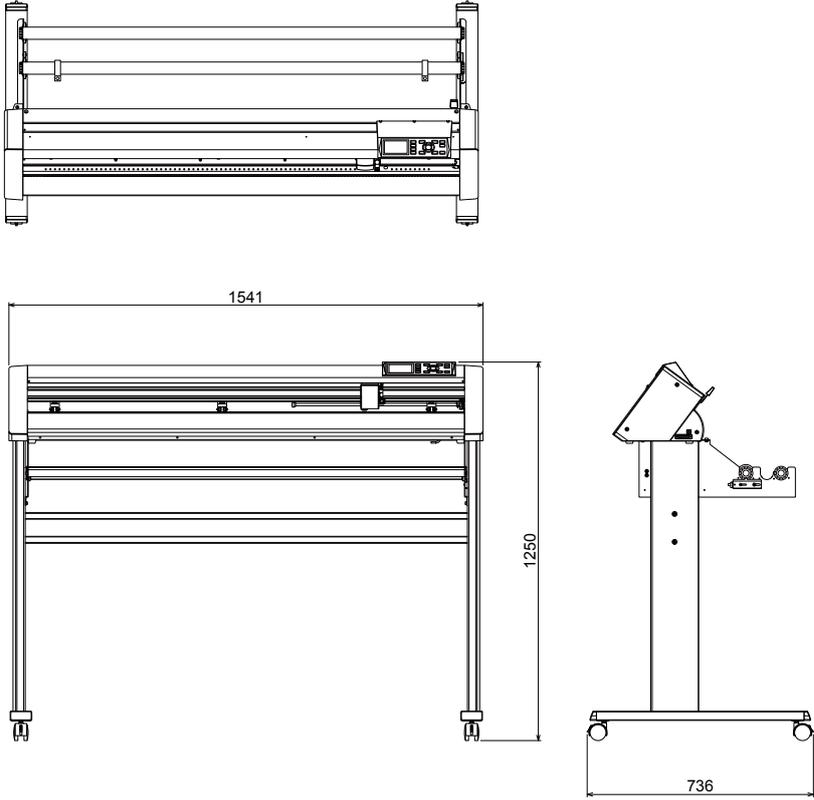
Units: mm
Dimensional accuracy: ±5 mm

CE6000-60



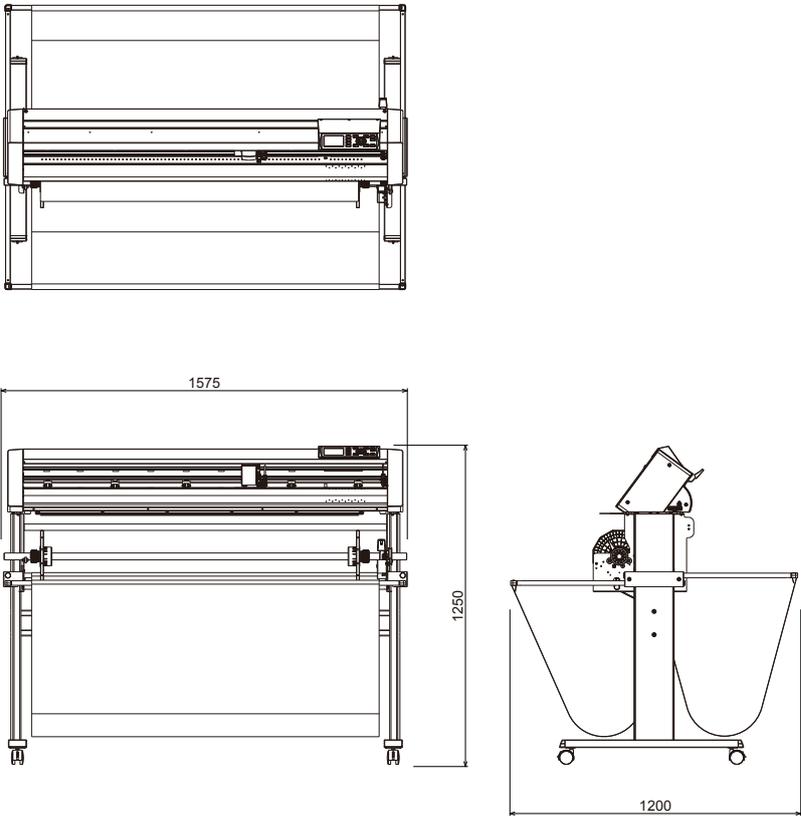
Units: mm
Dimensional accuracy: ±5 mm

CE6000-120/AMO



Units: mm
Dimensional accuracy: ±5 mm

CE6000-120AP



1.3 Opts

Item	Model	Contents
Basket	PG0100	Cloth basket for CE6000-60
	PG0101	Cloth basket for CE6000-120

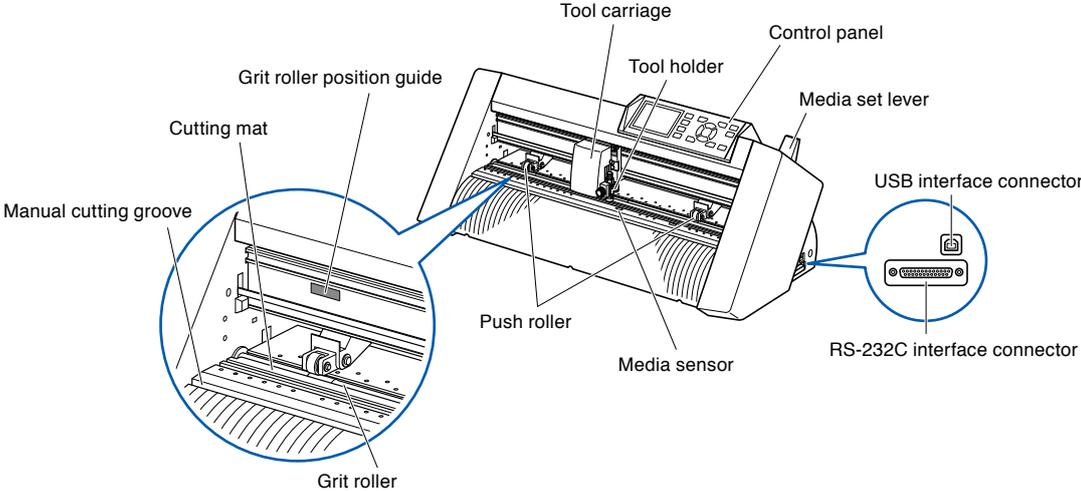
1.4 Supplies

Item	Model	Contents
Cutter plunger	PHP33-CB09N-HS	Used with 0.9 mm diameter cutter blade
	PHP33-CB15N-HS	Used with 0.9 mm diameter cutter blade
Cutter blade	CB09UB-5	0.9 mm diameter, supersteel blade (set of 5)
	CB15U-5	1.5 mm diameter, supersteel blade (set of 5)
	CB15UB-2	1.5 mm diameter, supersteel blade for small text (set of 2)
	CB09UB-K60-5	0.9 mm diameter, supersteel blade (set of 5)
Water-based fiber-tip pen plunger	PHP31-FIBER	Plunger for water-based fiber-tip pen for (set of 1)
Water-based fiber-tip pen	KF700-BK	1 set (10 pcs. Black)
Oil-based ballpoint pen plunger	PHP34-BALL	Plunger oil-based ballpoint pen (set of 1)
Oil-based ballpoint pen	KB700-BK	1 set (10 pcs. Black)
Cutting Mat	CE6-CM40-2	Cutting mat for the CE6000-40 (set of 2)
	CE6-CM60-2	Cutting mat for the CE6000-60 (set of 2)
	CE6-CM120-2	Cutting mat for the CE6000-120/AMO/AP (set of 2)

2 PARTS NAMES and FUNCTIONS

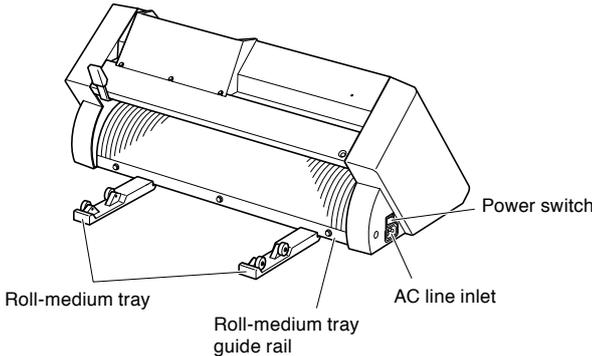
2.1 Parts Names and Functions (CE6000-40/60/120/120AMO)

Front View : CE6000-40



- Control panel**..... Used to access various plotter functions.
- Push rollers** Rollers that push the media against the grit rollers.
- Grit rollers**..... Metallic rollers with a file-like surface that feed the media back and forth.
- Media sensors** The front sensor is used to sense the leading edge of the media. The rear sensor is used to sense the trailing edge of the media.
- Tool carriage**..... Moves the cutter-pen or plotting pen across the media during cutting or plotting.
- Tool holder**..... Holds the cutter-pen or plotting pen and moves it up or down.
- Grit roller position guide**..... Stickers on the front of the Y rail and the rear side of the top cover that show the position of each grit roller. Use these alignment marks as an aid in locating the Push rollers.
- Cutting mat** Cutter blade moved on this mat, preventing wears of the blade.
- Cutting groove**..... Use this groove when using the media cutter.
- Media set lever** Used to raise or lower the Push rollers during the loading or unloading of media.
- USB interface connector**..... Used to connect the plotter to the computer with a USB interface cable.
- RS-232C interface connector** Used to connect the plotter to the computer with a RS-232C interface cable.

Rear View : CE6000-40



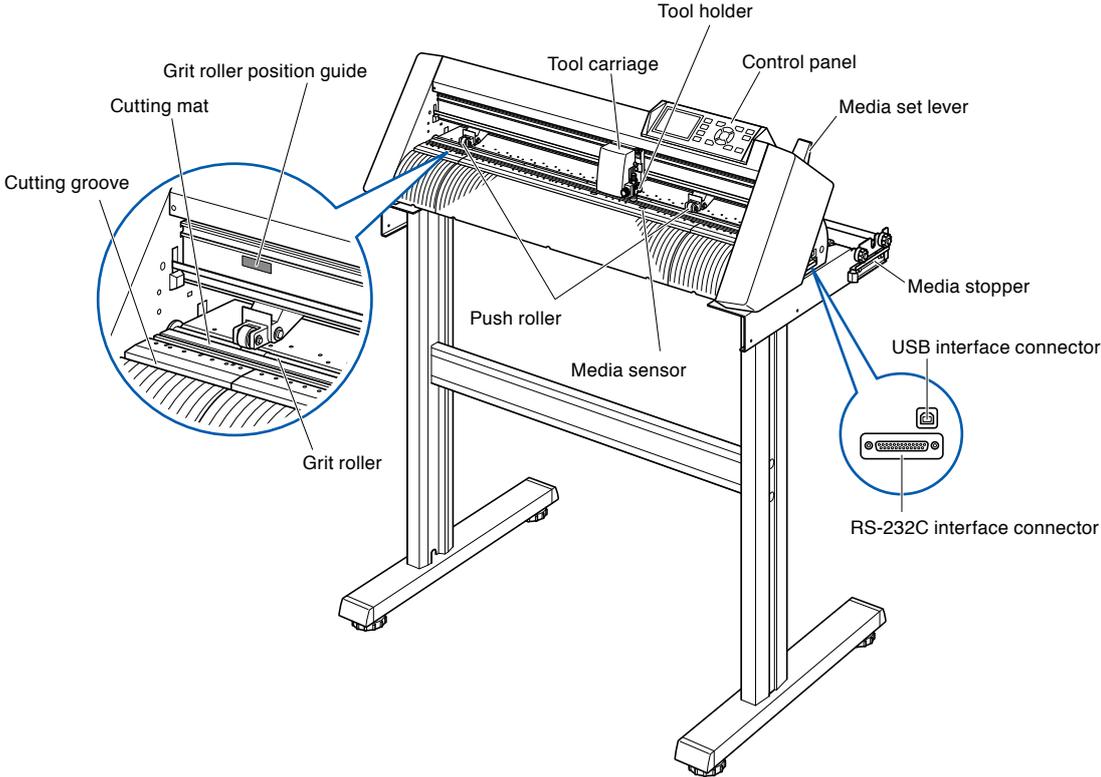
Roll-medium tray.....A tray to set media in.

Roll-medium tray guide railA rail to set the roll media tray in.

Power switchUsed to turn the plotter on and off.

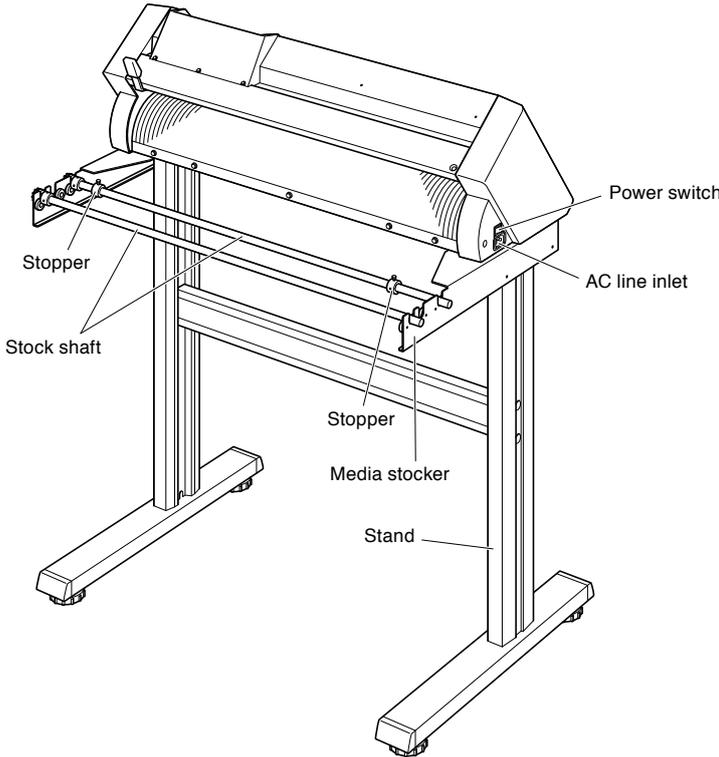
AC line inlet.....Inlet where the power cable is connected.

Front View : CE6000-60



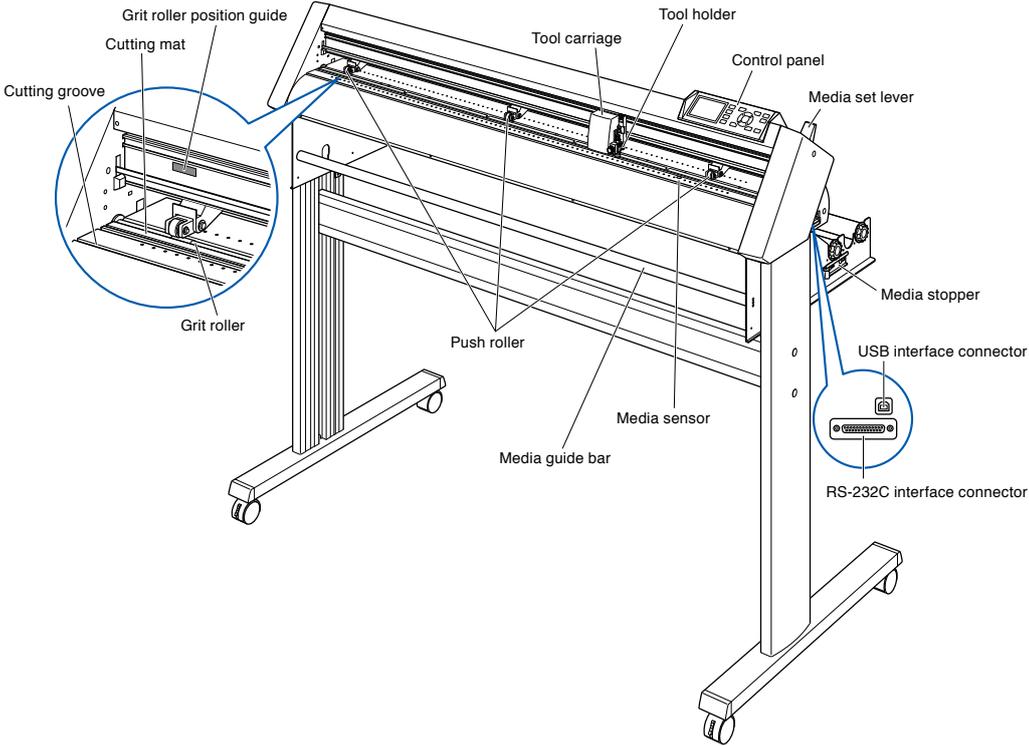
- Control panel** Used to access various plotter functions.
- Push rollers** Rollers that push the media against the grit rollers.
- Grit rollers** Metallic rollers with a file-like surface that feed the media back and forth.
- Media sensors** The front sensor is used to sense the leading edge of the media. The rear sensor is used to sense the trailing edge of the media.
- Tool carriage** Moves the cutter-pen or plotting pen across the media during cutting or plotting.
- Tool holder** Holds the cutter-pen or plotting pen and moves it up or down.
- Grit roller position guide** Stickers on the front of the Y rail and the rear side of the top cover that show the position of each grit roller. Use these alignment marks as an aid in locating the Push rollers.
- Cutting mat** Cutter blade moved on this mat, preventing wears of the blade.
- Cutting groove** Use this groove when using the media cutter.
- Media set lever** Used to raise or lower the Push rollers during the loading or unloading of media.
- USB interface connector** Used to connect the plotter to the computer with a USB interface cable.
- RS-232C interface connector** Used to connect the plotter to the computer with a RS-232C interface cable.
- Media stopper** This stops the stock shaft from spinning when setting in media. It is utilized when pulling roll media straight out.

Rear View : CE6000-60



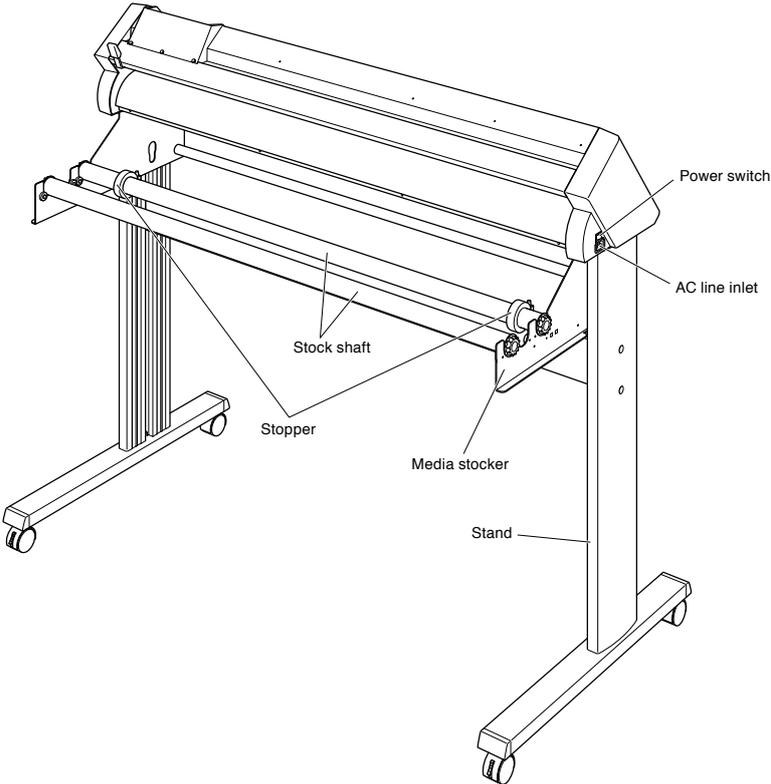
- Power switch**Used to turn the plotter on and off.
- AC line inlet**.....Inlet where the power cable is connected.
- Media stocker**A stock to set roll media in.
- Stock shaft**.....A roller that takes in roll media.
- Stopper**.....Keeps set roll media in place.
- Stand**A stand to put the machine on.

Front View : CE6000-120



- Control panel**.....Used to access various plotter functions.
- Push rollers**Rollers that push the media against the grit rollers. (Number may vary depending on the model)
- Grit rollers**.....Metallic rollers with a file-like surface that feed the media back and forth.
- Media sensors**The front sensor is used to sense the leading edge of the media. The rear sensor is used to sense the trailing edge of the media.
- Tool carriage**.....Moves the cutter-pen or plotting pen across the media during cutting or plotting.
- Tool holder**.....Holds the cutter-pen or plotting pen and moves it up or down.
- Grit roller position guide**.....Stickers on the front of the Y rail and the rear side of the top cover that show the position of each grit roller. Use these alignment marks as an aid in locating the Push rollers.
- Cutting mat**Cutter blade moved on this mat, preventing wears of the blade.
- Cutting groove**.....Use this groove when using the media cutter.
- Media set lever**Used to raise or lower the Push rollers during the loading or unloading of media.
- USB interface connector**.....Used to connect the plotter to the computer with a USB interface cable.
- RS-232C interface connector**Used to connect the plotter to the computer with a RS-232C interface cable.
- Media stopper**.....This stops the stock shaft from spinning when setting in media. It is also utilized when pulling roll media straight out.
- Media guide bar**.....Used to keep media straight when setting it in.

Front View : CE6000-120



Power switchUsed to turn the plotter on and off.

AC line inlet.....Inlet where the power cable is connected.

Media stockerA stock to set roll media in.

Stock shaft.....A roller that takes in roll media.

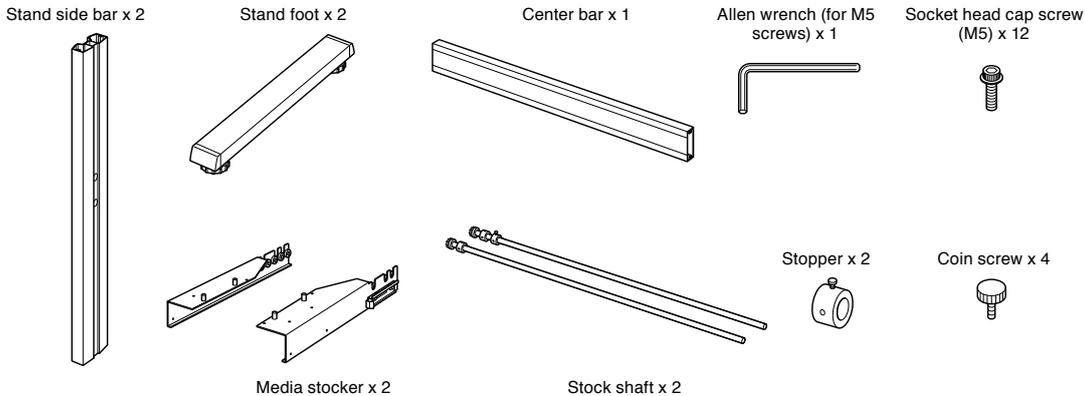
Stopper.....Keeps set roll media in place.

StandA stand to put the machine on.

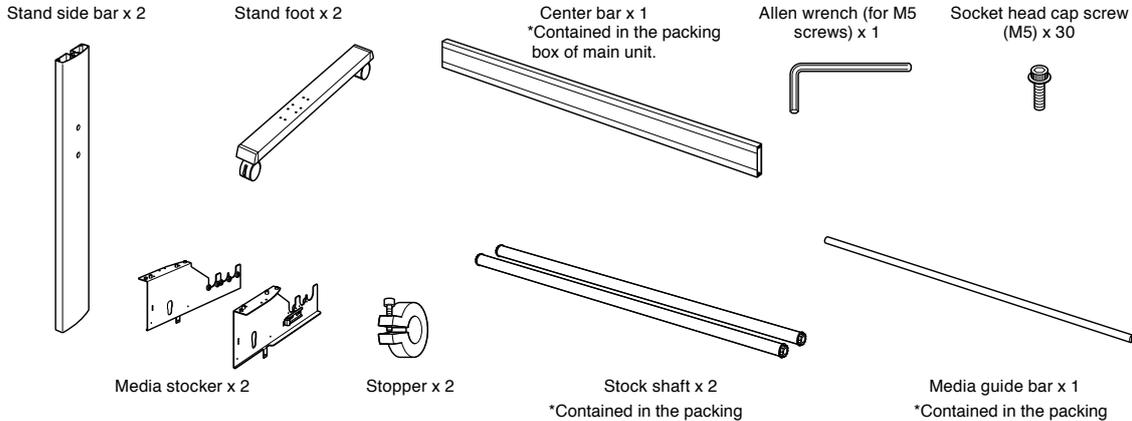
2.2 Assembling the Stand (CE6000-40/60/120/120AMO)

The stand is made up of the following parts.

CE6000-60

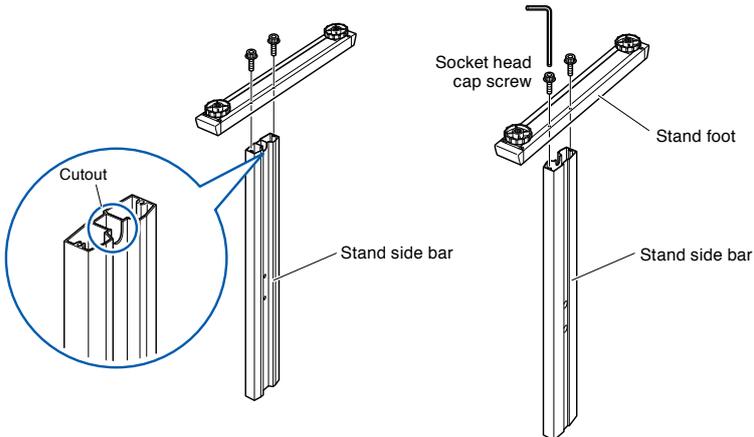


CE6000-120

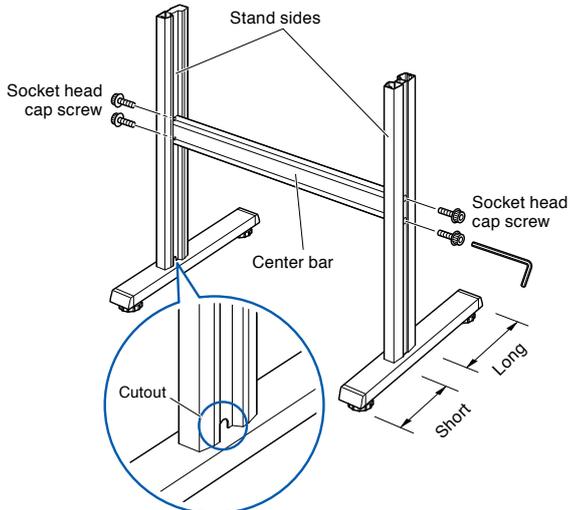


Stand Assembly Instructions : CE6000-60

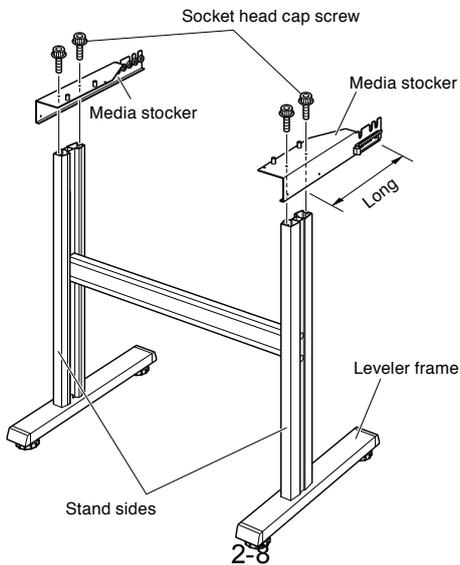
(1) Assemble the left and right stand sides. Fasten a stand foot to each of the stand side bars with two socket head cap screws using the Allen wrench.



(2) Attach the center bar to each of the left and right stand sides temporarily with two socket head cap screws, using the Allen wrench. Mount the center bar so that each one of stand feet of short side to be front side.

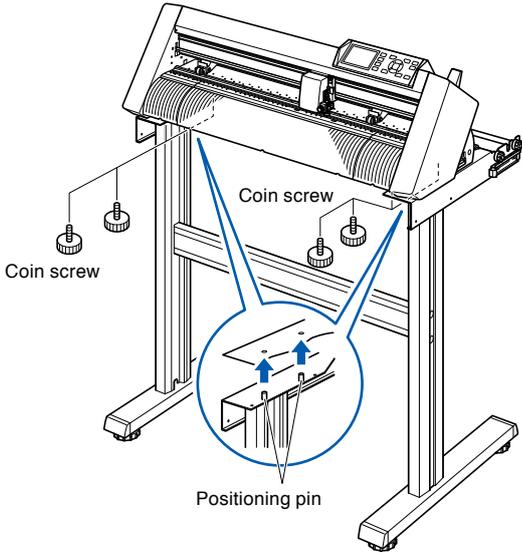


(3) Attach a media stocker to each of the left and right stand side bars with two socket head cap screws, using the Allen wrench. Mount the media stockers so that each one of media stockers of long side to be rear side.



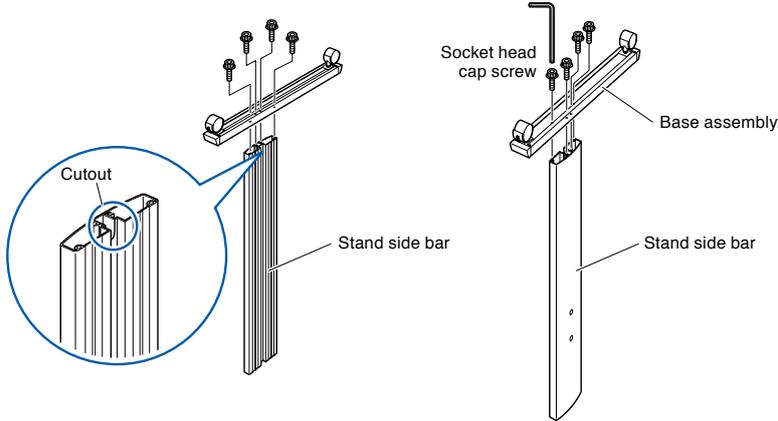
2 PARTS NAMES and FUNCTIONS

(4) Place the CE6000 onto the stand so that the positioning pins match up with the holes on the CE6000, and then fasten with the four coin screws.

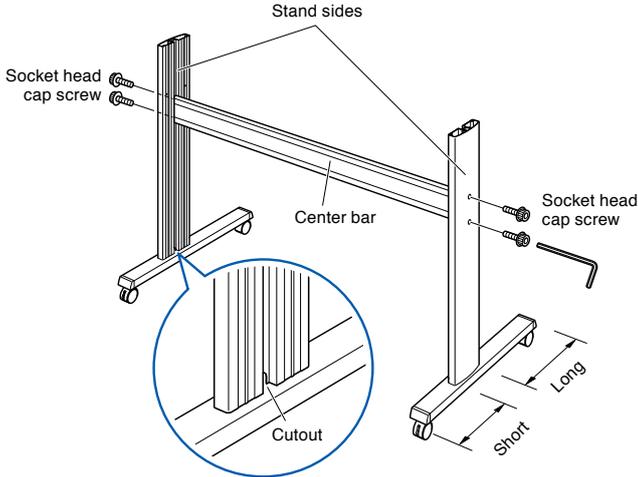


Stand Assembly Instructions : CE6000-120

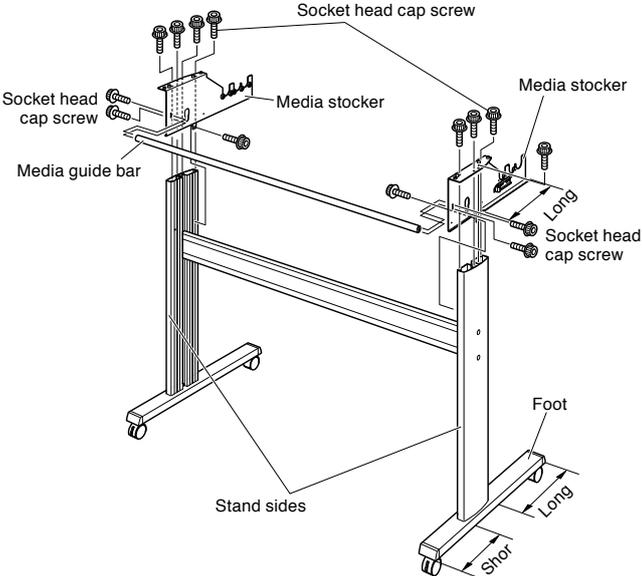
(1) Assemble the left and right stand sides. Fasten a stand foot to each of the stand side bars with two socket head cap screws using the Allen wrench.



(2) Loosely fasten the center bar to the left and right stand sides with four socket head cap screws (two on each side), using the Allen wrench. Mount the center bar so that each one of stand feet of short side to be front side.

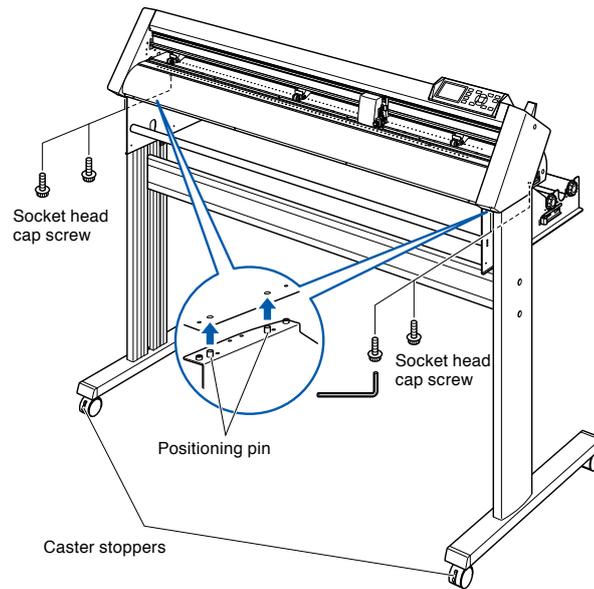


(3) Attach a media stocker to each of the left and right stand sides with Five socket head cap screws, using the Allen wrench. Mount the media stockers so that each one of media stockers of long side to be rear side. Install the media guide bar using the socket head cap screws (two on each side).



2 PARTS NAMES and FUNCTIONS

- (4) Mount the plotter on the stand by inserting the positioning pins on the stand into the positioning holes on the underside of the plotter. Fasten with four socket head cap screws (two on each side), using the Allen wrench.

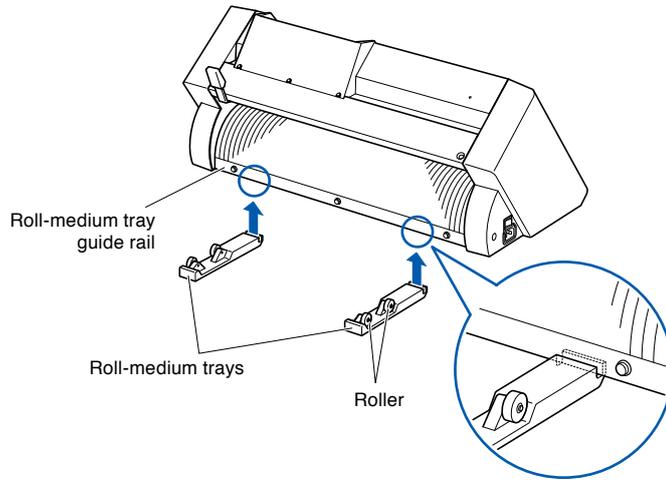


- (5) Tighten the socket head cap screws loosely fastened in Step 2.

Mounting the Roll-medium tray (CE6000-40 and CE6000-60 without stand)

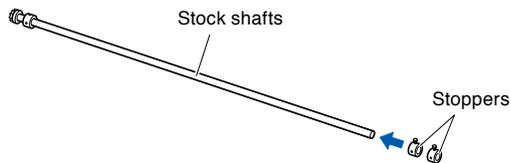
Set the roll media tray in using the roll media tray guide rail.

Make sure the rollers on the roll media tray are on the outside on both sides.

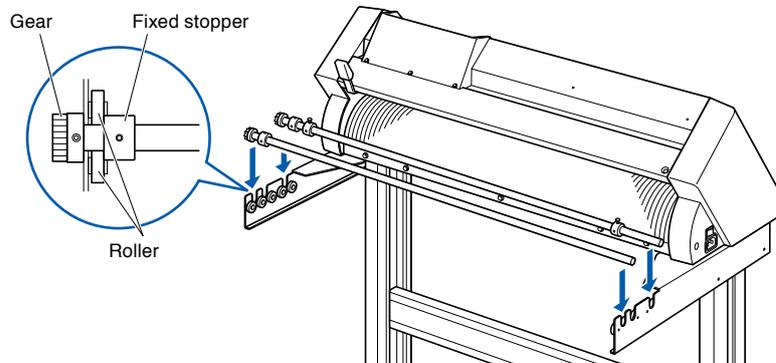


Mounting the Stock shafts (CE6000-60 with stand)

(1) Set one stopper in the stock shaft. (Keep the stopper screws slightly loose.)

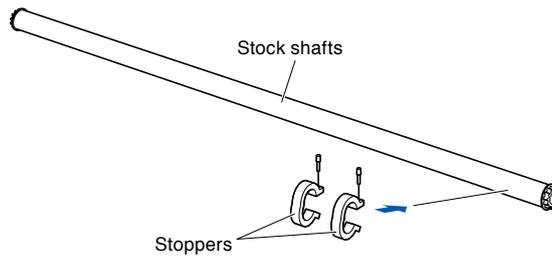


(2) Put the side with the gear of stock shafts on the left side of the CE6000 (looking from the back) and then put the right side of stock shaft onto the media stcker.

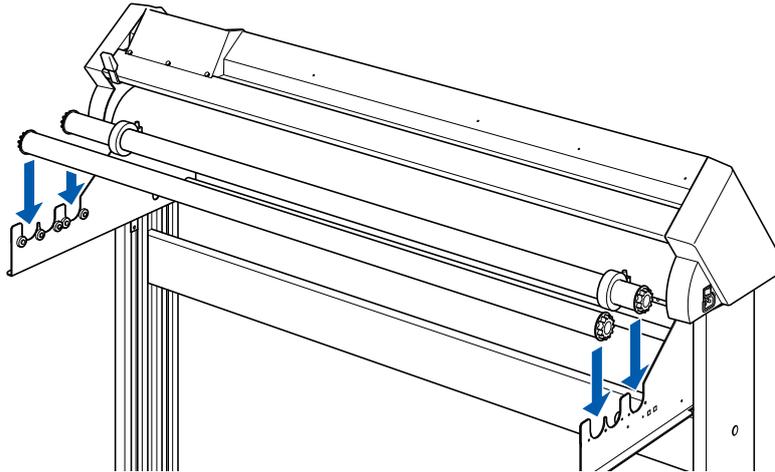


Mounting the Stock shafts (CE6000-120)

- (1) Set one stopper in the stock shaft. (Keep the stopper screws slightly loose.)

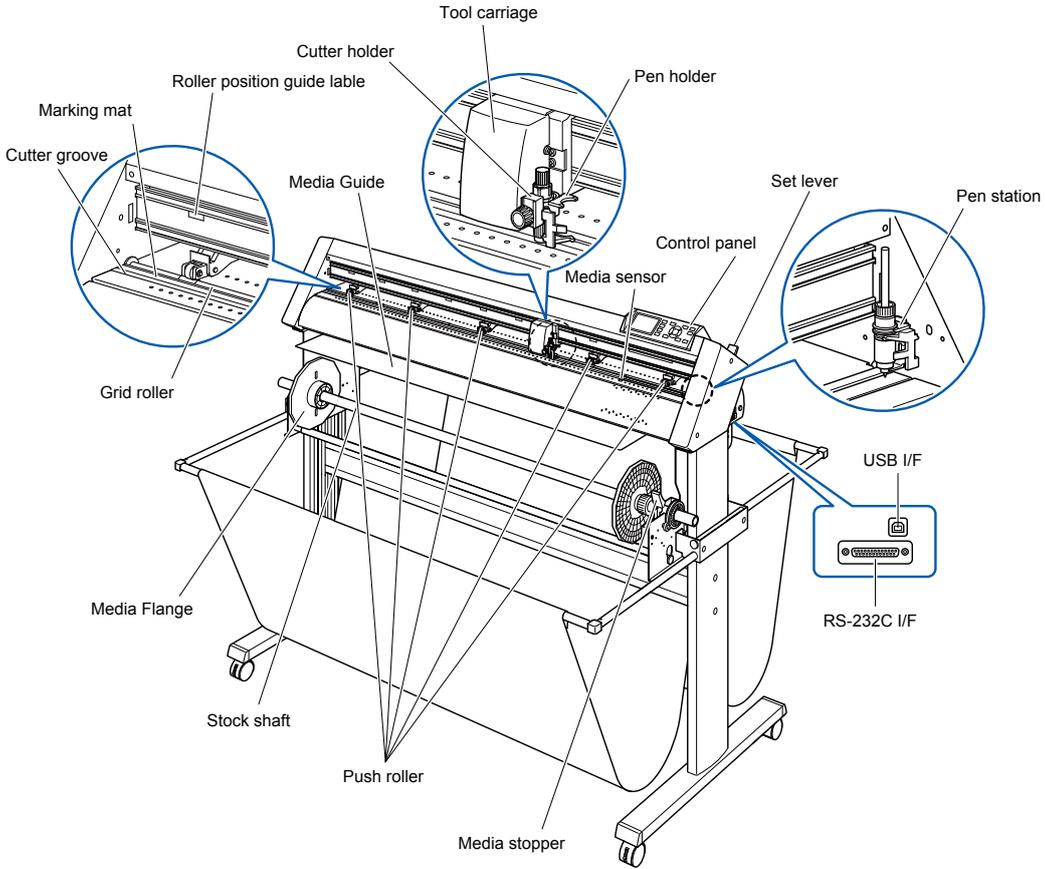


- (2) Put the stock shaft into the media stocker as shown in the picture below.



2.3 Parts Names and Functions (CE6000-120AP)

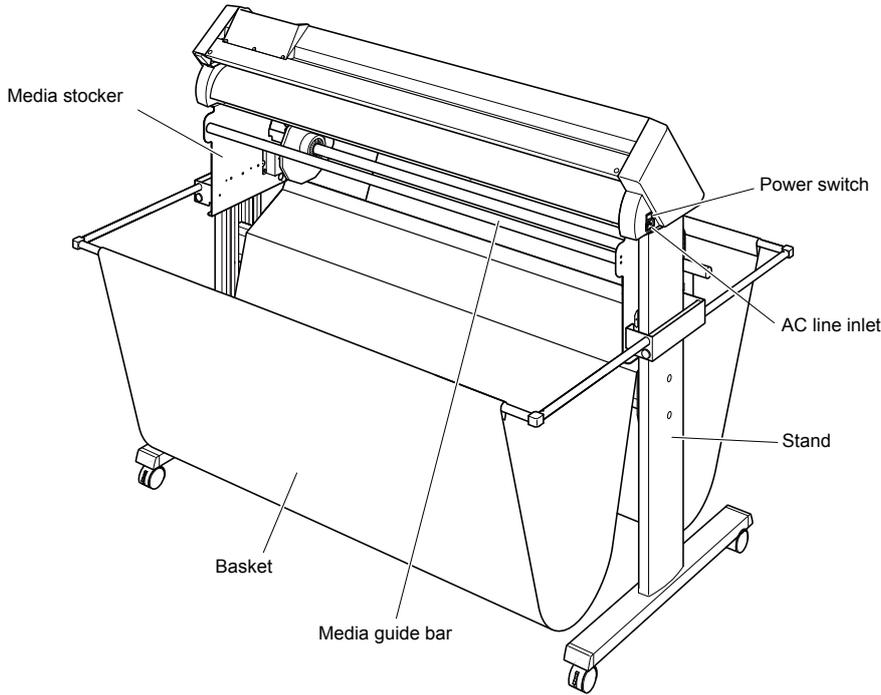
Front View : CE6000-120AP



- Control panel**.....Used to access various plotter functions.
- Push rollers**Rollers that push the media against the grit rollers. (Number may vary depending on the model)
- Grit rollers**.....Metallic rollers with a file-like surface that feed the media back and forth.
- Media sensors**The front sensor is used to sense the leading edge of the media. The rear sensor is used to sense the trailing edge of the media.
- Tool carriage**.....Moves the cutter-pen or plotting pen across the media during cutting or plotting.
- Tool holder**.....Holds the cutter-pen or plotting pen and moves it up or down.
- Cutter holder**Holds the cutter-pen and moves it up or down.
- Pen holder**.....Holds the plotting pen and moves it up or down.
- Pen Station**Set the plotting pen.
- Grit roller position guide**.....Stickers on the front of the Y rail and the rear side of the top cover that show the position of each grit roller. Use these alignment marks as an aid in locating the Push rollers.
- Marking mat**.....Plotting pen moved on this mat.
- Cutting groove**.....Cutter pen moved on this groove, preventing wears of the blade.

- Media set lever**Used to raise or lower the Push rollers during the loading or unloading of media.
- USB interface connector**.....Used to connect the plotter to the computer with a USB interface cable.
- RS-232C interface connector**Used to connect the plotter to the computer with a RS-232C interface cable.
- Media stopper**.....This stops the stock shaft from spinning when setting in media. It is also utilized when pulling roll media straight out.
- Stock shaft**.....Hold the media by this shaft.
- Media guide**This guide assist the media movement.

Front View : CE6000-120AP

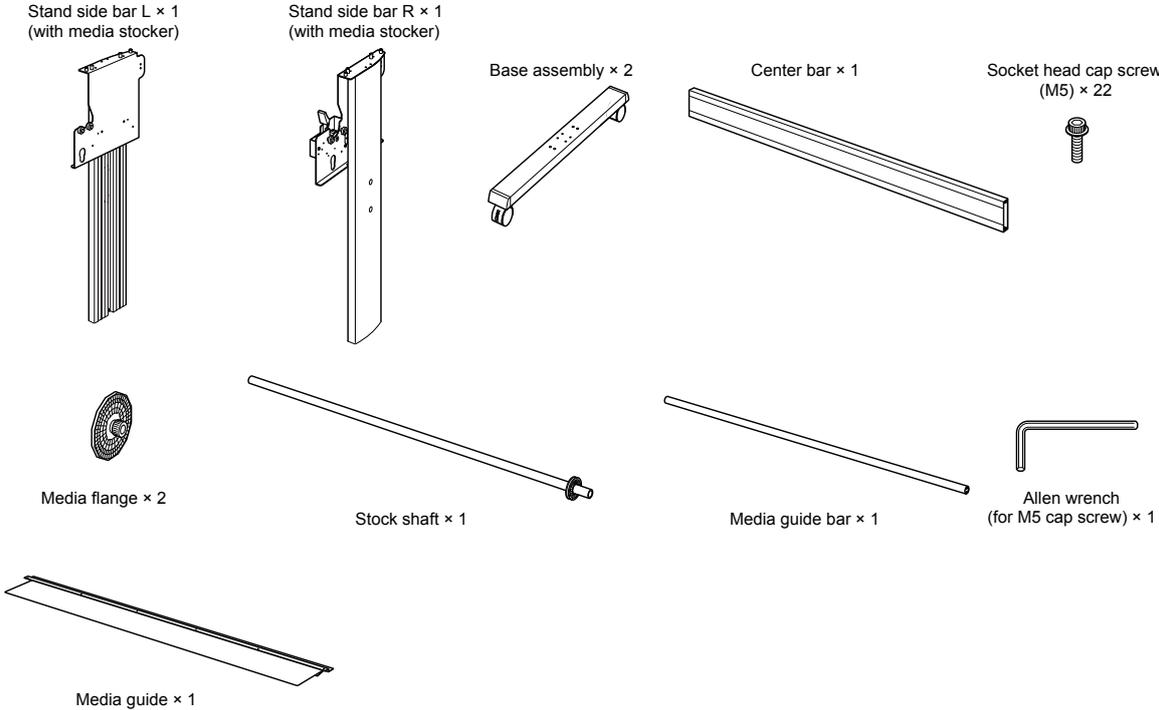


- Power switch**Used to turn the plotter on and off.
- AC line inlet**.....Inlet where the power cable is connected.
- Media stocker**A stock to set roll media in.
- Stock shaft**.....A roller that takes in roll media.
- Stopper**.....Keeps set roll media in place.
- Stand**A stand to put the machine on.
- Media guide bar**.....Used to keep media straight when setting it in.

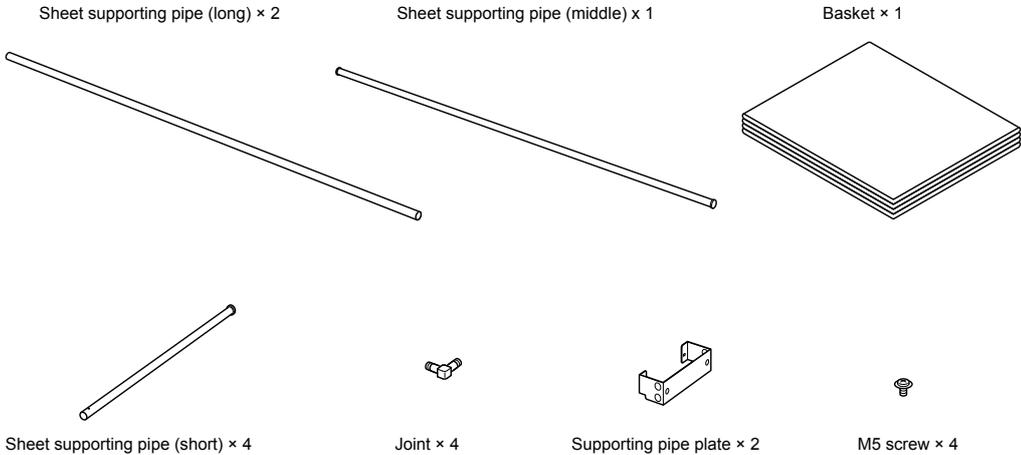
2.4 Assembling the Stand (CE6000-120AP)

The stand is made up of the following parts.

Components of stand

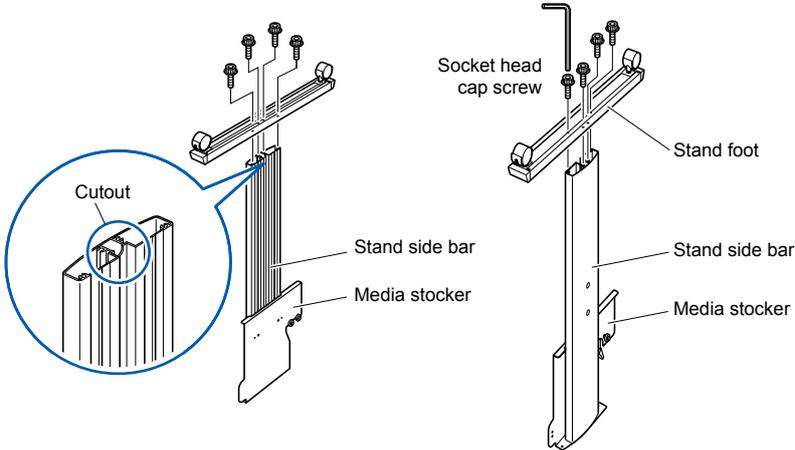


Components of basket

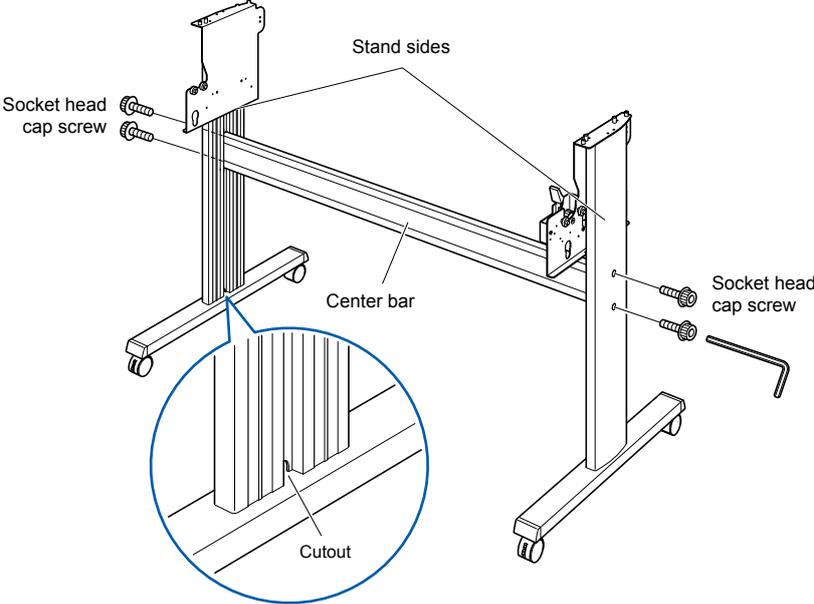


Stand Assembly Instructions : CE6000-120AP

- Please assemble with two or more people.
 - People can be accidentally injured by the machine's edges. Please be very careful.
 - Please be careful not to get your hands pinched or stuck when you secure the machine.
- (1) Assemble the left and right stand sides. Fasten a stand foot to each of the stand side bars with two socket head cap screws using the Allen wrench.

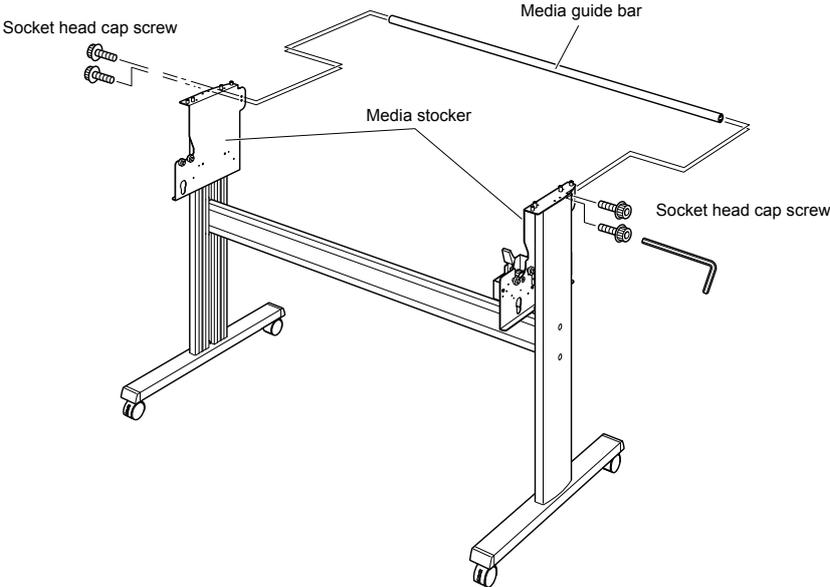


- (2) Loosely fasten the center bar to the left and right stand sides with four socket head cap screws (two on each side), using the Allen wrench. Mount the center bar so that each one of stand feet of short side to be front side.

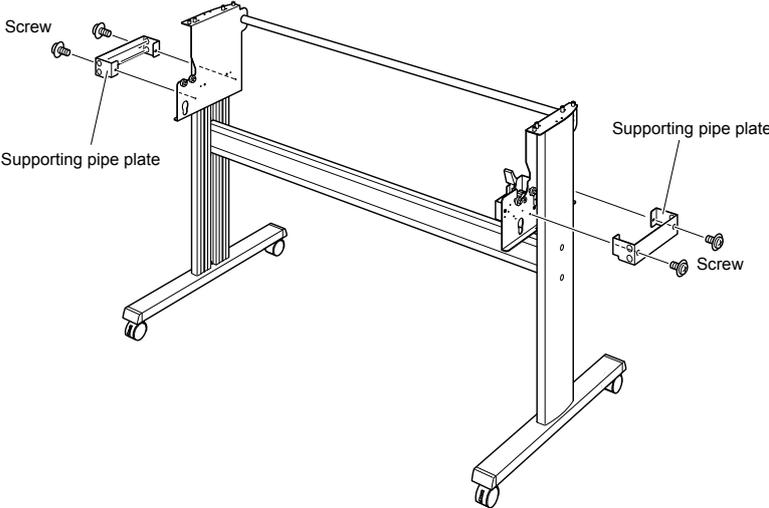


2 PARTS NAMES and FUNCTIONS

(3) Attach the media guide bar to each of the left and right stand sides with four socket head cap screws, using the Allen wrench.

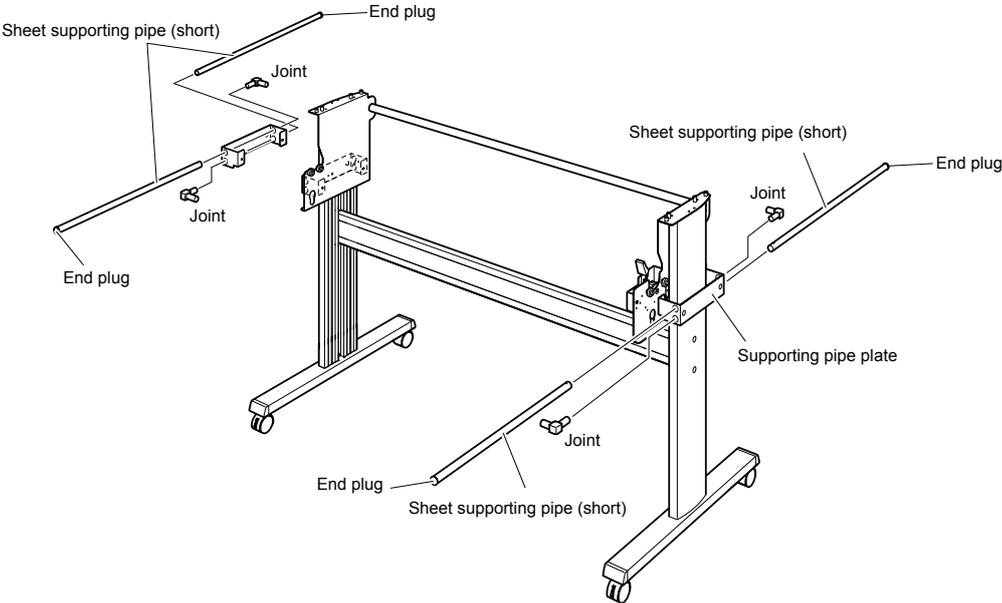


(4) Fasten supporting pipe plate to the left and the right of the stand side bar with four screws (two on each side), using the Allen wrench.

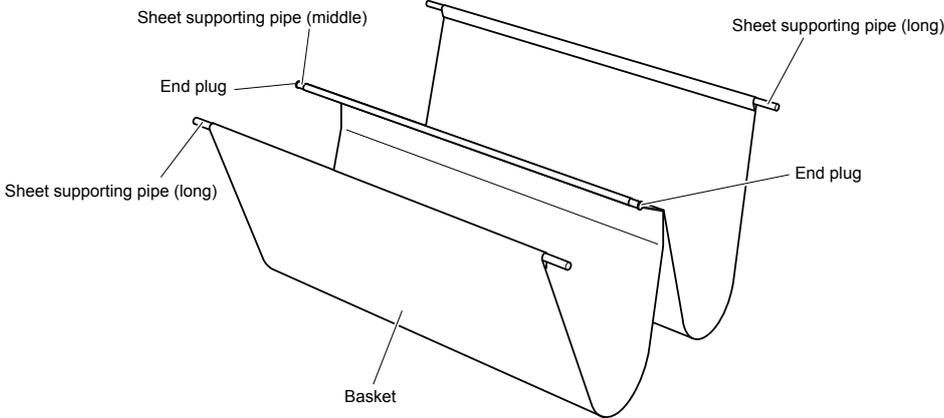


2 PARTS NAMES and FUNCTIONS

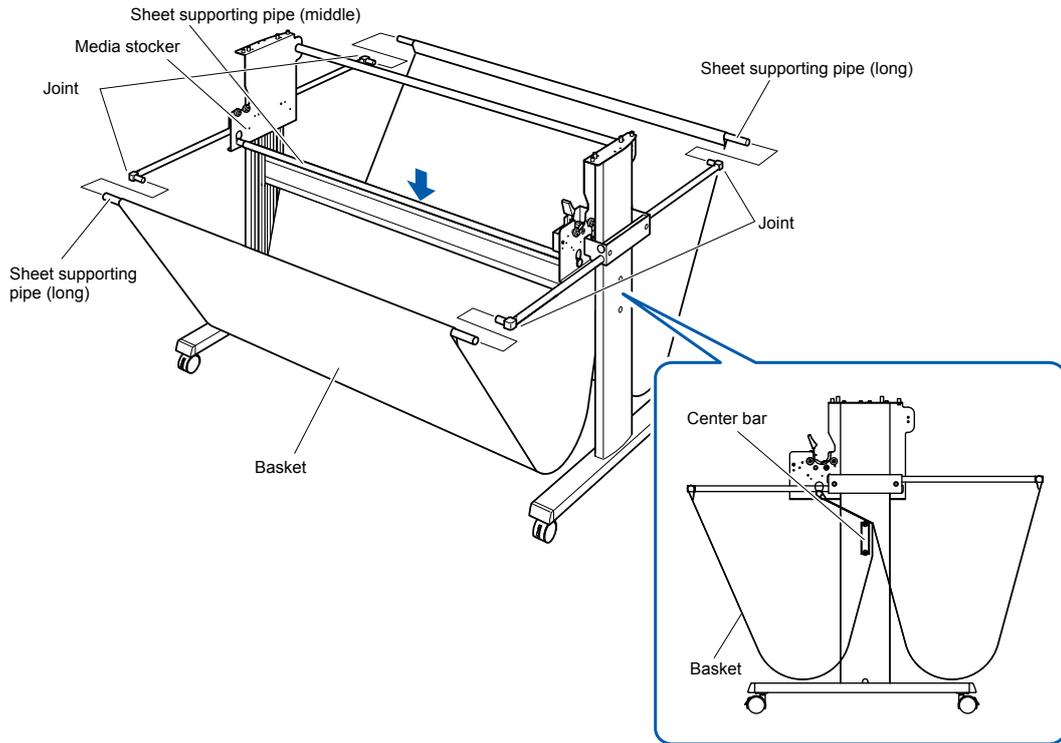
(5) Insert the 4 short sheet supporting pipes into the supporting pipe plate from the end without an end plug. In the front side of the main assembly insert the pipe into the upper side, and insert it into lower side in the rear side. The short sheet supporting pipe ends should now extend out from the front end of the main assembly.



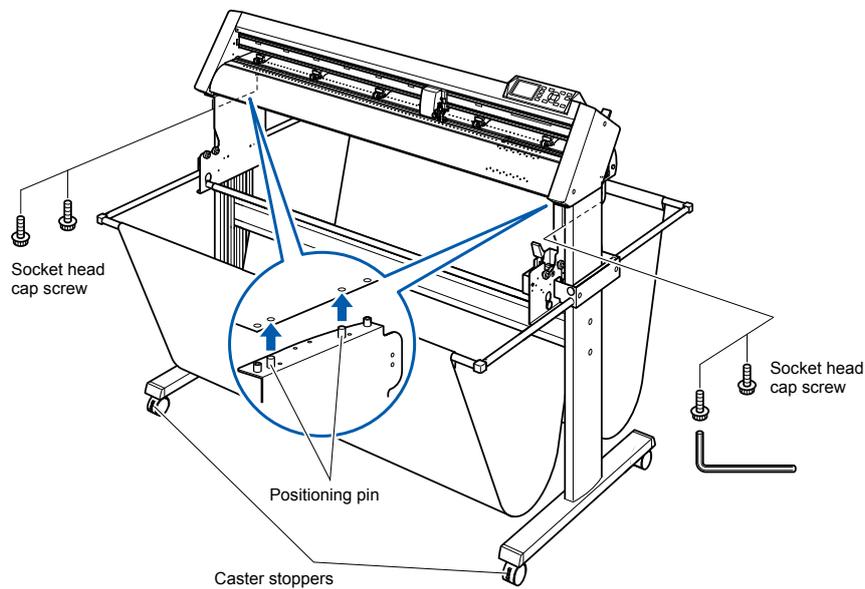
(6) Insert one middle length sheet supporting pipe and 2 long sheet supporting pipes in to the basket. Please insert 1 middle length sheet supporting pipe into the middle of the basket.



- (7) Using the middle sheet supporting pipe, attach the basket assembly from step 6 to the media stocker, then attach the joints from the assembly from step 5 to the long sheet supporting pipe from step 6. The middle of the basket should pass over the back end of the center bar.



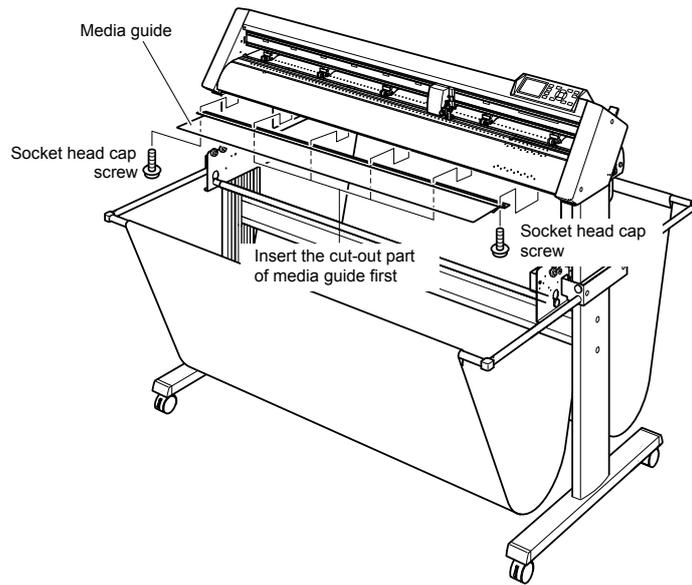
- (8) Mount the plotter on the stand by inserting the positioning pins on the stand into the positioning holes on the underside of the plotter. Fasten with four socket head cap screws (two on each side), using the Allen wrench.



- (9) Tighten the socket head cap screws loosely fastened in Step 2.

Attaching a media guide : CE6000-120AP

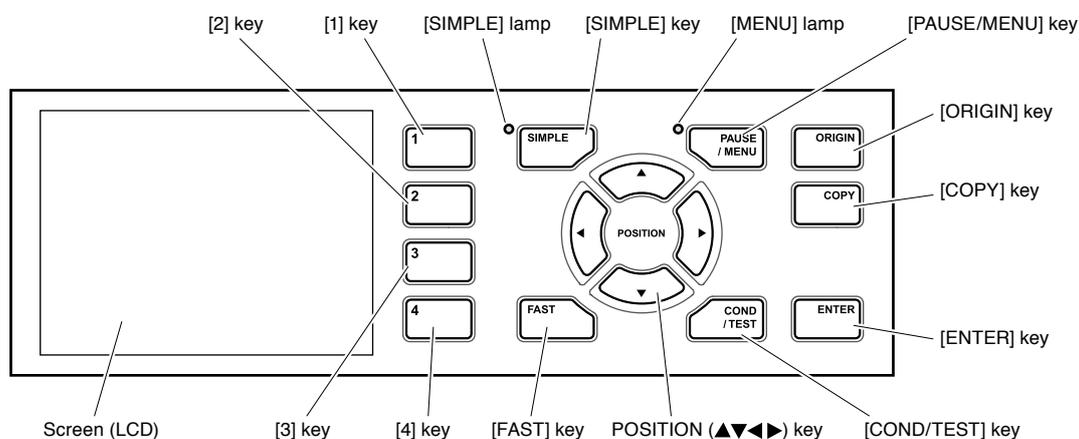
- (1) Insert the cut-out part of the media guide onto the components of the positioning pins at the bottom end of the main assembly. Attach both sides of the media guide using the 2 socket head cap screw.



3 OPERATIONS

This section explains the function of lamps and keys on the control panel.

3.1 Control Panel



Control Keys

POSITION key..... There are following functions depending on the operation.

Move the tool carriage and media. It will move when it is pressed once, and continuously move when it is pressed down. It will select the menu when are displayed in the menu on the screen.

FAST The tool carriage or the media will move faster when it is pressed simultaneously with POSITION key. It will work as a menu key when it is displaying "FAST" on the screen. Press the [FAST] key during READY status to display the current area and tool carriage position.

ORIGIN..... It will set the current position as an origin point.

On the default screen, pressing the [ENTER] and [ORIGIN] keys at the same time will allow you to reset the machine. (Only in Normal mode)

COPY Copy of data in the buffer memory is output.

Menu Keys

SIMPLE You can switch between Simple mode and Normal mode on the default screen.

Switching modes will reset the machine.

PAUSE/MENU..... It will switch to the MENU mode. MENU lamp is lit in the MENU mode.

It will go into MENU mode if it is pressed once, and MENU mode will be turned off when it is pressed again.

Different function are set in the MENU mode.

Data received while in the MENU mode will be stored in the data buffer.

COND/TEST It will display the screen to set the tool conditions.

Use this when checking tool conditions to activate a cutting test.

1, 2, 3, 4.....Select the menu number displayed in the screen.

ENTERIt will define the settings.

Indicator Lamp

SIMPLE LampA green light indicates Simple mode is on.

MENU Lamp.....A green light indicates MENU mode is on.

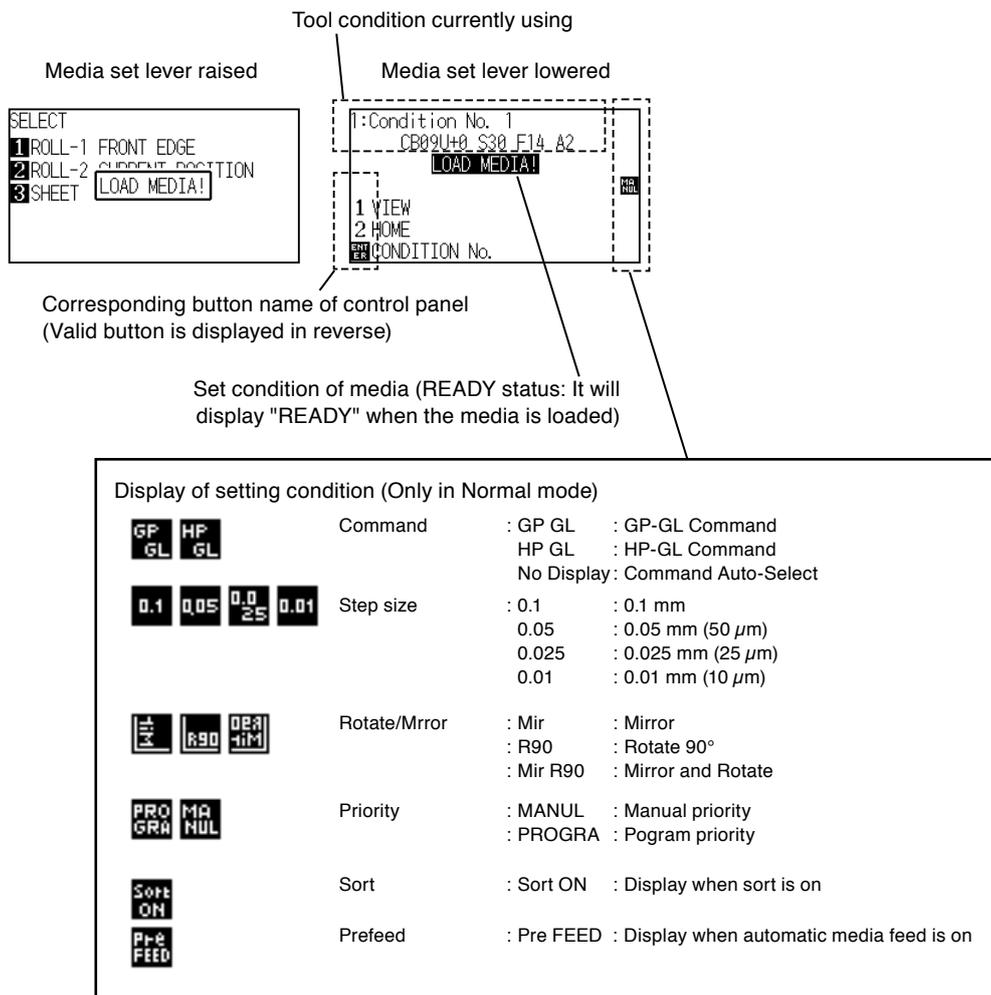
Reading the Screen (LCD)

Information reflecting the status will be displayed in the screen of the control panel.

Name of the button and corresponding function is displayed on the screen when a function is allocated to the button on the control panel. Button name will be displayed in reverse when the button is enabled.

Following items are displayed in the default screen.

This instruction manual will use Normal mode screens to demonstrate everything.



Default Screen (Ready Screen)

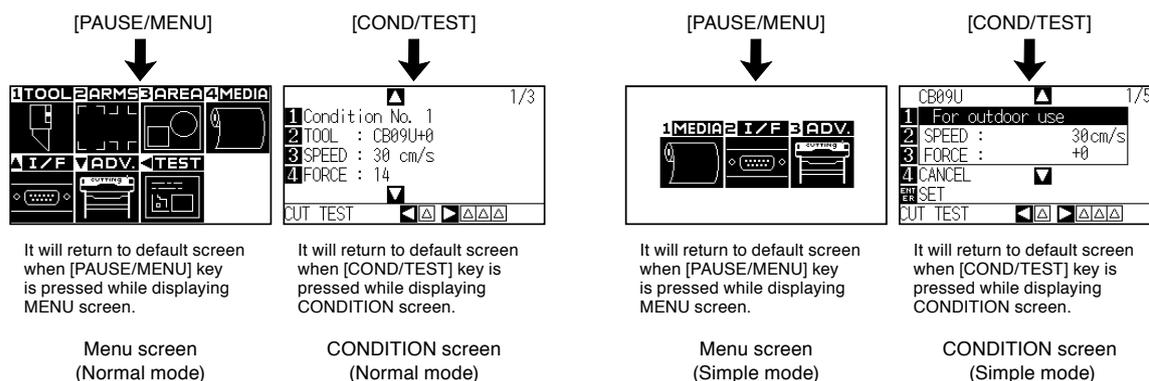


Display of Default Screen (Normal mode)



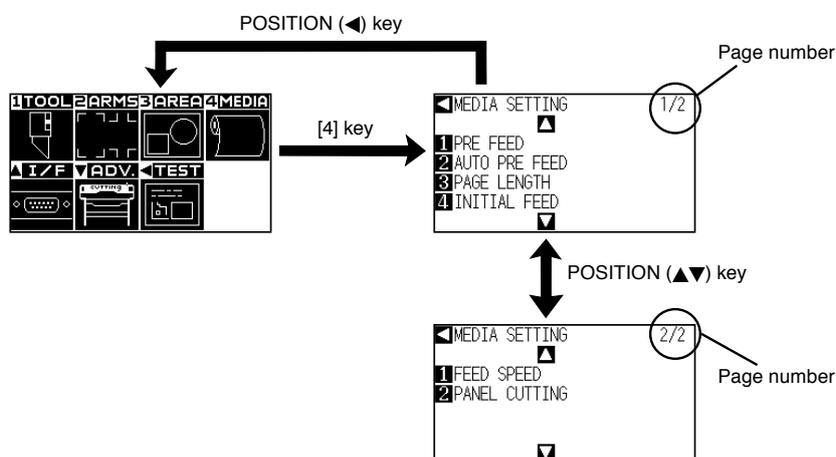
Display of Default Screen (Simple mode)

Screen to set the corresponding conditions is displayed when the [PAUSE/MENU] key or [COND/TEST] key are pressed.



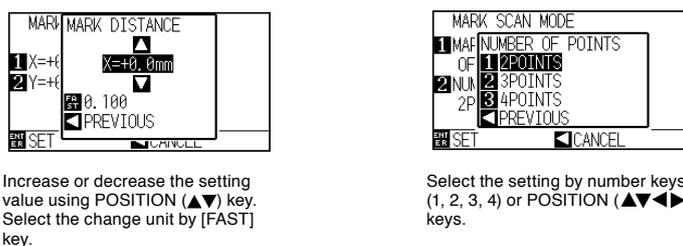
Page number is displayed in the upper right corner of the screen if there are too many settings or selection that will need multiple pages to display.

Press the POSITION key to move to different page.



Example of moving page and operation button (Normal mode)

Icon of the corresponding operation button is displayed in the screen to change the setting values.



Example of screen to change the settings value

Contents of Operation from Menu Screen

You can use the [SIMPLE] key on the default screen to switch between Simple mode and Normal mode. Switching will reset the machine.

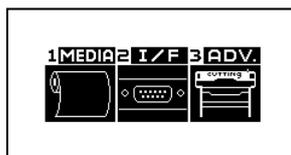
In Simple mode you can change easy settings from the menu screen.

In Normal mode, you will be able to change more detailed settings.

Simple mode and Normal mode are independent from one another. The settings of the mode you're currently in will take precedence.

Simple mode

In Simple mode, [1], [2], [3] keys can be used.



Menu screen
(Simple mode)

Contents of the operation and settings that is displayed in MENU screen with [PAUSE/MENU] key is as following:

- [1] (MEDIA).....Set the setting of the condition for the media.
- [2] (I/F).....Set the settings of the condition for the interfacing with the control computer.
- [3] (ADV).....Set the settings of the conditions for the basic operation of the plotter, such as display language, unit of the measurements.
- [PAUSE/MENU].....It will close the MENU screen and return to default screen.

Normal mode

In Normal mode, [1], [2], [3], [4] and [Δ], [▽], [◀] keys can be used.



Menu screen
(Normal mode)

Contents of the operation and settings that is displayed in MENU screen with [PAUSE/MENU] key is as following:

- [1] (TOOL).....Set the setting for the operation of the tool.
- [2] (ARMS).....Set the settings and operation to position the tool and media, such as automatic scanning of the registration marks by the ARMS.
- [3] (AREA)Set the settings for area, magnification, rotation, reverse, etc., of the cutting.
- [4] (MEDIA).....Make the setting of the condition for the media.
- [Up arrow] (I/F)Make the settings of the condition for the interfacing with the control computer.
- [Down arrow] (ADV)Make the settings of the conditions for the basic operation of the plotter, such as display language, unit of the measurements.

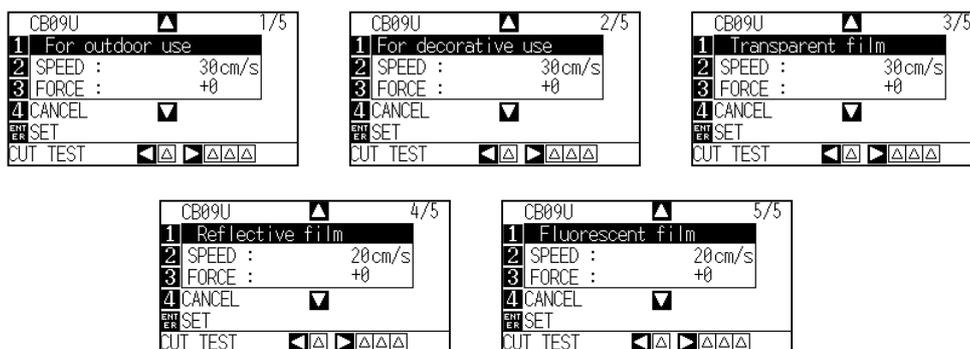
[Left arrow] (TEST).....Does the operation necessary for maintenance, such as self diagnostic test or printout of the condition settings list.

[PAUSE/MENU].....It will close the MENU screen and return to default screen.

[FAST]Displays the position key screen. When media is set, the tool point can be moved.

Contents of Operation from [COND/TEST] Key

Simple mode



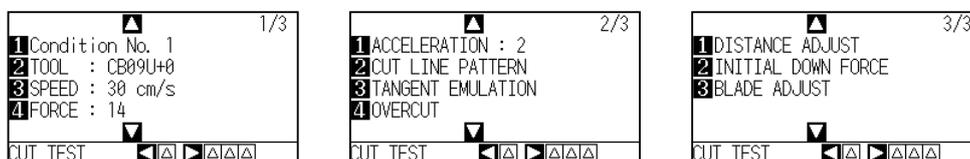
CONDITION screen (1-5): (Simple mode)

The [COND/TEST] key brings up the SETTING screens, where you can change the media type and tool conditions.

The preset cutting condition is used when the media type is selected.

[COND/TEST]: This will clear the CONDITION screen and return to default screen.

Normal mode



CONDITION screen (1-3) : (Normal mode)

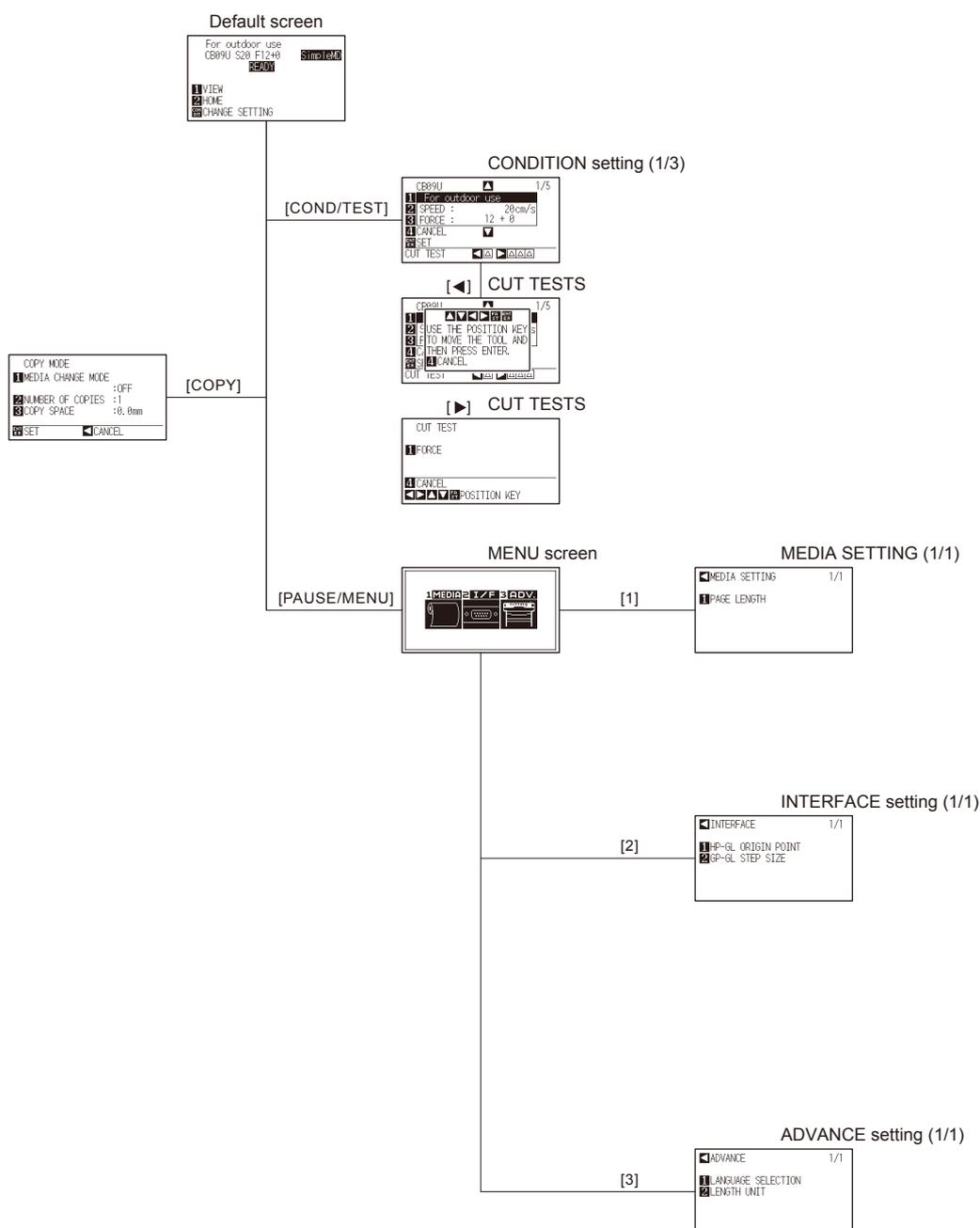
Tool conditions are set in the setting screens displayed by the [COND/TEST] key.

Up to 8 CONDITION settings can be saved with different settings in numbers 1 through 8.

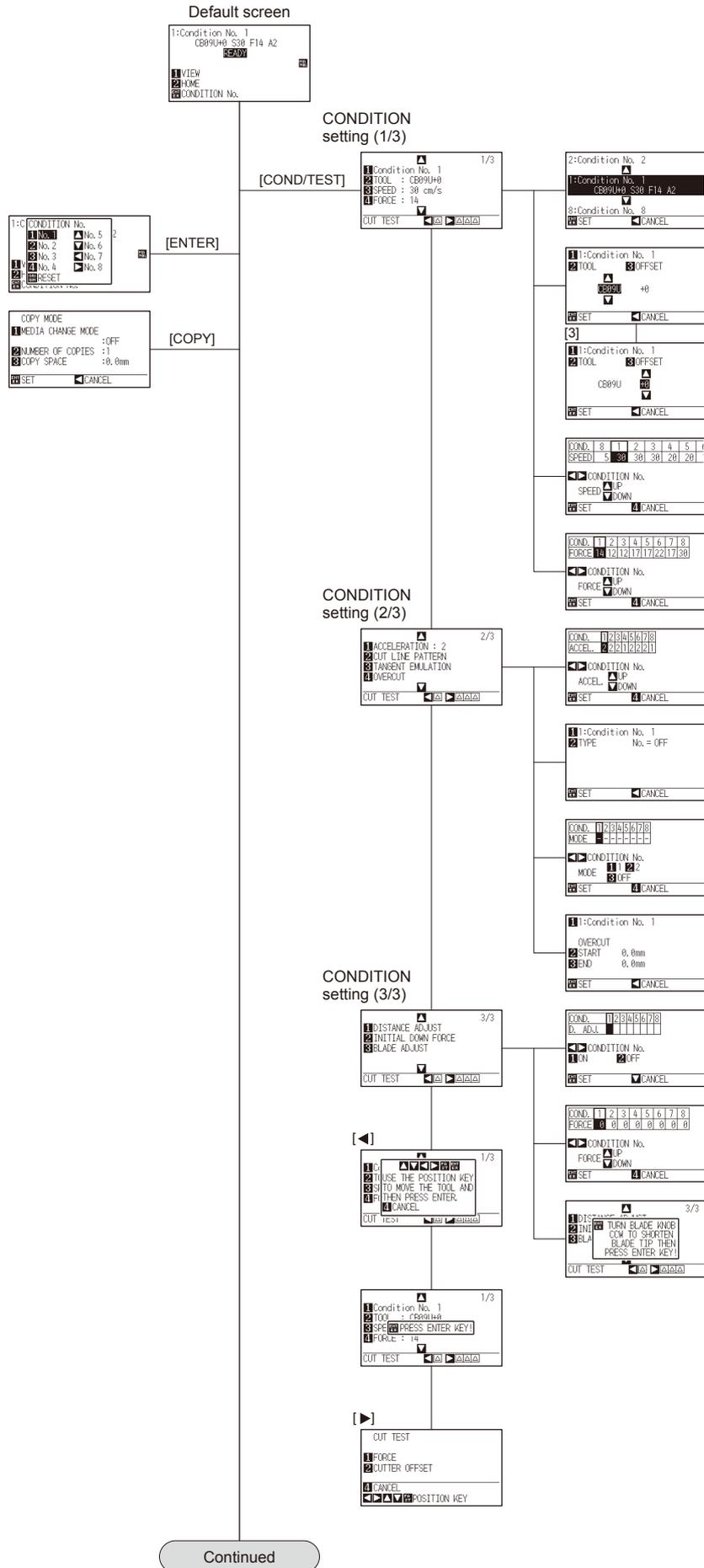
[COND/TEST]: This will clear the CONDITION screen and return to default screen.

3.2 Menu Tree

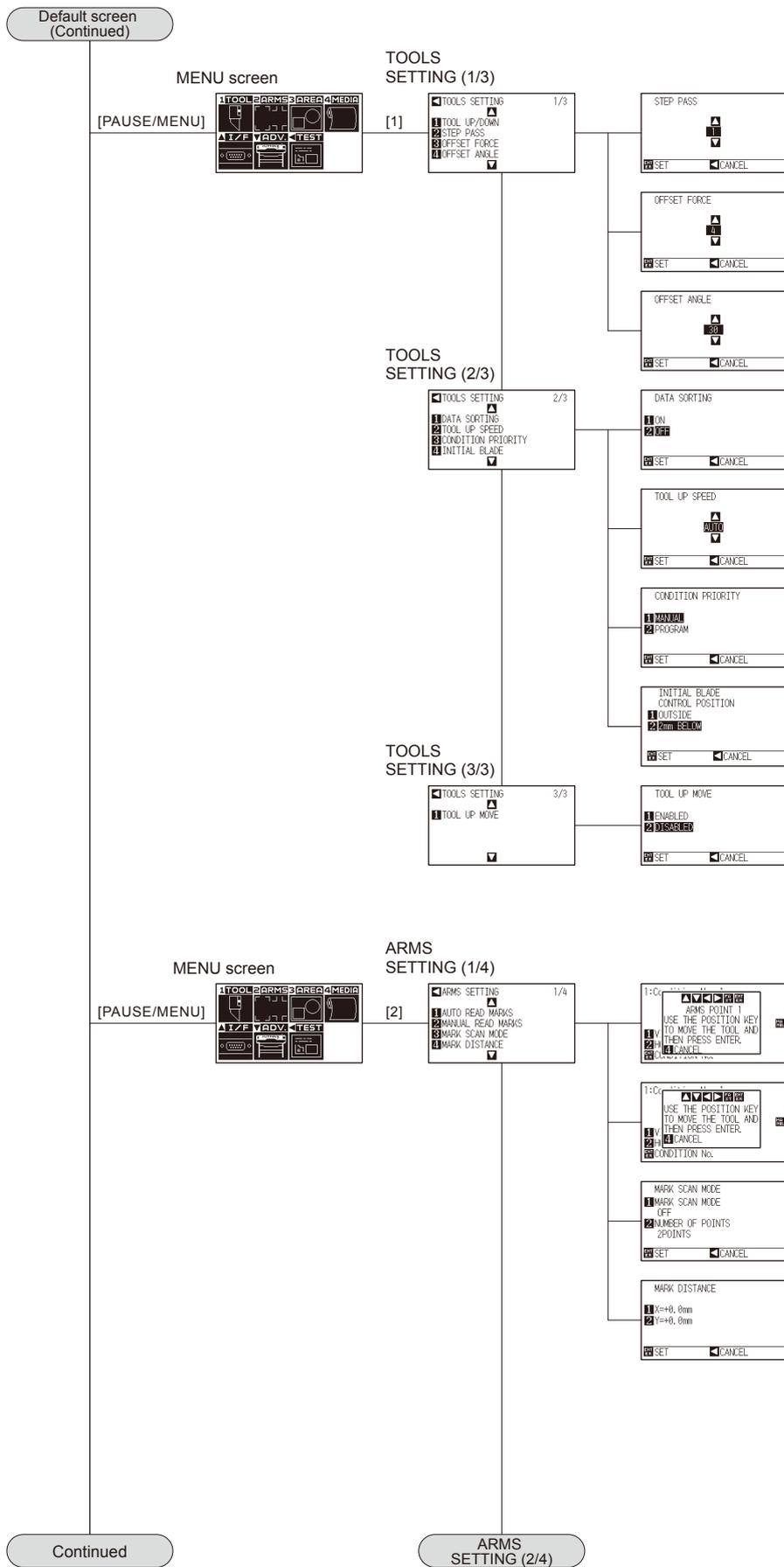
Simple Menu (CE6000-40/60/120/120AMD)

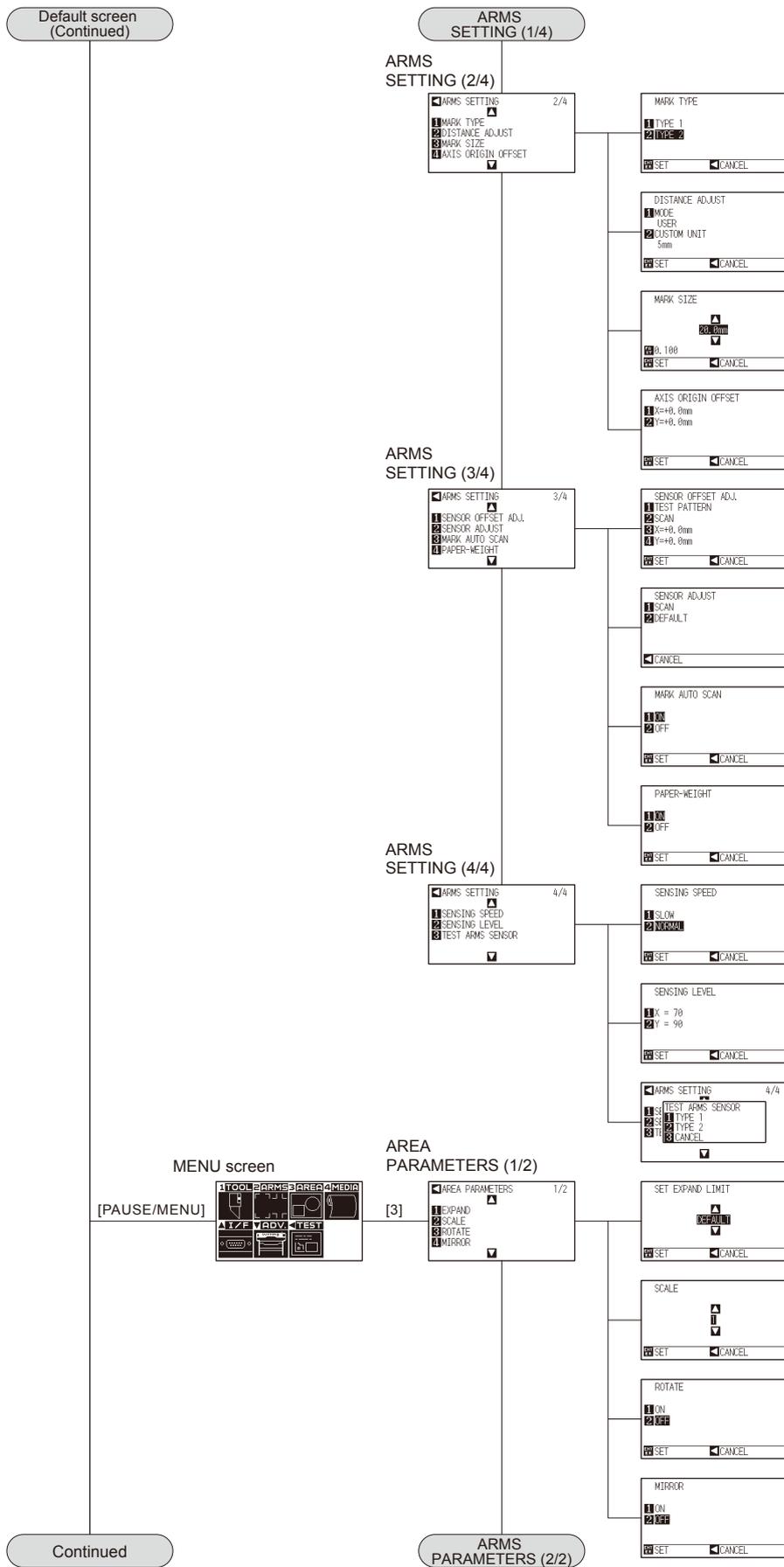


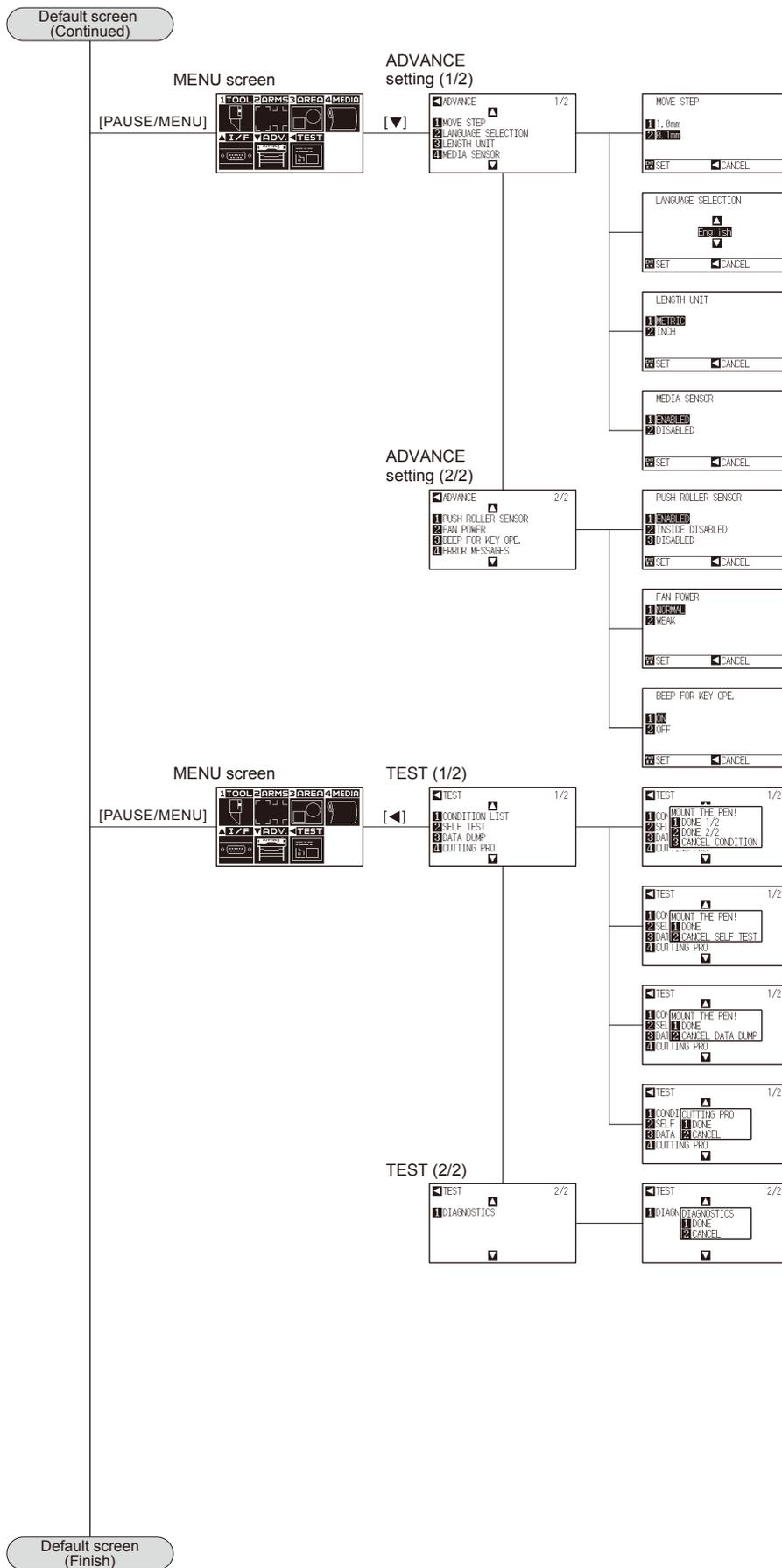
Normal Menu (CE6000-40/60/120/120AMD)



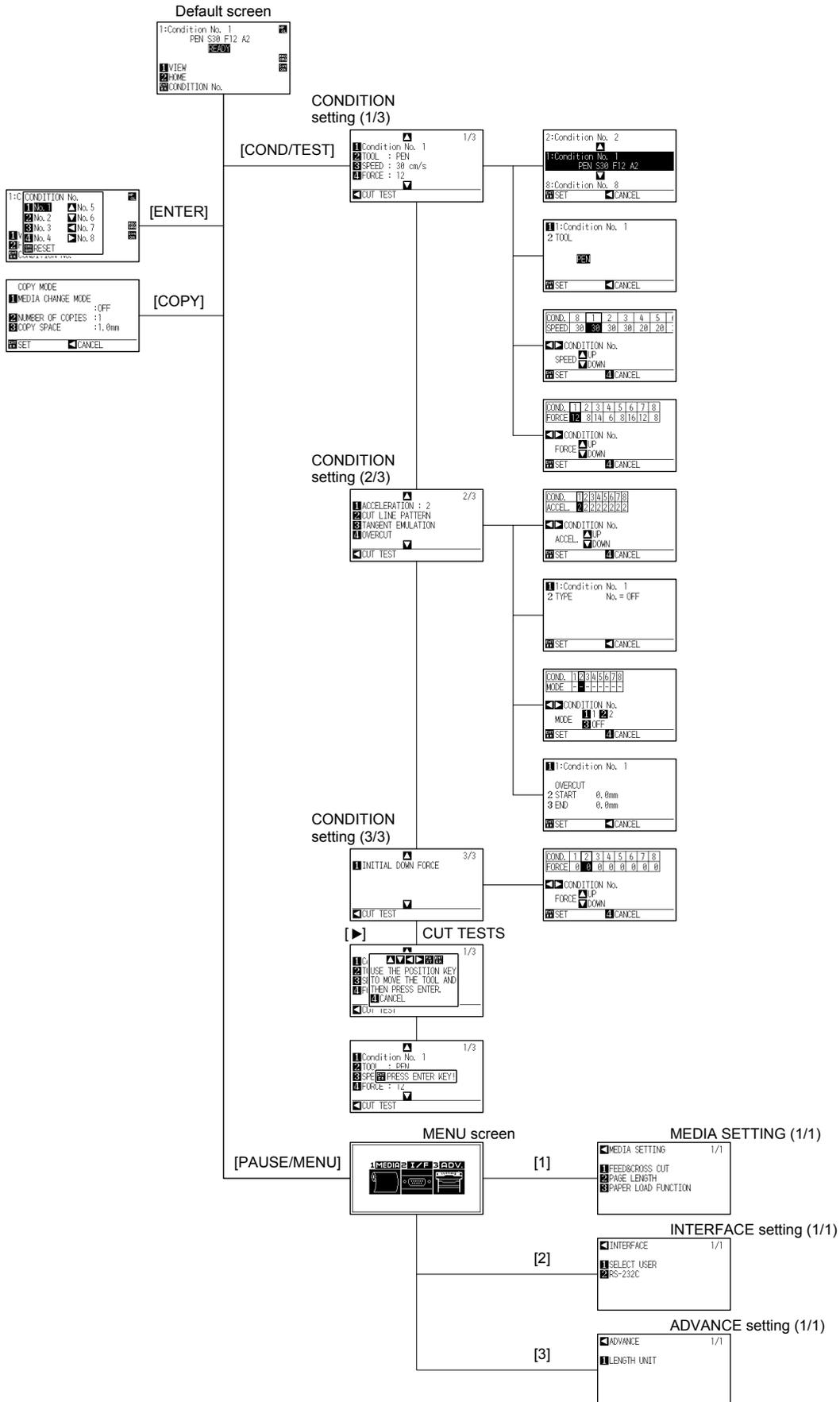
Continued



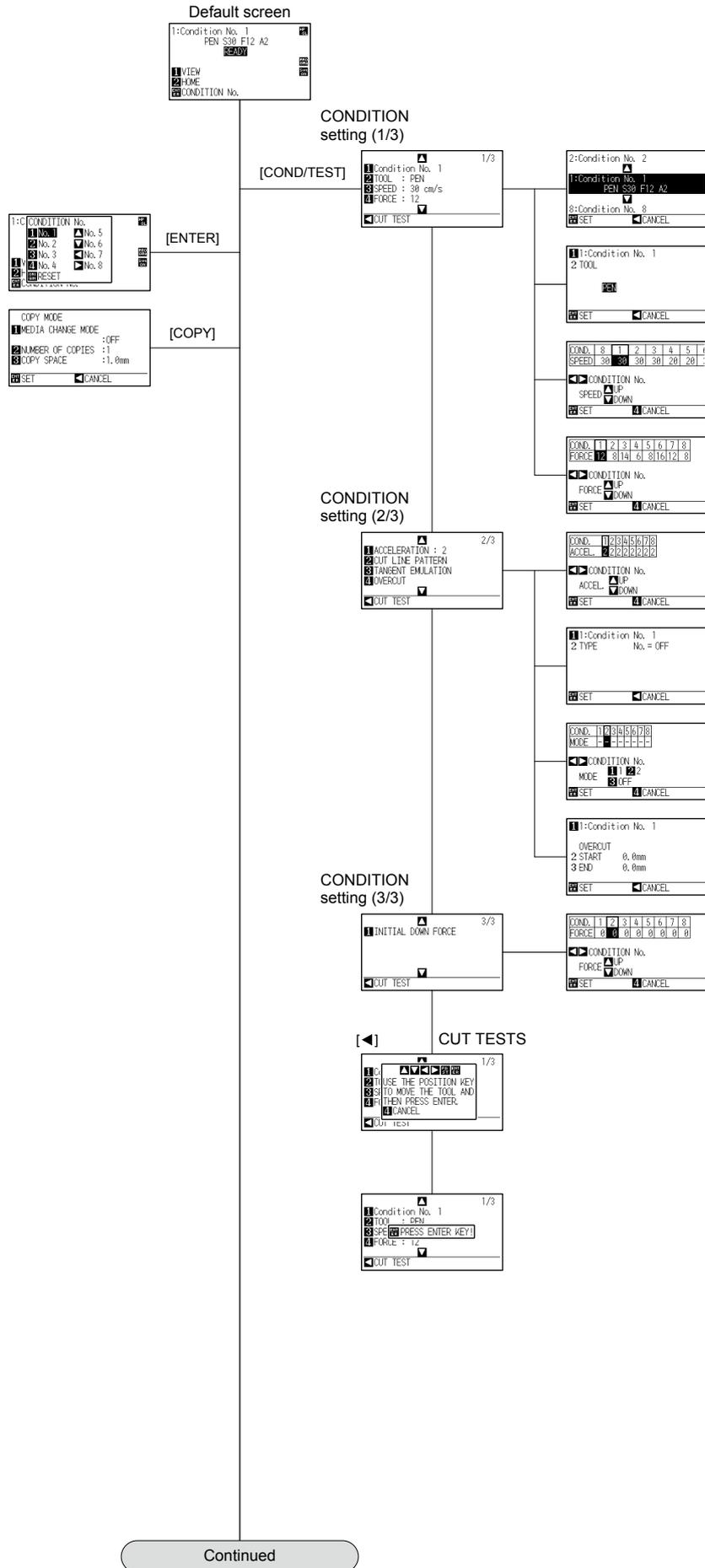


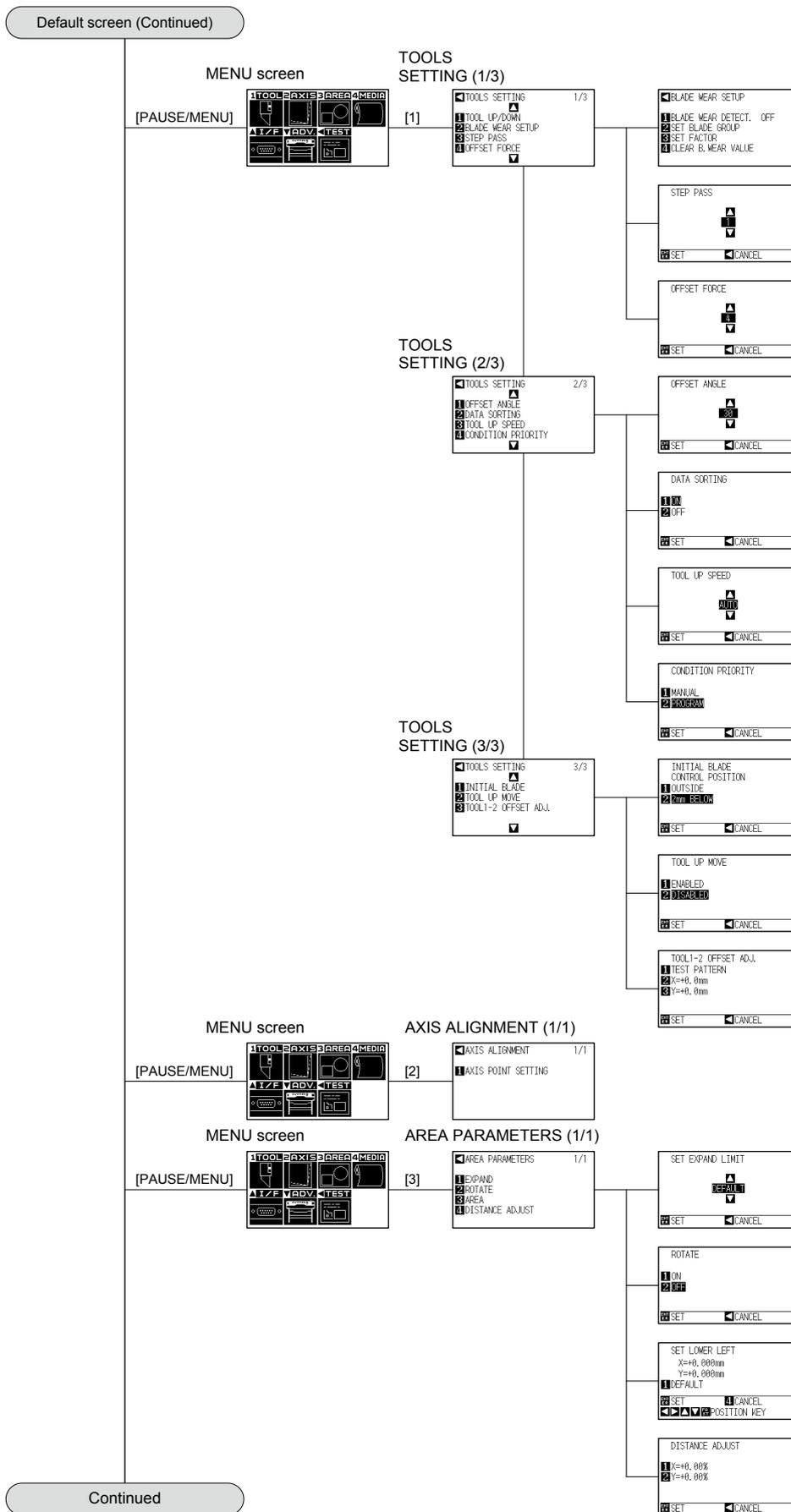


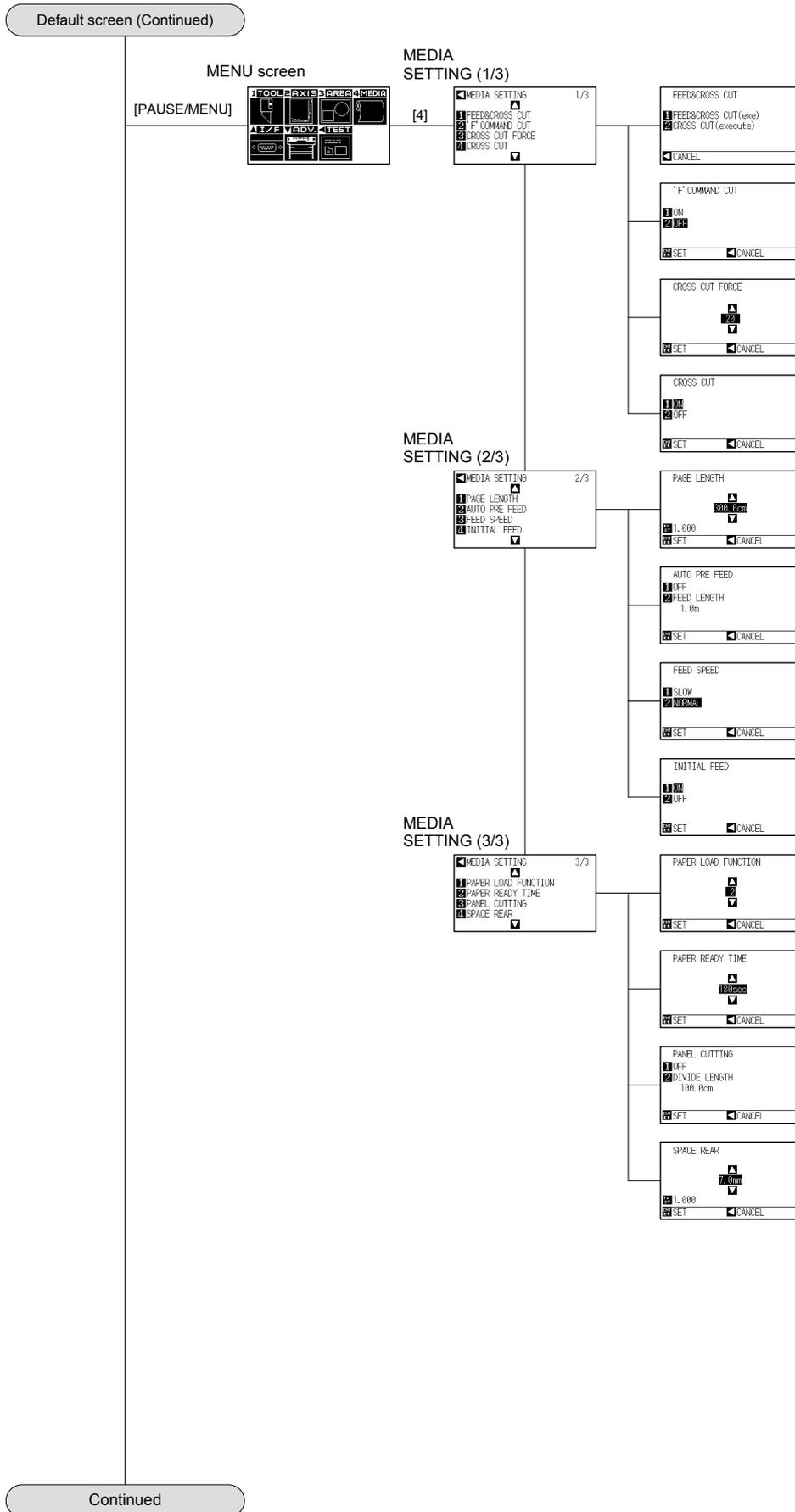
Simple Menu (CE6000-120P)

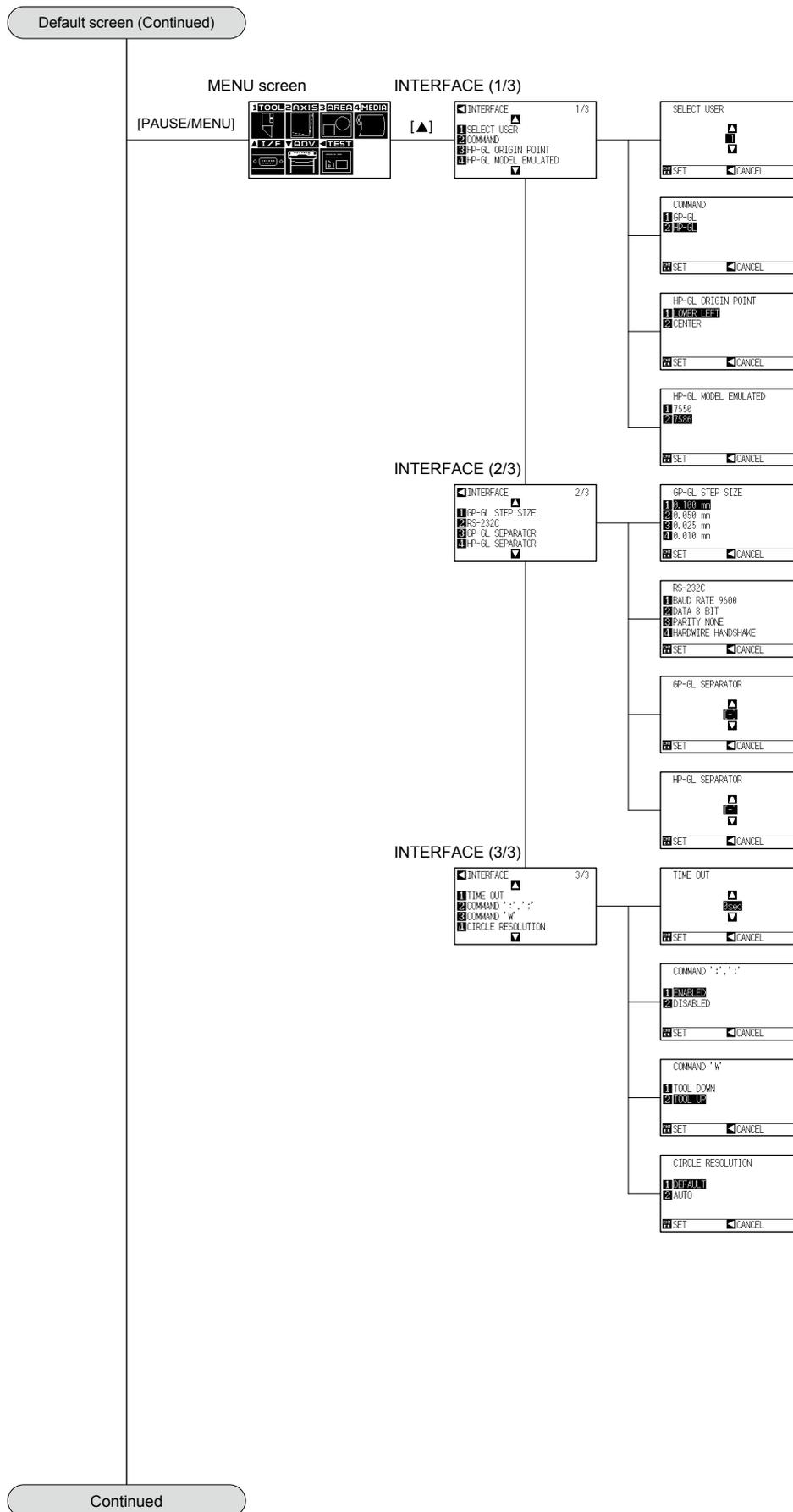


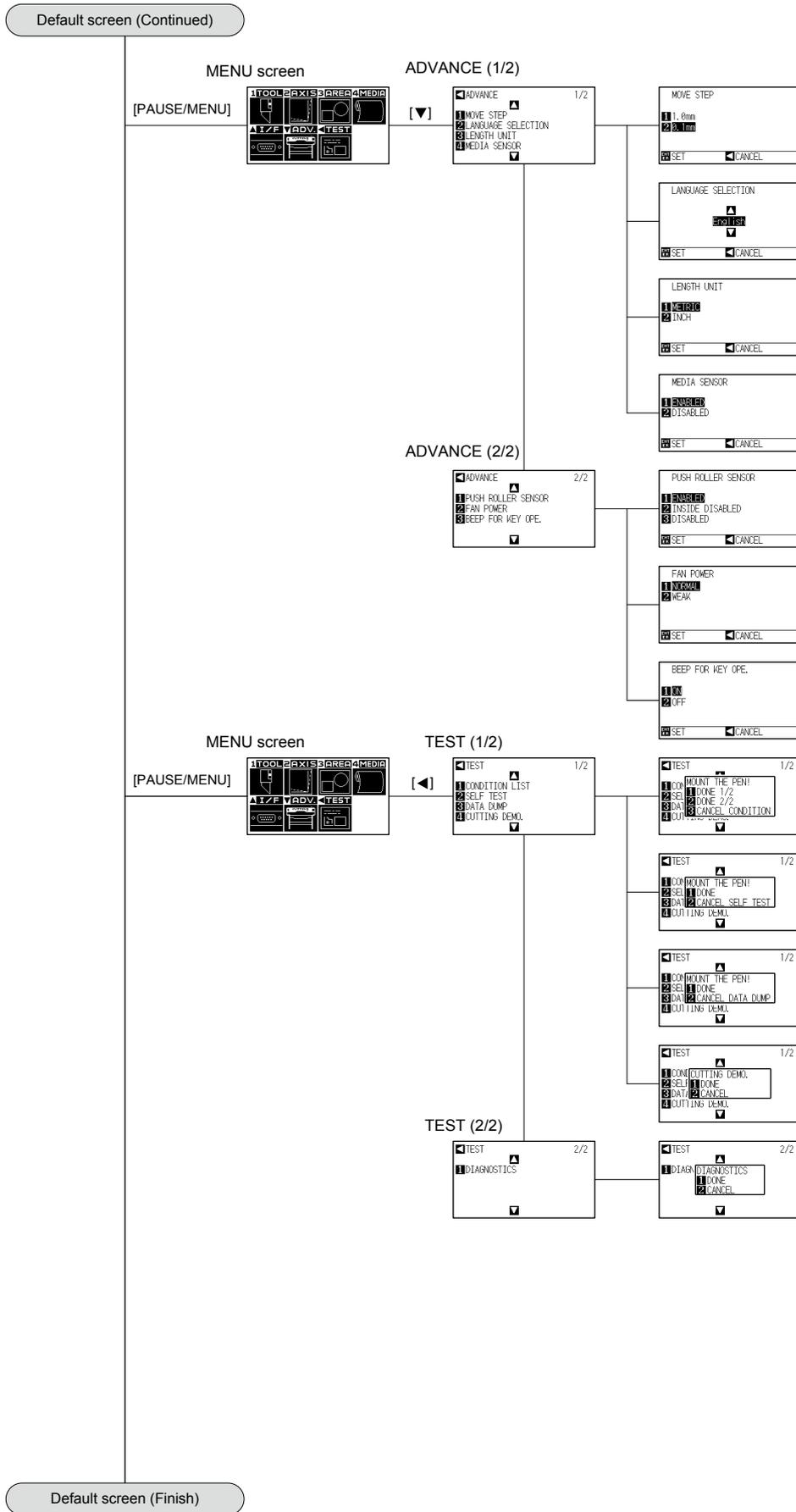
Normal Menu (CE6000-120AP)











4 RECOMMENDED PARTS LIST

No.	Part No.	Description	-40	-60	-120	-120AMO	-120AP	Remarks
1	621352000	Push Roller	2	2	3	4	5	
2	CE6-CM40-2	Cutting Mat 40 (2 pcs)	1	—	—	—	—	Supply Parts
	CE6-CM60-2	Cutting Mat 60 (2 pcs)	—	1	—	—	—	Supply Parts
	CE6-CM120-2	Cutting Mat 120 (2 pcs)	—	—	1	1	1	Supply Parts
3	792600709	Belt, Y belt, 50S2M613LWC	1	—	—	—	—	
	792600710	Belt, Y belt, 50S2M841LWC	—	1	—	—	—	
	792600711	Belt, Y belt, 100S2M1483LWC	—	—	1	1	1	
4	378008121	Belt, X drive belt, 60S2M162G	1	1	1	1	1	X Motor
5	378008421	Belt, Y drive belt, 60S2M168G	1	1	1	1	1	Y Motor
6	621583102	Y Drive Pulley	1	1	1	1	1	
7	792600700	Main Board, CE6000	1	1	1	1	—	PN9082-01
	792600730	Main Board, CE6000-120AP	—	—	—	—	1	
8	682157190	Fan, 9A0924G404	1	1	2	2	2	
9	692157375	Y Flexible Cable, FFC908207, CE6000-40	1	—	—	—	—	FFC908207
	692157337	Y Flexible Cable, FFC908203, CE6000-60	—	1	—	—	—	FFC908203
	692157347	Y Flexible Cable, FFC908204, CE6000-120	—	—	1	1	1	FFC908204
10	562500141	Power Supply, ZWS150B-24/FV	1	1	1	1	1	ZWS150B-24/FV
11	692157356	Flexible Cable, FFC908205, Cam Sensor	1	1	1	1	1	FFC908205
12	692157366	Flexible Cable, FFC908206, Pinch Roller	1	1	1	1	1	FFC908206
13	692157326	Flexible Cable, FFC908202, Control Panel	1	1	1	1	1	FFC908202
14	561080035	Sensor, PS117EL1	2	2	2	2	2	Paper Sensor
15	682157211	Motor, DMN37JE-X01	2	2	—	—	—	X and Y Motor
	682157211	Motor, DMN37JE-X01	—	—	1	1	1	Y Motor
16	682157220	Motor, UGFMED-B5LGRB2	—	—	1	1	1	X Motor
17	792600701	Pen Block Assembly STD, CE6000	1	1	1	1	—	Standard Model
	792600708	Pen Block Assembly U, CE6000	1	1	1	1	—	USA Model
	792600726	Pen Block Assembly CE6000-120AP	—	—	—	—	1	
18	792600702	Pen Relay Board, CE6000	1	1	1	1	1	PN9082-05, Y Relay Board
19	792600703	Pinch Roller Sensor Board, CE6000	1	1	1	1	1	PN9082-06
20	792600704	Cam Sensor Board, CE6000	1	1	1	1	1	PN9082-07
21	792600705	Registration Mark Sensor Board, CE6000	1	1	1	1	—	PN9082-09
22	792600706	Control Panel Board, CE6000	1	1	1	1	1	PN9082-08
23	682157130	LCD, BTG240128SFBWBGG, CE6000	1	1	1	1	1	
24	792600707	Fan Relay Board, CE6000-120	—	—	1	1	1	PN9082-12
25	621572102	Drive Roller Shaft, CE6000-40	1	—	—	—	—	CE6000-40
	621582002	Drive Roller Shaft, CE6000-60	—	1	—	—	—	CE6000-60
	621592102	Drive Roller Shaft, CE6000-120	—	—	1	1	1	CE6000-120/AMO/AP
26	621582090	Bearing, Drive Roller, 6900ZZNJRJECE	2	2	2	2	2	
27	621582400	Bearing, Drive Roller Holder, 12HF408	2	2	8	8	8	

5 LIST OF TOOLS

5.1 Tools

No.	Adjustment Item	Jig	Tool
1	Pen force adjustment	Cutter pen holder (CB09)	Correx Dial Tension gauge (50,300,500 gf)
2	Distance adjustment		Glass scale
3	Pen block height adjustment	10 mm height block	
4	Firmware update		PC, USB I/F cable
5	X-drive belt tension adjustment		Push-pull gauge (2 kg)
6	Y-drive belt tension adjustment		Push-pull gauge (2 kg)
7	Replacing the main board		Short screwdriver (50 mm)
8	Replacing the vacuum fan		

5.2 Greasing And Gluing Points

No.	Grease or Glue Point	Grease or Glue name	Application quantity
1	Cam	Shinetu silicon grease G501	Suitable quantity
2	X-drive motor pulley	Shinetu silicon grease G501	Suitable quantity
3	Y-drive motor pulley	Shinetu silicon grease G501	Suitable quantity
4	X-drive pulley	Shinetu silicon grease G501	Suitable quantity
5	Y-drive pulley	Shinetu silicon grease G501	Suitable quantity
6	Y-tension pulley	Shinetu silicon grease G501	Suitable quantity
7	Y-rail, push roller assy sliding area	Shinetu silicon grease G501	Suitable quantity
8	Y-motor drive pulley set screws	Loctite 222	Small quantity
9	X-motor drive pulley set screws	Loctite 222	Small quantity
10	X-drive pulley set screws	Loctite 222	Small quantity

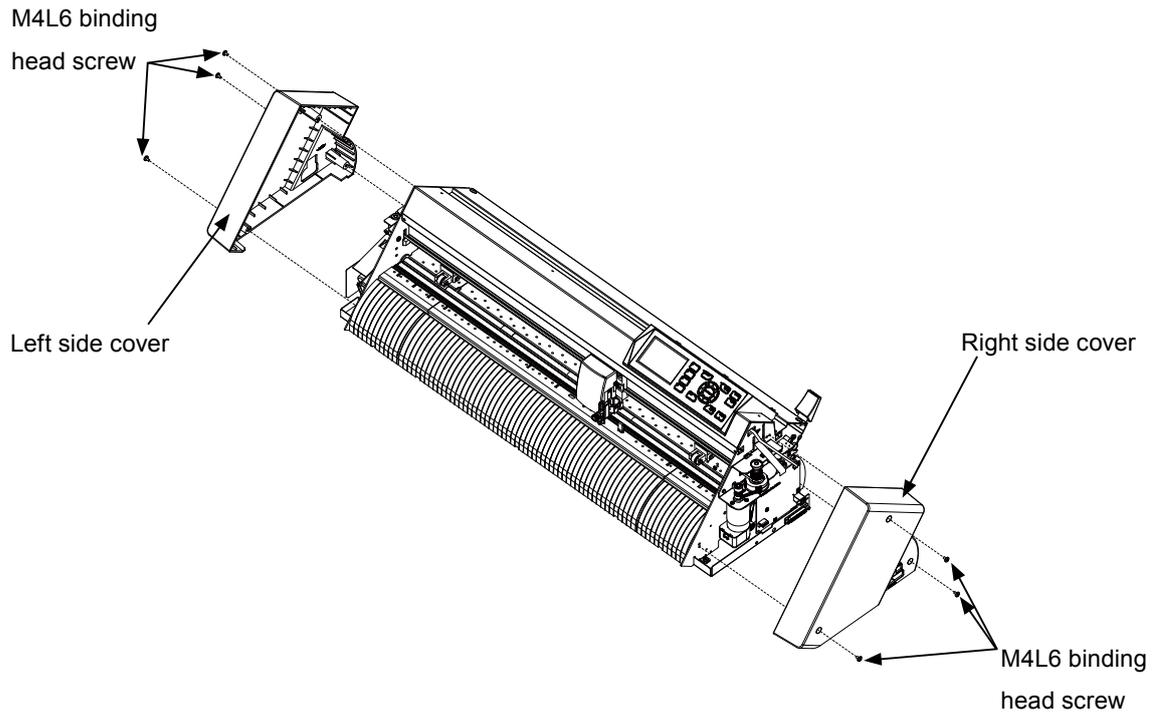
6 DISASSEMBLY AND REASSEMBLY

6.1 Exterior Parts

6.1.1 Right Side Cover

How to detach the right side cover

- (1) Remove the three M4L6 binding head screws holding the right side cover, and then detach the right side cover.



How to reinstall the right side cover

- (1) Reattach the right side cover in the reverse order in which it was detached.

6.1.2 Left Side Cover

How to detach the left side cover

- (1) Remove the three M4L6 binding head screws holding the left side cover, and then detach the left side cover.

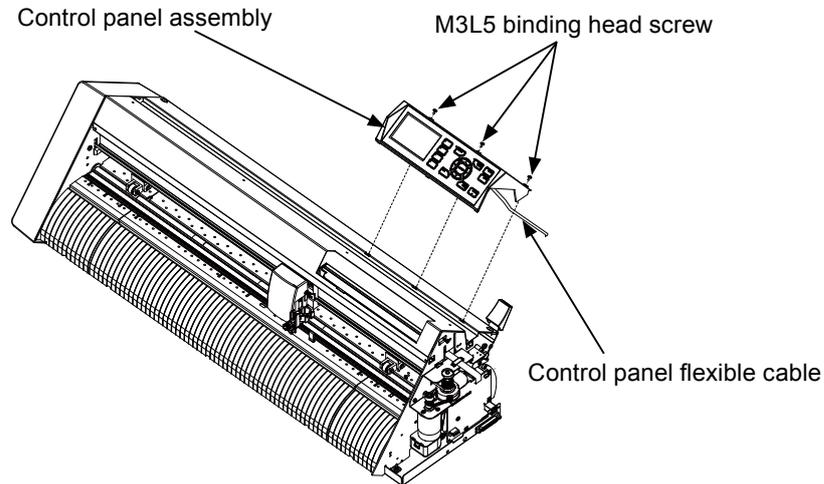
How to reinstall the left side cover

- (1) Reattach the left side cover in the reverse order in which it was detached.

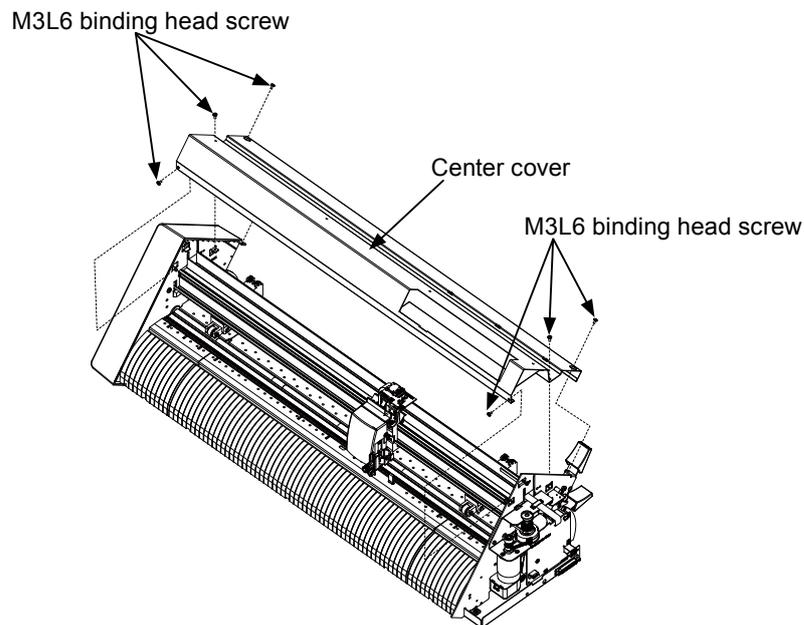
6.1.3 Center Cover

How to detach the center cover

- (1) Detach the right side cover (See section 6.1.1.).
- (2) Disconnect the control panel flexible cable from the main board.
- (3) Remove the three M3L5 binding head screws holding the control panel assembly, and then detach the control panel assembly.



- (4) Remove the six M3L6 binding head screws holding the center cover, and then detach the center cover.



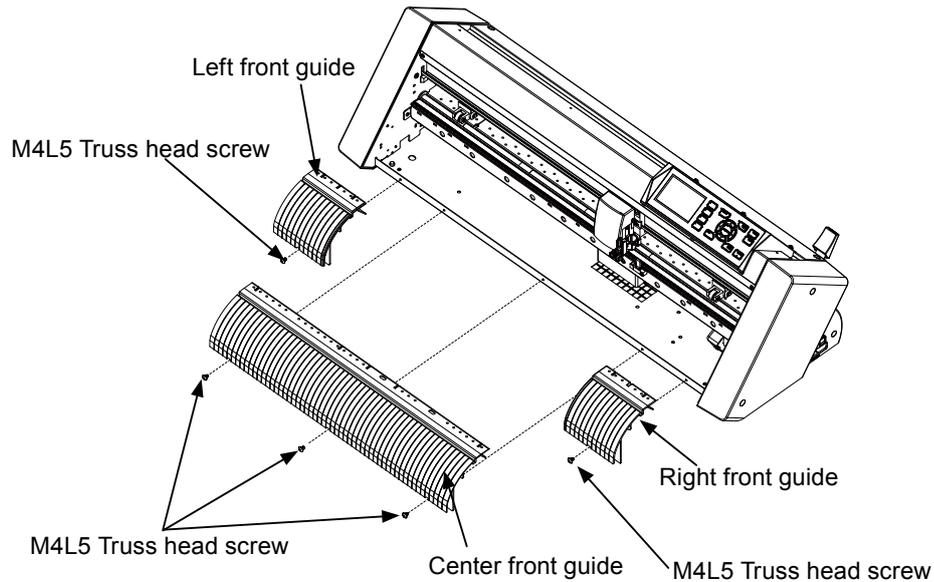
How to reinstall the center cover

- (1) Reattach the center cover in the reverse order in which it was detached.

6.1.4 Front Guide (CE6000-40/60)

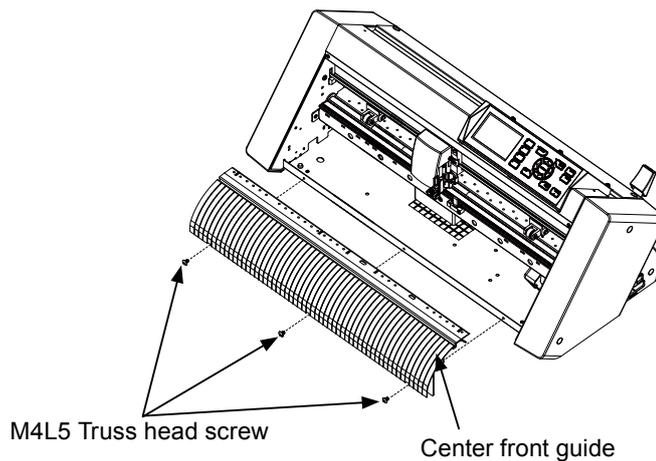
How to detach the front guide (CE6000-60)

- (1) Remove the three M4L5 truss head screws holding the center front guide and then detach the center front guide.
- (2) Remove the M4L5 truss head screw holding the right front guide, and then detach the right front guide.
- (3) Remove the M4L5 truss head screw holding the left front guide, and then detach the left front guide.



How to detach the front guide (CE6000-40)

- (1) Remove the three M4L5 truss head screws holding the center front guide and then detach the center front guide.



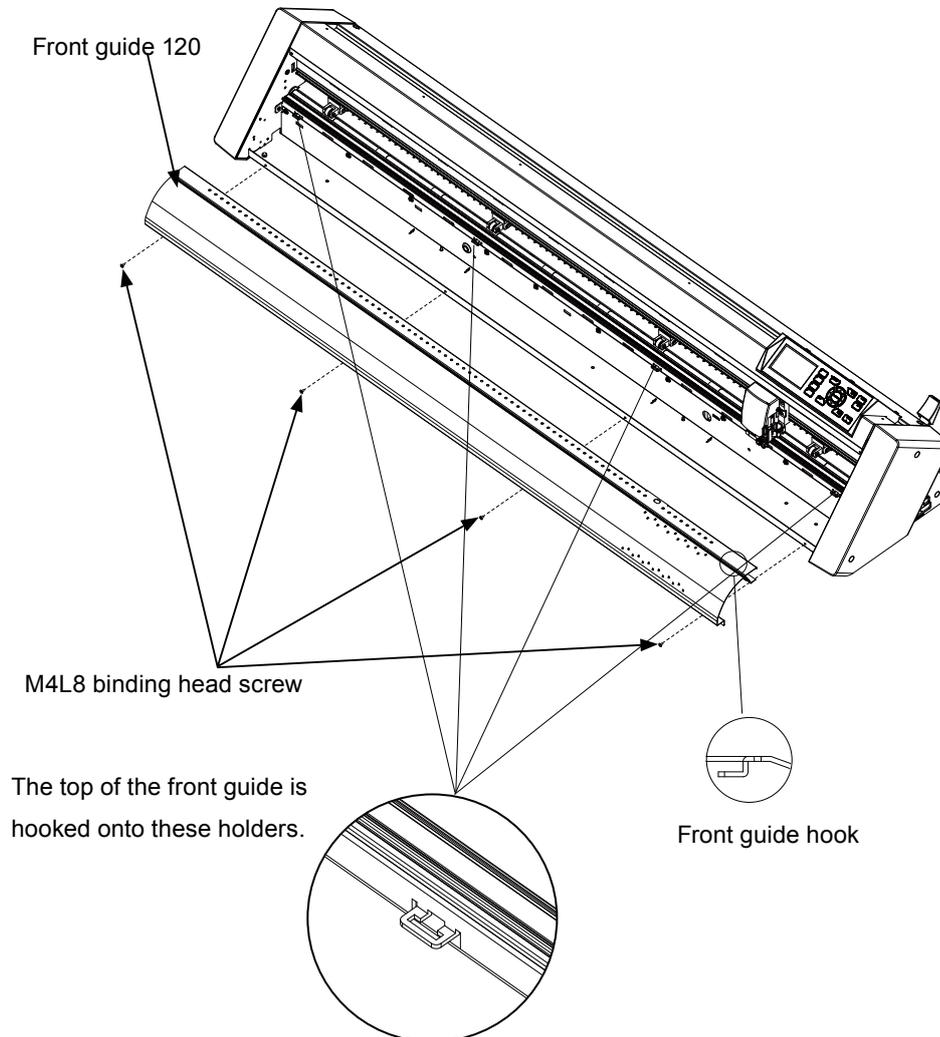
How to reinstall the front guide

- (1) Reattach the front guide in the reverse order in which it was detached.

6.1.5 Front Guide (CE6000-120)

How to detach the front guide (CE6000-120)

- (1) Remove the four M4L8 binding head screws holding the front guide 120, and then detach the front guide 120.



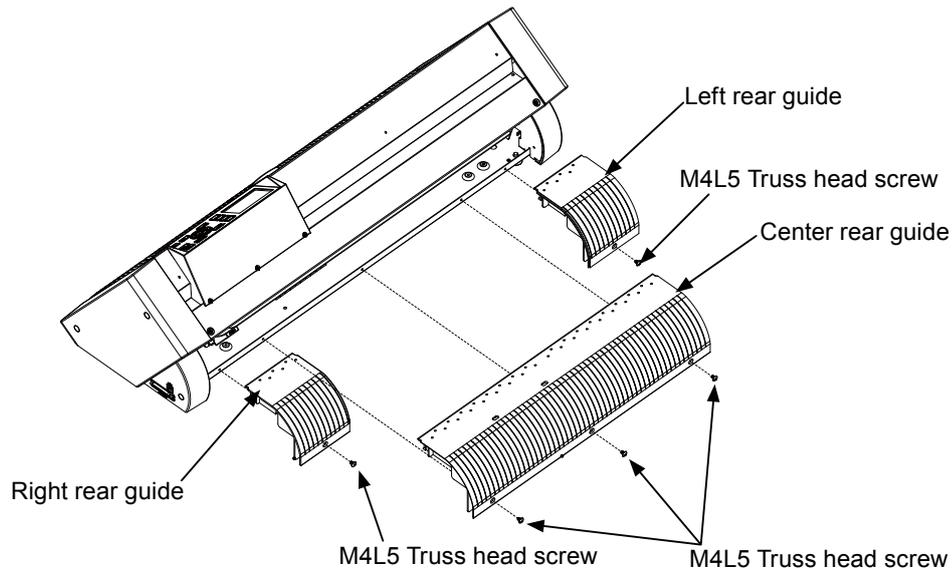
How to reinstall the front guide (CE6000-120)

- (1) Reattach the front guide 120 in the reverse order in which it was detached.

6.1.6 Rear Guide (CE6000-40/60)

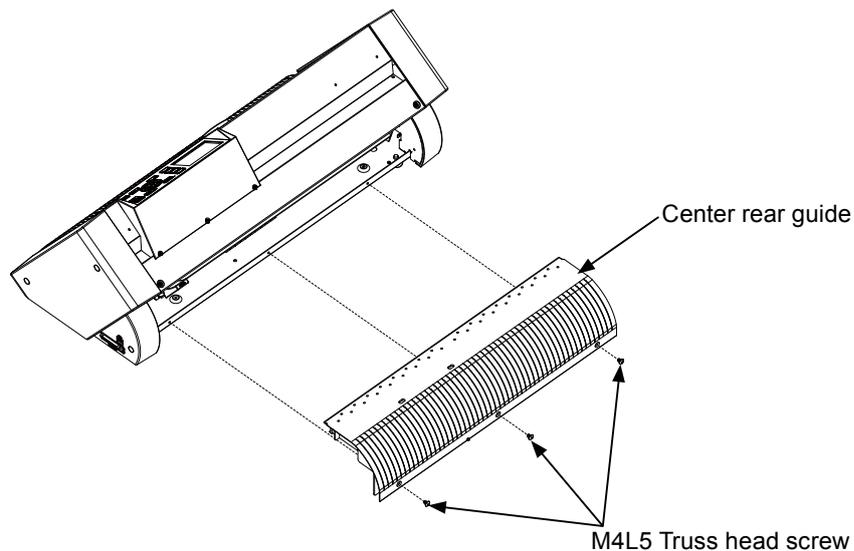
How to detach the rear guide (CE6000-60)

- (1) Remove the three M4L5 truss head screws holding the center rear guide and then detach the center rear guide.
- (2) Remove the M4L5 truss head screw holding the right rear guide, and then detach the right front guide.
- (3) Remove the M4L5 truss head screw holding the left rear guide, and then detach the left rear guide.



How to detach the rear guide (CE6000-40)

- (1) Remove the three M4L5 truss head screws holding the center rear guide and then detach the center rear guide.



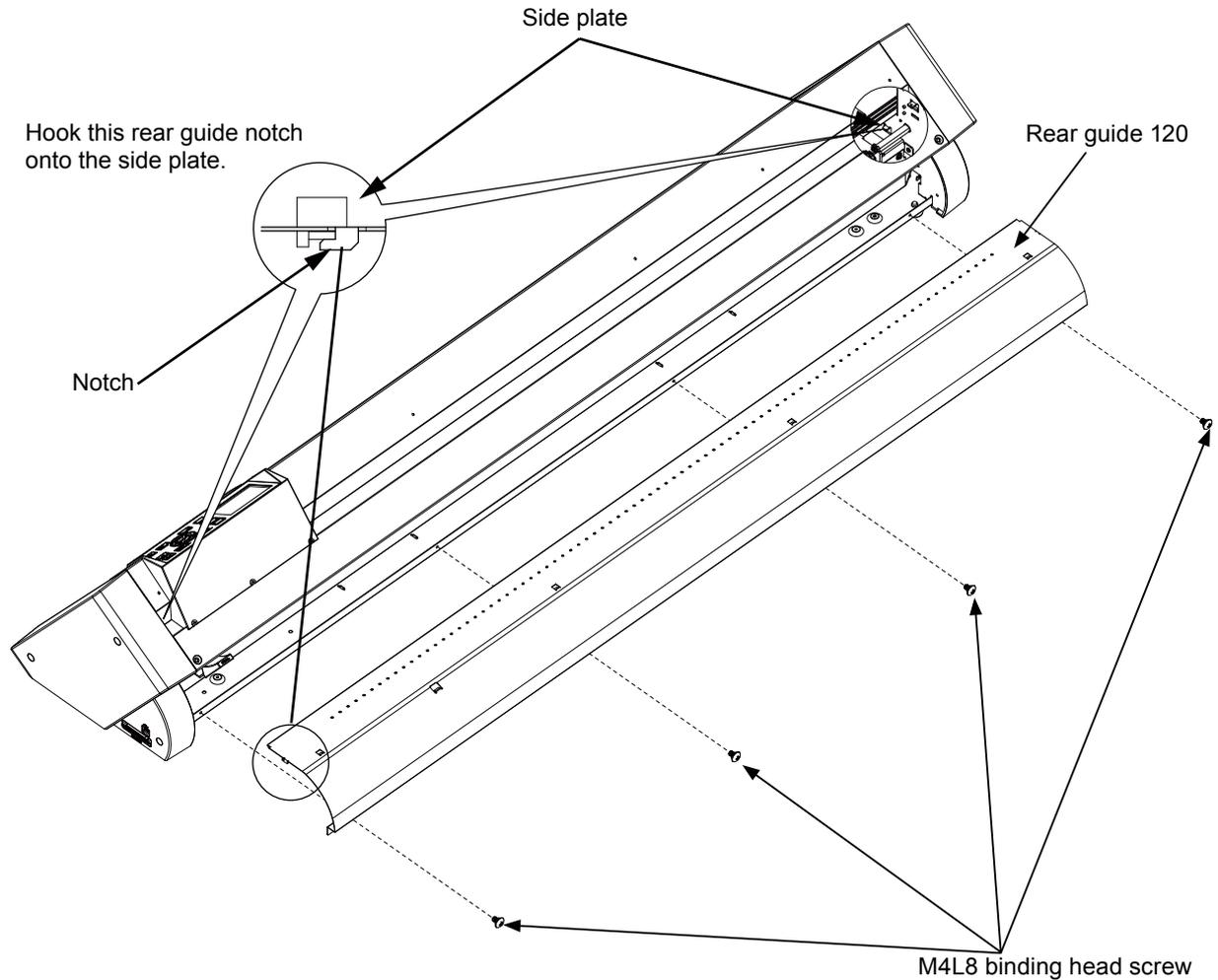
How to reinstall the rear guide

- (1) Reattach the rear guide in the reverse order in which it was detached.

6.1.7 Rear Guide (CE6000-120)

How to detach the rear guide (CE6000-120)

- (1) Remove the four M4L8 binding head screws holding the rear guide 120, and then detach the rear guide 120.



How to reinstall the rear guide

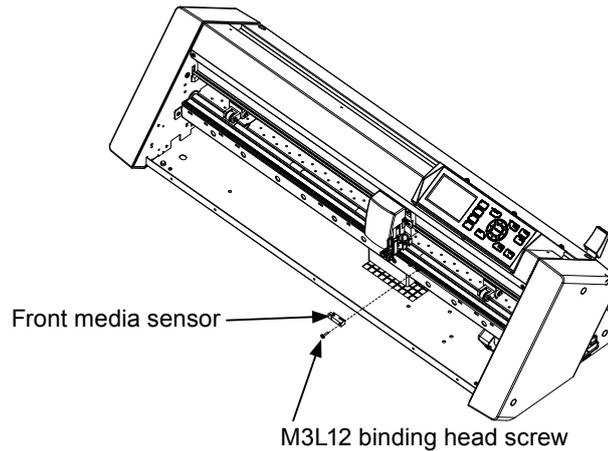
- (1) Reattach the rear guide in the reverse order in which it was detached.

6.2 Mechanical Parts

6.2.1 Front Media Sensor

How to detach the front media sensor

- (1) Detach the front guide (See section 6.1.4.) for the CE6000-40 and 60.
Detach the front guide (See section 6.1.5.) for the CE6000-120.
- (2) Remove the M3L12 binding head screw holding the front media sensor.
- (3) Disconnect the cable from the front media sensor.



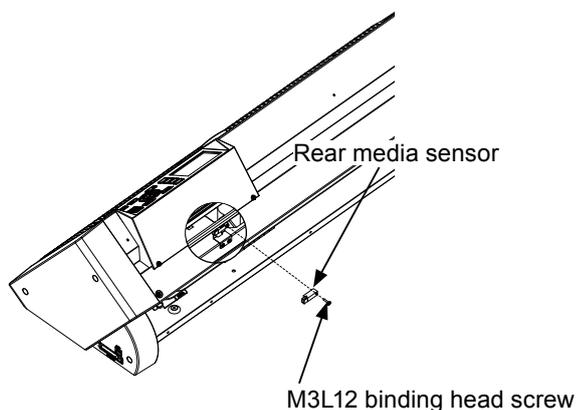
How to reinstall the front media sensor

- (1) Reattach the front media sensor in the reverse order in which it was detached.
- (2) Perform the RMS sensor and the paper sensor position adjustment when the media sensor is replaced (See section 7.11.).

6.2.2 Rear Media Sensor

How to detach the rear media sensor

- (1) Detach the rear guide (See section 6.1.6.) for the CE6000-40 and 60.
Detach the rear guide (See section 6.1.7.) for the CE6000-120.
- (2) Remove the M3L12 binding head screw holding the rear media sensor.
- (3) Disconnect the cable from the rear media sensor.



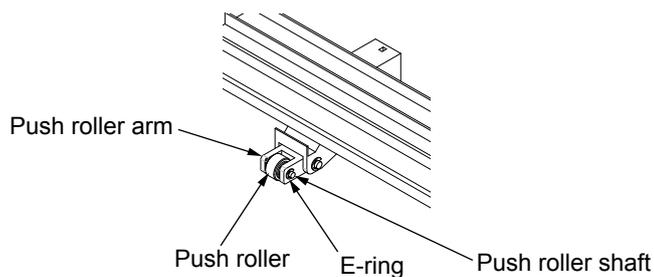
How to reinstall the rear media sensor

- (1) Reattach the rear media sensor in the reverse order in which it was detached.
- (2) Perform the RMS sensor and the paper sensor position adjustment when the media sensor is replaced (See section 7.11.).

6.2.3 Push Roller

How to detach the push roller

- (1) Detach the right side of the E-ring from the push roller shaft.



- (2) Detach the push roller shaft from the push roller arm from the left side.
- (3) Detach the push roller.

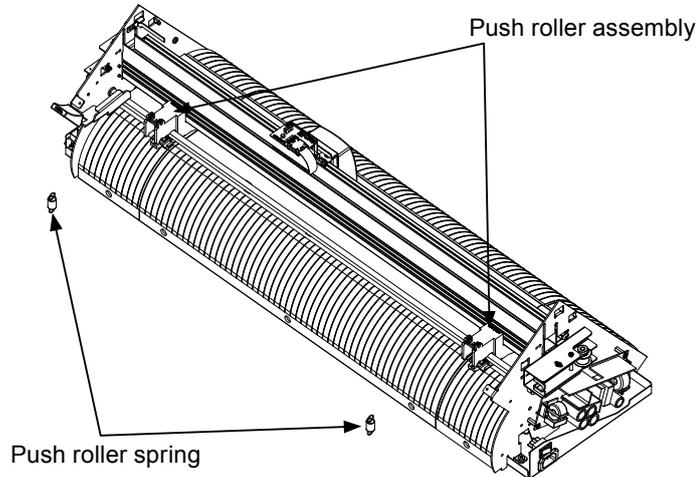
How to reinstall the push roller

- (1) Reattach the push roller in the reverse order in which it was detached.

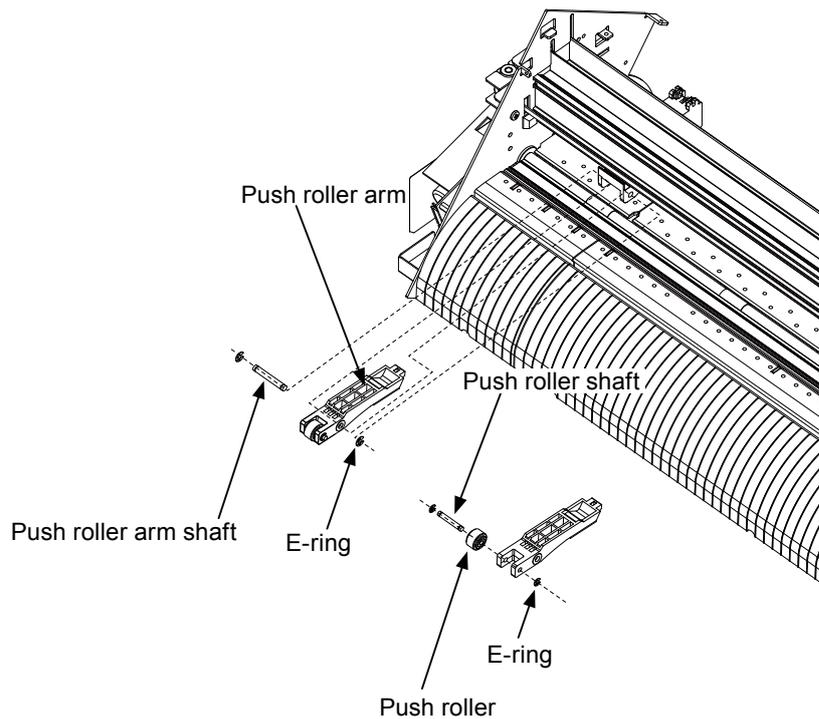
6.2.4 Push Roller Arm

How to detach the push roller arm

- (1) Detach the right side cover (See section 6.1.1.).
- (2) Detach the center cover (See section 6.1.3.).
- (3) Detach the push roller spring from the push roller assembly.



- (4) Detach the E-ring from the push roller arm shaft.



- (5) Detach the push roller arm shaft from the push roller arm, and then detach the push roller arm.

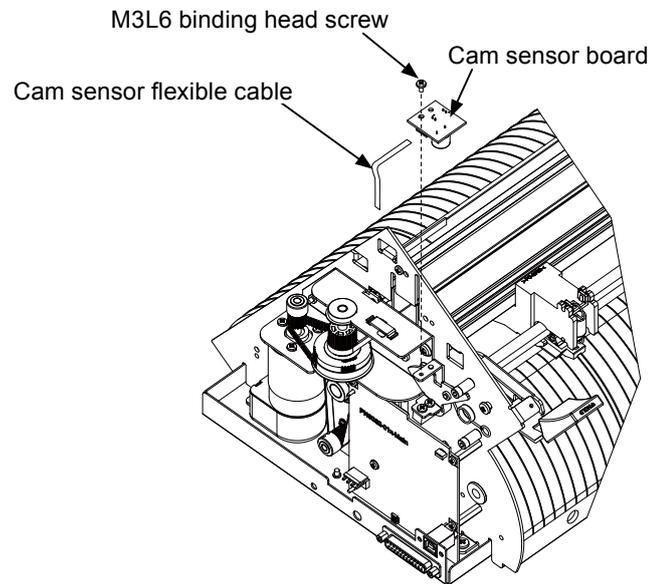
How to reinstall the push roller arm

- (1) Reattach the push roller arm in the reverse order in which it was detached.

6.2.5 Cam Sensor Board

How to detach the cam sensor board

- (1) Detach the right side cover (See section 6.1.1.).
- (2) Disconnect the flexible cable from the cam sensor board.
- (3) Remove the M3L6 binding head screw holding the cam sensor board, and then detach the cam sensor board.



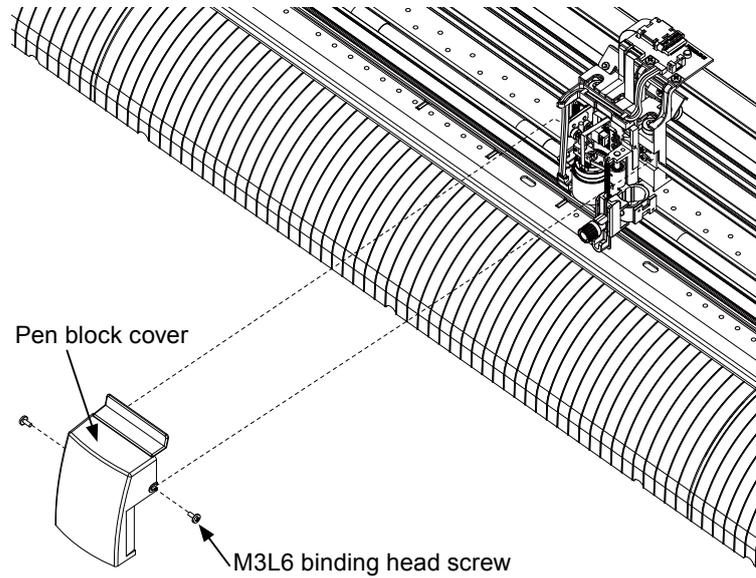
How to reinstall the cam sensor board

- (1) Reattach the cam sensor board in the reverse order in which it was detached.

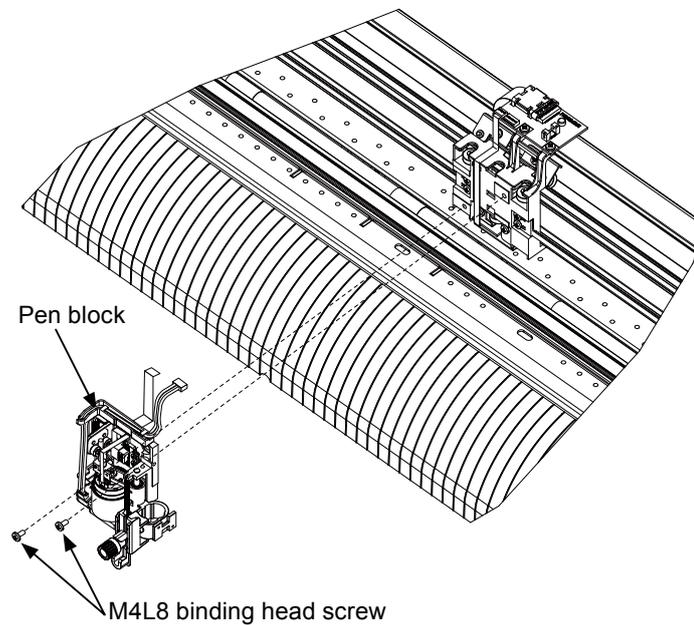
6.2.6 Pen Block

How to detach the pen block

- (1) Detach the center cover (See section 6.1.3.).
- (2) Loosen the M3L6 binding head screw holding the pen block cover.



- (3) Detach the pen block cover.
- (4) Disconnect the cable from connector J504 on the Y-relay board.
- (5) Disconnect the flexible cable from connector J505 on the Y-relay board.
- (6) Remove the two M4L8 binding head screws holding the pen block.

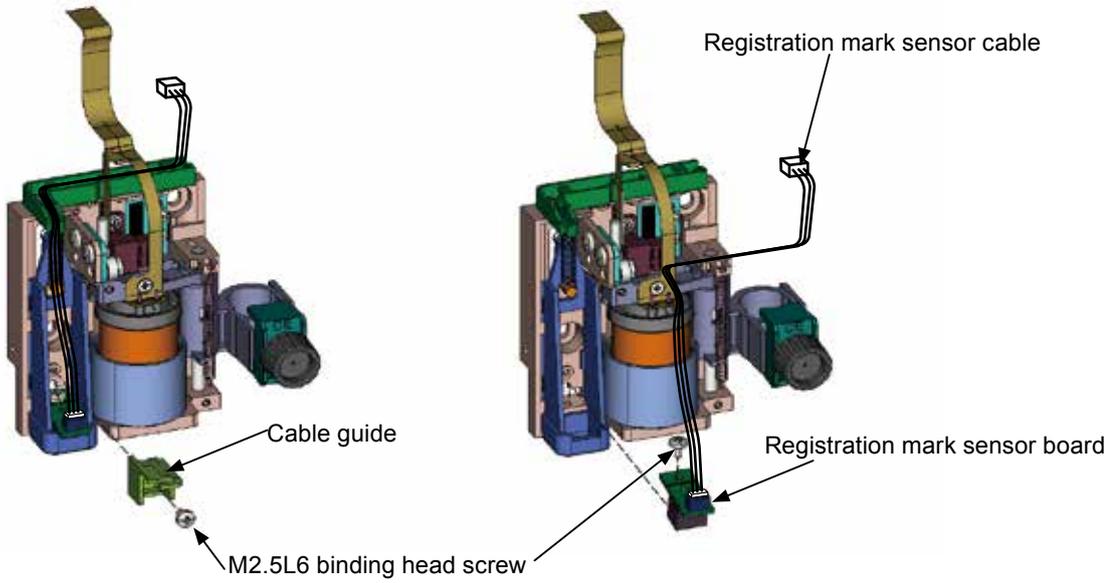


- (7) The registration mark sensor board and sensor cable are not including in the parts of pen block.

- (8) Detach the registration mark sensor board and the cable from the pen block. (The CE6000-120AP does not have registration mark sensor board, therefore you don't need to detach it from the pen block of CE6000-120AP.)

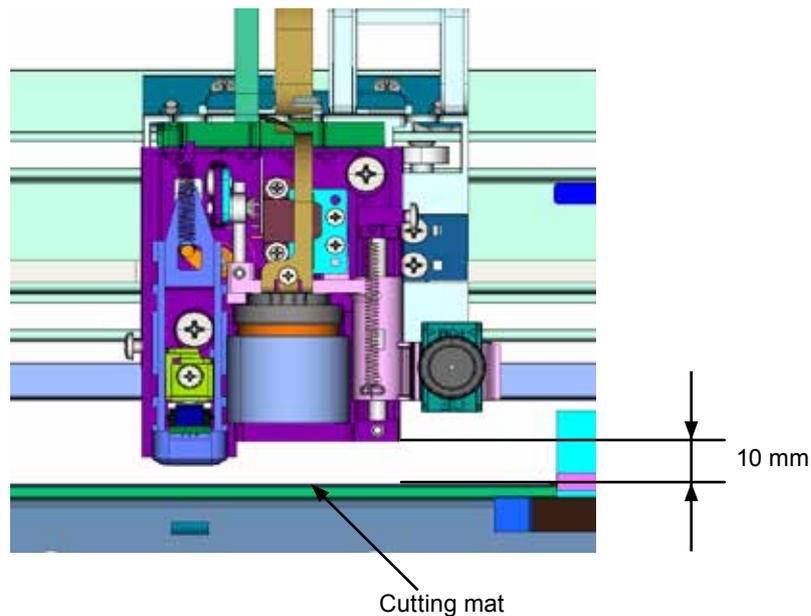
Remove the M2.5L6 binding head screw holding the cable guide, and then detach the cable guide.

Remove the M2.5L6 binding head screw holding the registration sensor board, and then detach the registration sensor board with the registration sensor cable.



How to reinstall the pen block

- (1) Install the registration mark sensor board to the pen block in the reverse order in which it was detached. (The CE6000-120AP does not have registration mark sensor board, therefore you don't need to install it to the pen block of CE6000-120AP.)
- (2) Mount the pen block to the Y slider.
- (3) Move the pen block to center of the Y bar and lower the Push roller when measuring the pen block height.
- (4) Fasten the two M4L6 binding head screws to attach the pen block so that there is a gap of 10 mm between the bottom of the pen block and the cutting mat. Perform a visual check to make sure that the pen block is not mounted at an angle.

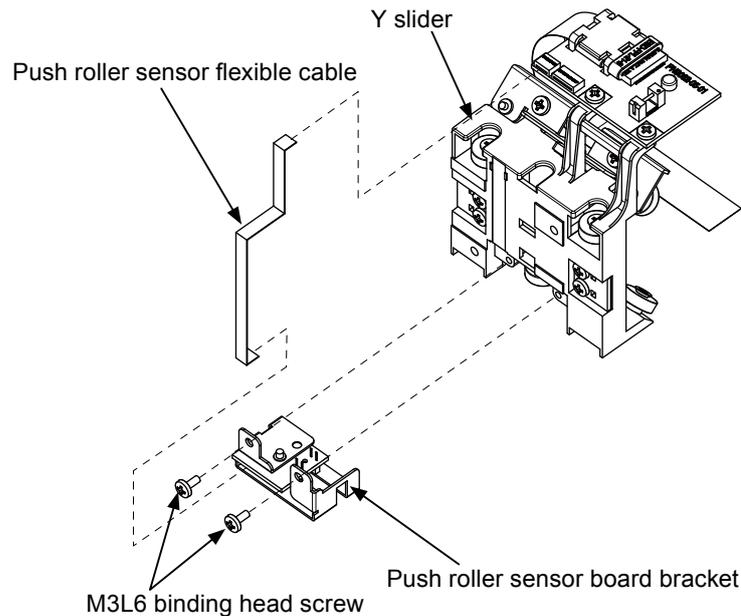


- (5) Reattach the other parts in the reverse order in which they were detached.
- (6) Perform the pen force adjustment (See section 7.7.).
- (7) Perform the registration mark sensor offset adjustment (see Section 7.9).

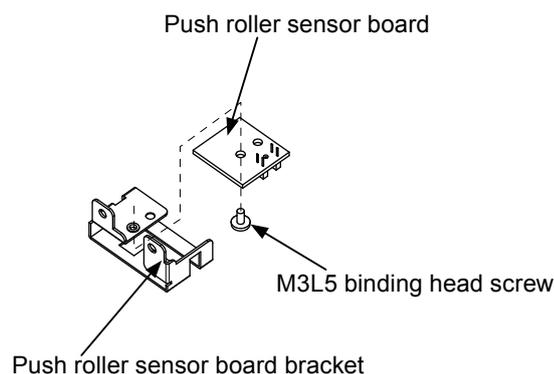
6.2.7 Push Roller Sensor

How to detach the push roller sensor

- (1) Detach the center cover (See section 6.1.3.).
- (2) Detach the pen block (See section 6.2.6.).
- (3) Disconnect the push roller sensor flexible cable from the Y-relay board.
- (4) Remove the push roller sensor flexible cable that is attached with double-sided adhesive tape to the Y-slider.
- (5) Remove the M3L6 binding head screw holding the push roller sensor bracket, and then detach the push roller sensor bracket from the Y slider.



- (6) Disconnect the push roller sensor flexible cable from the push roller sensor board.
- (7) Remove the M3L5 binding head screw holding the push roller sensor board, and then detach the push roller sensor board.



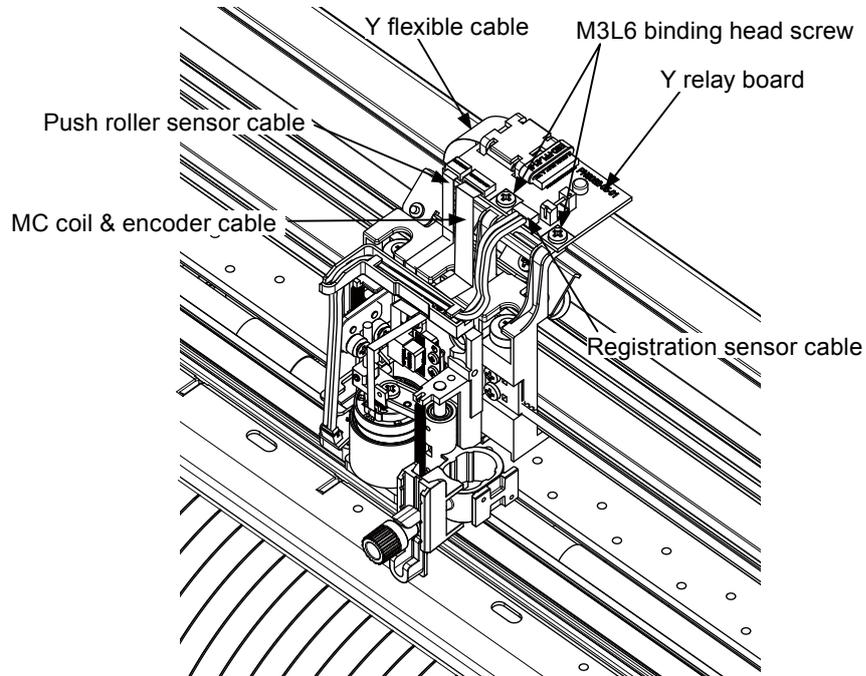
How to reinstall the push roller sensor

- (1) Reattach the Push roller sensor board in the reverse order in which it was detached.

6.2.8 Y-relay Board

How to detach the Y-relay board

- (1) Detach the center cover (See section 6.1.3.).
- (2) Detach the pen block cover (See section 6.2.6.).
- (3) Disconnect all the cables from the Y-relay board.



- (4) Remove the two M3L6 binding head screws attaching the Y-relay board.

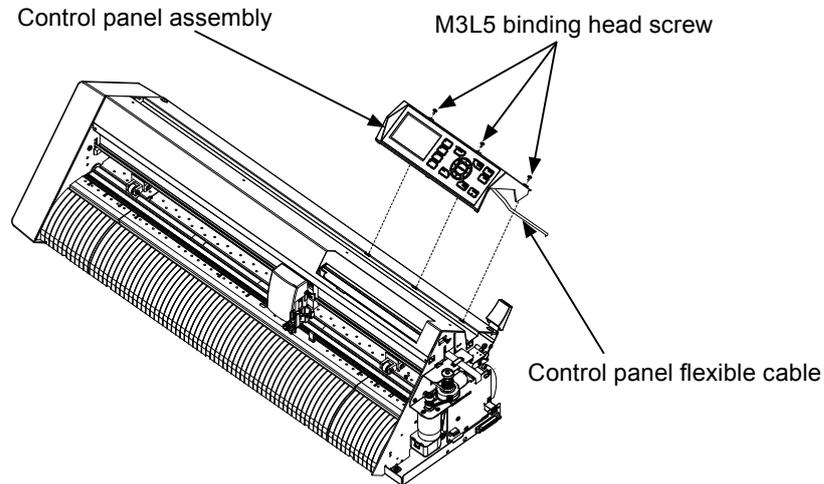
How to reinstall the Y-relay board

- (1) Reattach the Y-relay board in the reverse order in which it was detached.

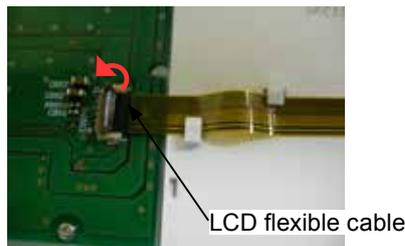
6.2.9 Control Panel Key Board

How to detach the control panel key board

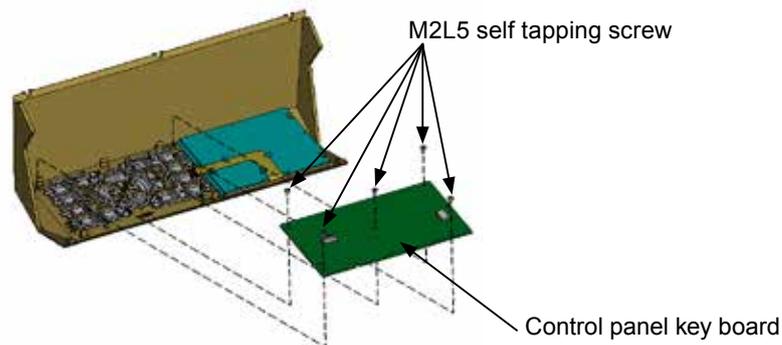
- (1) Detach the right side cover (See section 6.1.1.).
- (2) Disconnect the control panel flexible cable from the main board.
- (3) Remove the three M3L5 binding head screws holding the control panel assembly, and then detach the control panel assembly.



- (4) Disconnect the LCD flexible cable from the control panel key board.

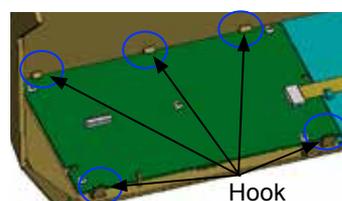


- (5) Remove the five M2L5 self-tapping screws holding the control panel key board.



- (6) Detach the control panel key board.

The five hooks are holding the control panel key board, release those hooks when the control panel key board is removed.



How to reinstall the control panel key board

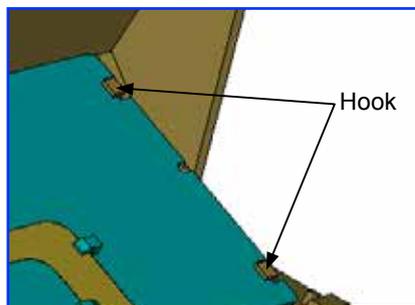
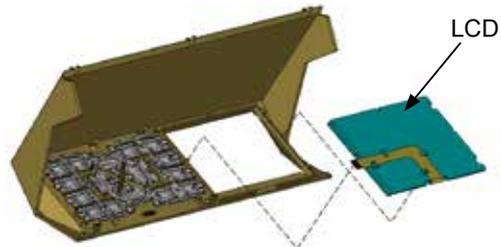
- (1) Reinstall the control panel key board in the reverse order in which it was detached.

6.2.10 LCD

How to detach the LCD

- (1) Detach the right side cover (See section 6.1.1.).
- (2) Detach the control panel key board (See section 6.2.9.).
- (3) Detach the LCD.

The two hooks are holding the LCD, release those hooks when the LCD is removed.



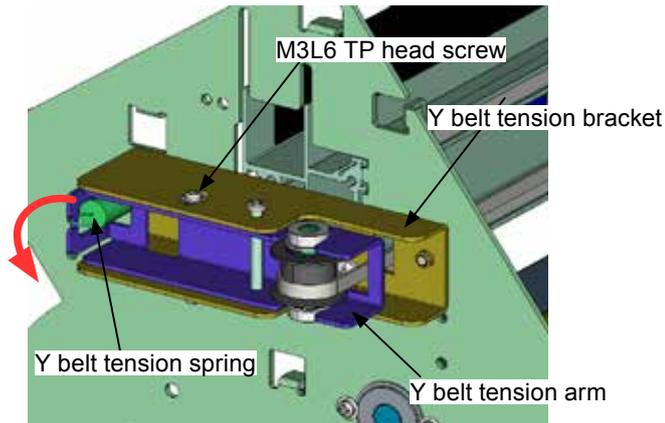
How to reinstall the LCD

- (1) Reattach the LCD in the reverse order in which it was detached.

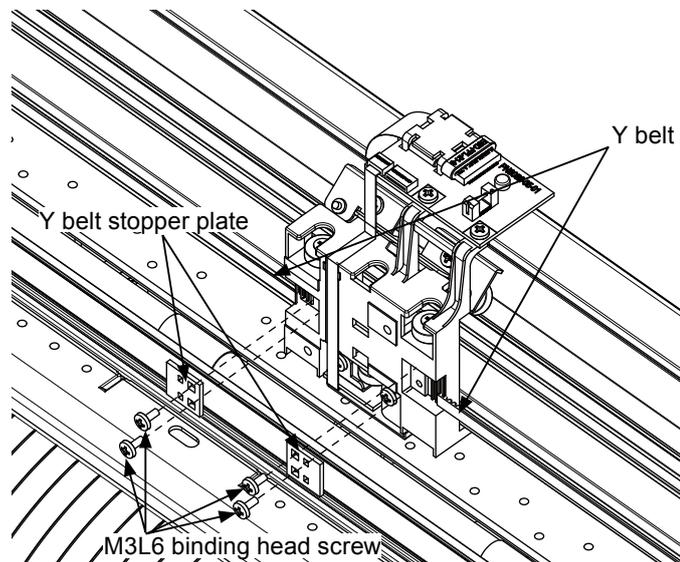
6.2.11 Y-belt

How to detach the Y-belt

- (1) Detach the right side cover (See section 6.1.1.).
- (2) Detach the left side cover (See section 6.1.2.).
- (3) Detach the center cover (See section 6.1.3.).
- (4) Detach the pen block (See section 6.2.6.).
- (5) Loosen the M3L6 TP head screw attaching the Y-tension arm.
- (6) Pull the Y-tension arm in the direction of the arrow as shown below, then detach the Y-tension spring hook from the left side plate.



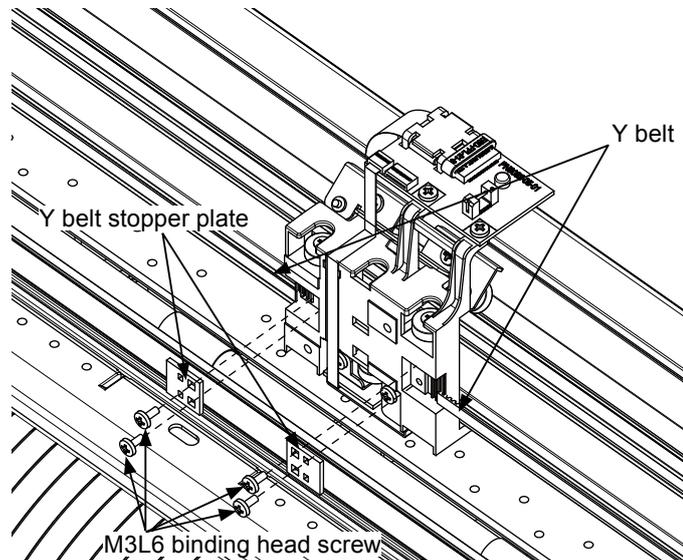
- (7) Tighten the M3L6 TP head screw attaching the Y-tension arm while pulling the Y-tension arm. The Y belt tension loosens with the Y-tension arm of pulling position.
- (8) Remove the four M3L6 binding head screws holding the right and left Y-belt stopper plates to the slider.



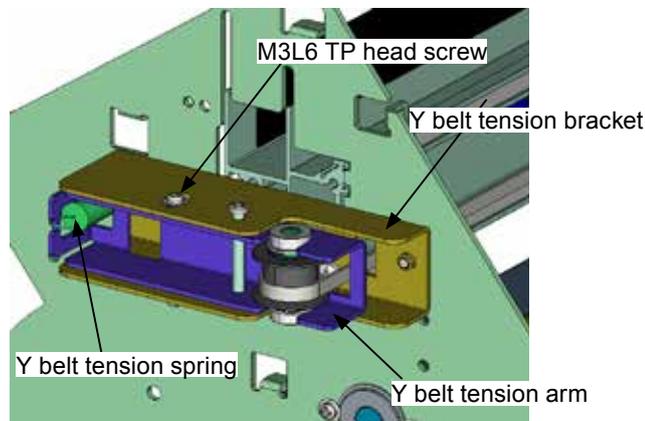
- (9) Detach the Y-belt.

How to reinstall the Y-belt

- (1) Hang the Y-belt on both sides of the pulley.
- (2) Attach both ends of the Y-belt to the Y-slider so that four notches of the Y-belt fit into the Y-slider, then attach with the Y-belt stopper plates removed in step (6) in the previous subsection.



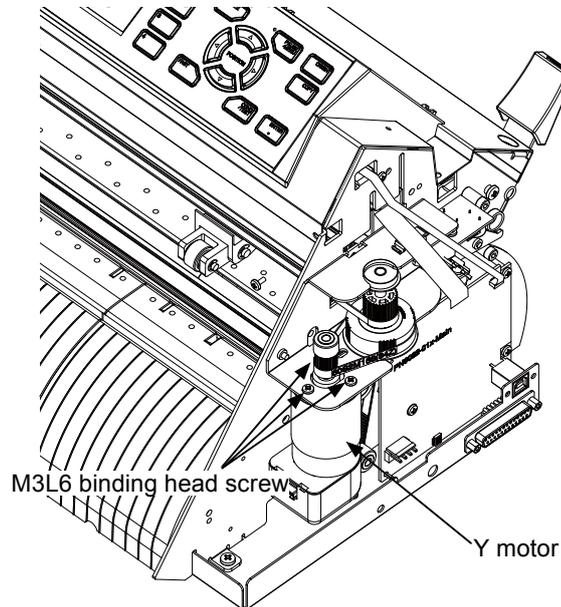
- (3) Reinstall the other parts in the reverse order in which they were detached.
- (4) The Y belt tension is automatically adjusted with the Y belt tension spring. Loosen the M3L6TP head screw fixing the position of the Y belt tension. Move the pen block to the far right side, and then tighten the M3L6TP head screw to fix the position of the Y belt tension.



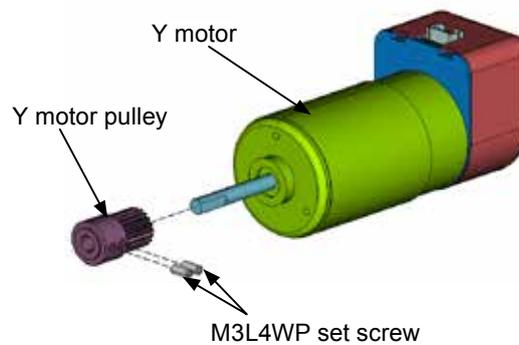
6.2.12 Y-motor

How to detach the Y-motor

- (1) Detach the right side cover (See section 6.1.1.).
- (2) Disconnect the Y-motor extension cable and the Y-motor encoder cable from the Y motor.
- (3) Remove the three M3L6 binding head screws holding the Y-motor.

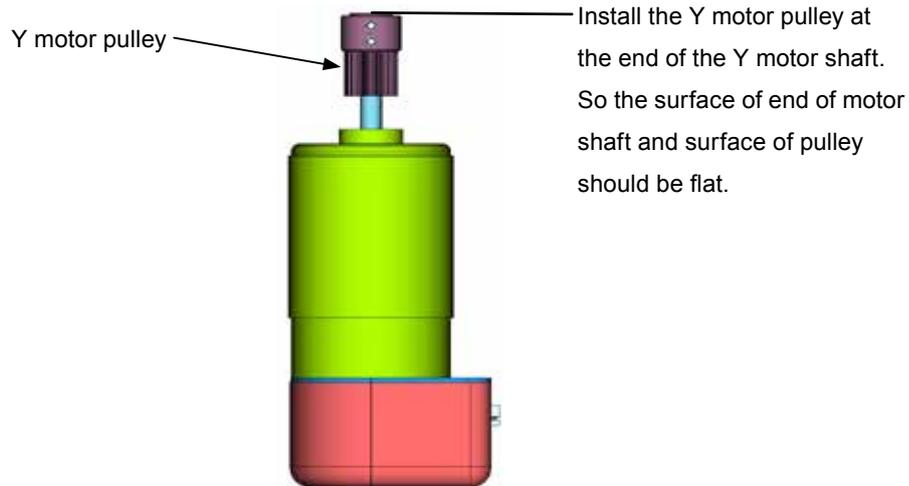


- (4) Detach the Y-motor.
- (5) Remove the two M3L4WP set screws holding the Y-motor pulley.
- (6) Detach the Y-motor pulley.



How to reinstall the Y motor

- (1) Install the Y motor pulley to the Y-motor.

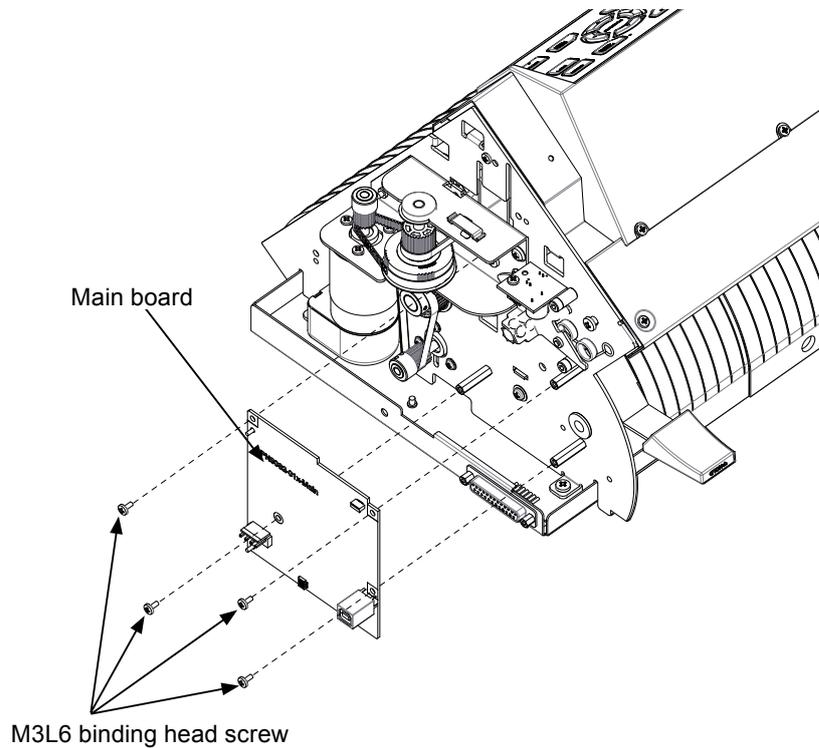


- (2) Tighten the two M3L4WP set screws holding the Y motor pulley.
- (3) Install the Y-motor to the Y-motor bracket.
- (4) Hang the Y drive belt on the Y motor pulley and the Y idler pulley.
- (5) Spread a suitable quantity of the Shinetu silicon grease G501 on the Y-motor pulley and Y-idler pulley.
- (6) Use the force gauge to pull the Y-drive motor pulley flange with a 1.8 kg to 2.0 kg force.
- (7) Tighten the three M3L6 binding head screws that hold the Y-motor.
- (8) Move the pen block and check the tension of the Y-drive belt.
- (9) Reinstall the other parts in the reverse order in which they were detached.

6.2.13 Main Board

How to detach the main board

- (1) Detach the right cover (See section 6.1.1.).



- (2) Disconnect all the cables and flexible cables from the main board.
- (3) Remove the four M3L6 binding head screws holding the main board.
- (4) Detach the main board.

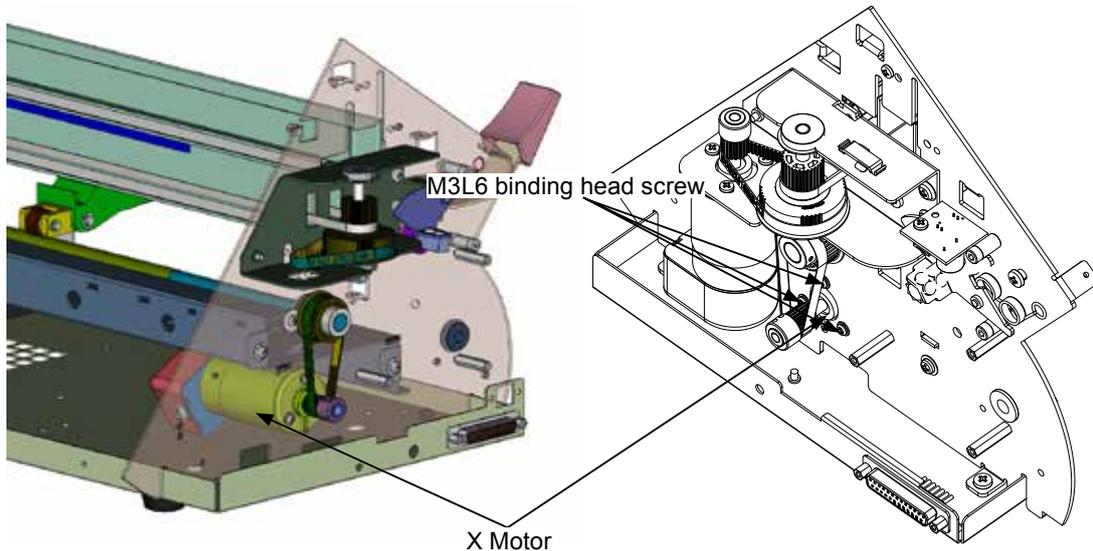
How to reinstall the main board

- (1) Reattach in the reverse order in which it was detached.
- (2) If you have "BOOT START ERROR" when you replaced the main board, Install the firmware for new main board (see Section 7.10).
- (3) Perform any adjustments required (See section 7.2.).

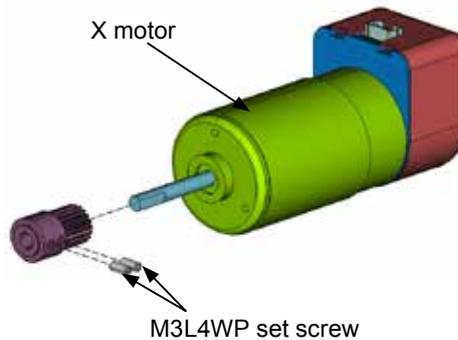
6.2.14 X-motor for the CE6000-40/60

How to detach the X-motor

- (1) Detach the right side cover (See section 6.1.1.).
- (2) Detach the front guide (See section 6.1.4.).
- (3) Detach the main board (See section 6.2.13.).
- (4) Remove the three M3L6 binding head screws holding the X-motor, and then detach the X-motor.

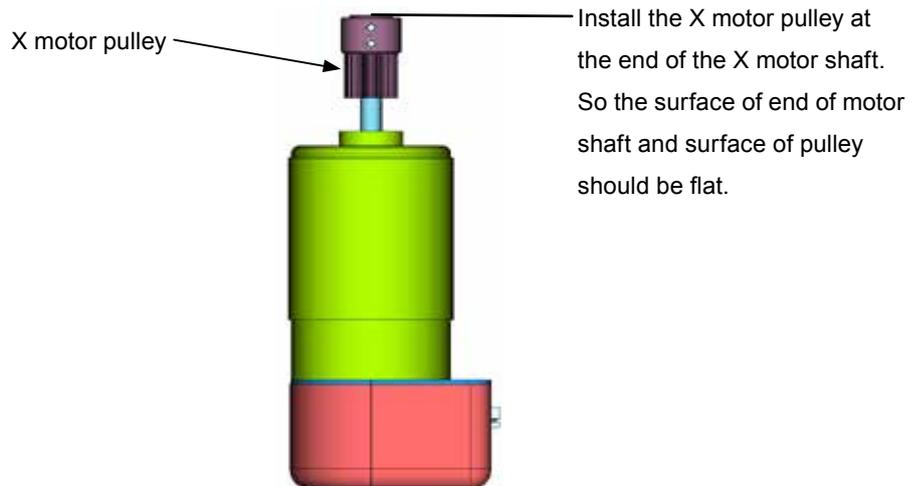


- (5) Disconnect the X-motor relay cable from the X motor.
- (6) Disconnect the X-Motor encoder cable from the X motor.
- (7) Loosen the two M3L4WP set screws holding the X-motor pulley, and then detach the X-motor pulley.

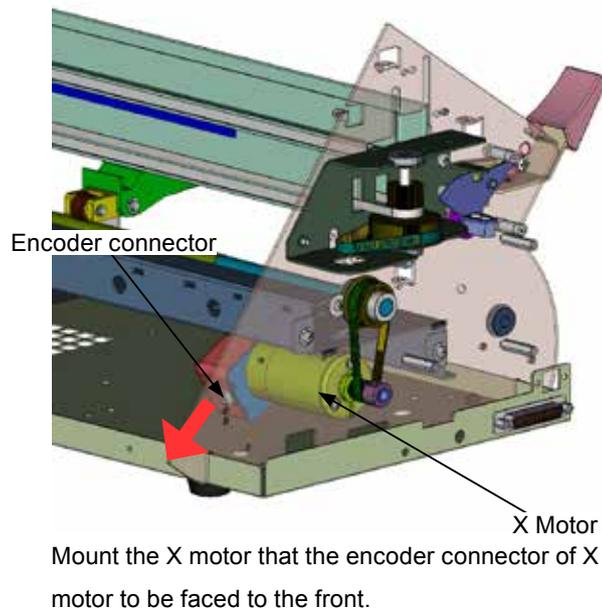


How to reinstall the X-motor

- (1) Install the X motor pulley to the X-motor.



- (2) Tighten the two M3L4WP set screws holding the X motor pulley.
- (3) Install the X-motor to the right side plate.

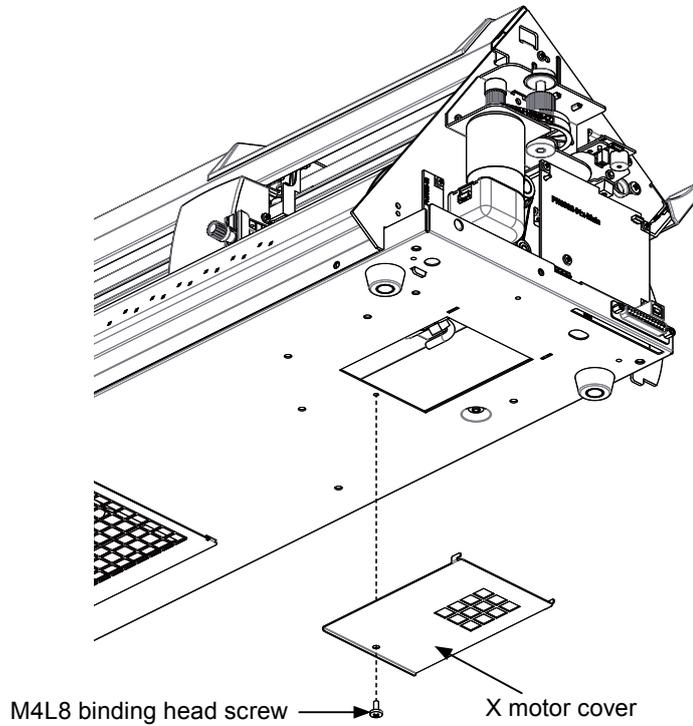


- (4) Hang the X drive belt on the X motor pulley and the X drive shaft pulley.
- (5) Spread a suitable quantity of the Shinetu silicon grease G501 on the X-motor pulley and X drive shaft pulley.
- (6) Use the force gauge to push down the X-drive motor pulley flange with a 1.8 kg to 2.0 kg force.
- (7) Tighten the three M3L6 binding head screws that hold the X-motor.
- (8) Turn the X drive shaft and check the tension of the X-drive belt.
- (9) Reinstall the other parts in the reverse order in which they were detached.

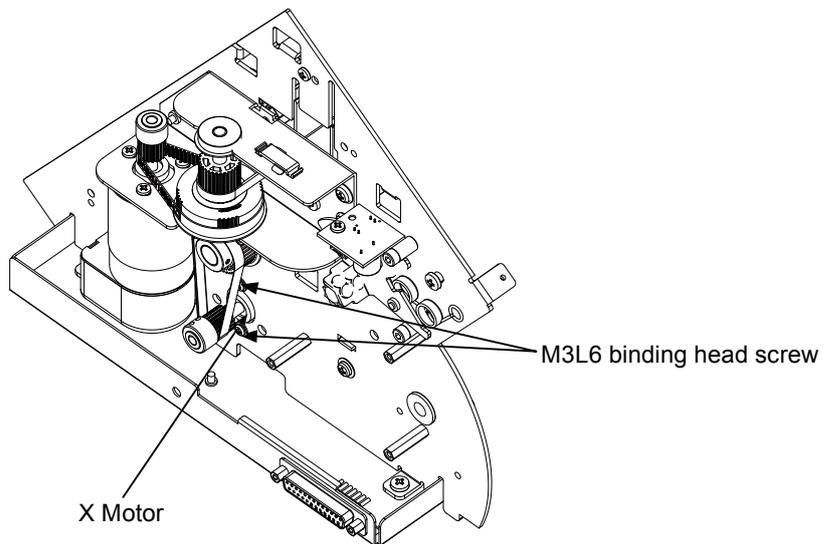
6.2.15 X-motor for the CE6000-120

How to detach the X-motor

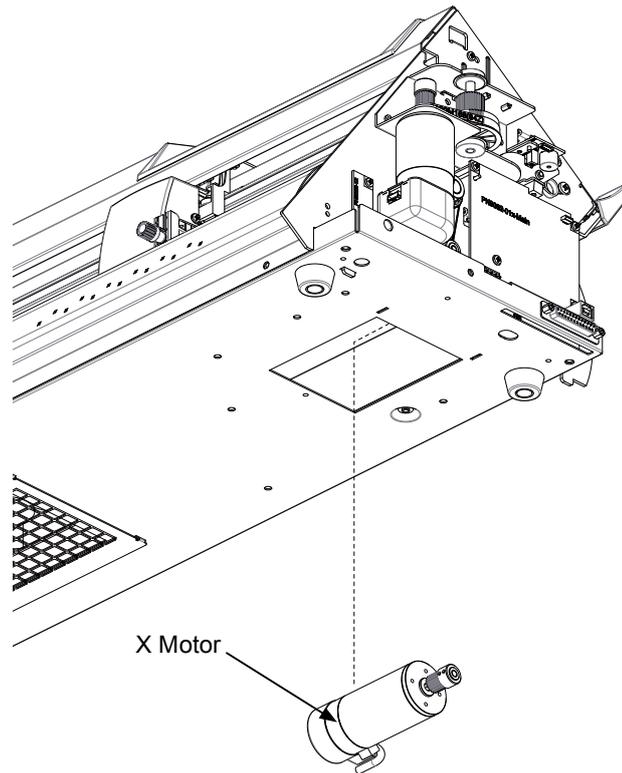
- (1) Detach the right side cover (See section 6.1.1.).
- (2) Remove the M4L8 binding head screws holding the X-motor cover, and then detach the X-motor cover.



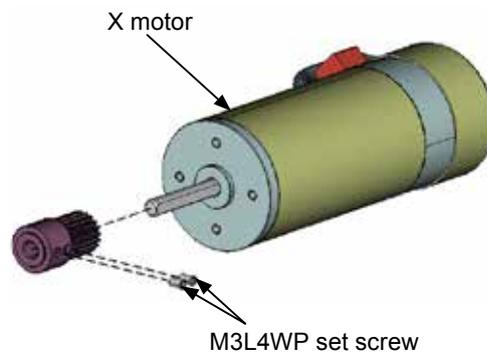
- (3) Detach the main board (See section 6.2.13.).
- (4) Remove the two M3L6 binding head screws holding the X-motor.



- (5) Detach the X-motor.

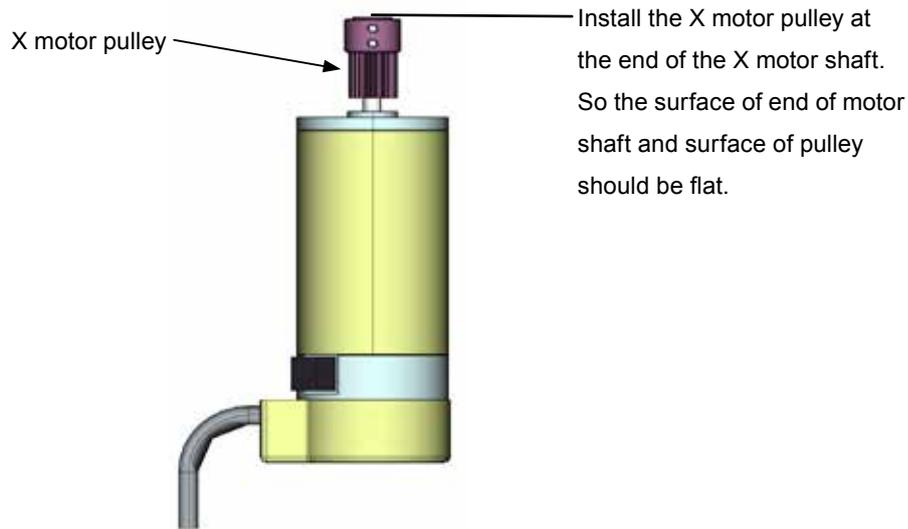


- (6) Disconnect the X-motor relay cable from the X motor.
- (7) Disconnect the X-Motor encoder cable from the X motor.
- (8) Loosen the two M3L4WP set screws holding the X-motor pulley, and then detach the X-motor pulley.

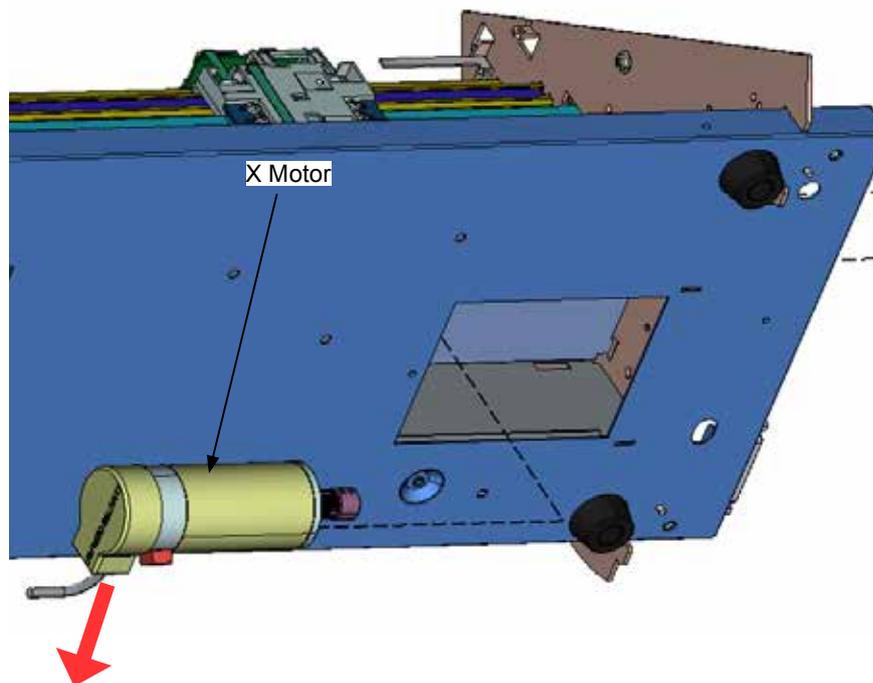


How to reinstall the X-motor

- (1) Install the X motor pulley to the X-motor.



- (2) Tighten the two M3L4WP set screws holding the X motor pulley.
- (3) Connect the X motor cable and the X motor encoder cable to the X motor.
- (4) Install the X-motor to the right side plate.



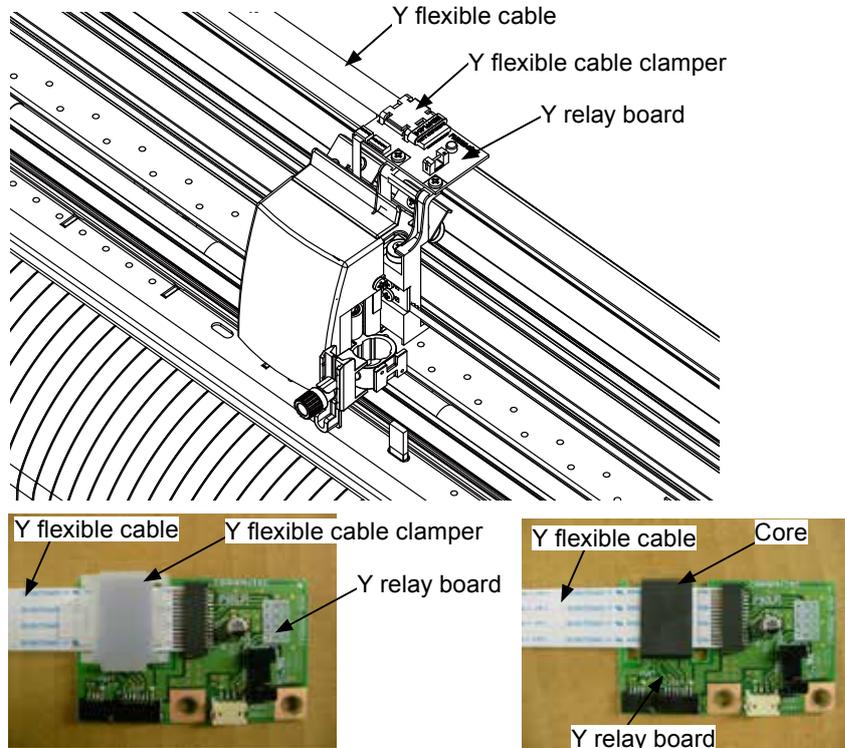
Mount the X motor that the encoder connector of X motor to be faced to the rear.

- (5) Hang the X drive belt on the X motor pulley and the X drive shaft pulley.
- (6) Spread a suitable quantity of the Shinetu silicon grease G501 on the X motor pulley and X drive shaft pulley.
- (7) Use the force gauge to push down the X-drive motor pulley flange with a 1.8 kg to 2.0 kg force.
- (8) Tighten the two M3L6 binding head screws that hold the X-motor.
- (9) Turn the X drive shaft and check the tension of the X-drive belt.
- (10) Reinstall the other parts in the reverse order in which they were detached.

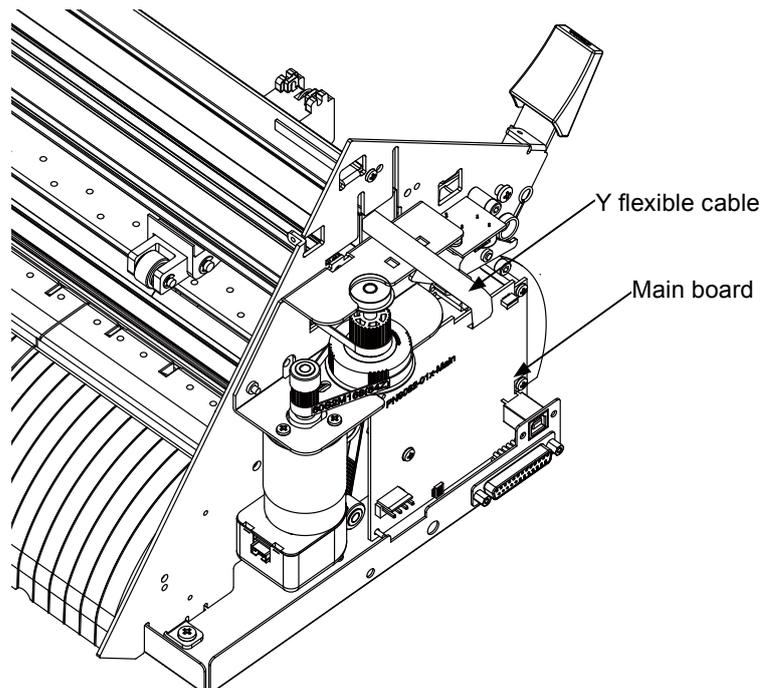
6.2.16 Y-flexible Cable

How to detach the Y-Flexible cable

- (1) Detach the right side cover (See section 6.1.1.).
- (2) Detach the center cover (See section 6.1.3.).
- (3) Remove the flexible cable clamber holding the Y-flexible cable and the core on the Y-relay board.



- (4) Detach the core attached with double-sided adhesive tape to the Y-relay board.
- (5) Disconnect the Y-flexible cable from connector on the Y-relay board.
- (6) Disconnect the Y-flexible cable from connector on the main board.



- (7) Remove the Y-flexible cable attached with double-sided adhesive tape to the Y-rail.

How to reinstall the Y-flexible cable

- (1) Clean the surface of the Y-rail with alcohol to remove any glue from the double-sided adhesive tape that was attached the Y-flexible cable.
- (2) Affix two pieces of double-sided adhesive tape to the flexible cable guide of the Y-rail. The first piece of tape should start at the right end of the Y-rail. The position of the second piece of tape depends on the model.

Size of the double-sided adhesive tape:

10 mm wide, 20 mm long for the first piece of tape (Nitto #5000NS)

10 mm wide, 50 mm long for the second piece of tape (Nitto #5000NS)

Position of the second piece of tape:

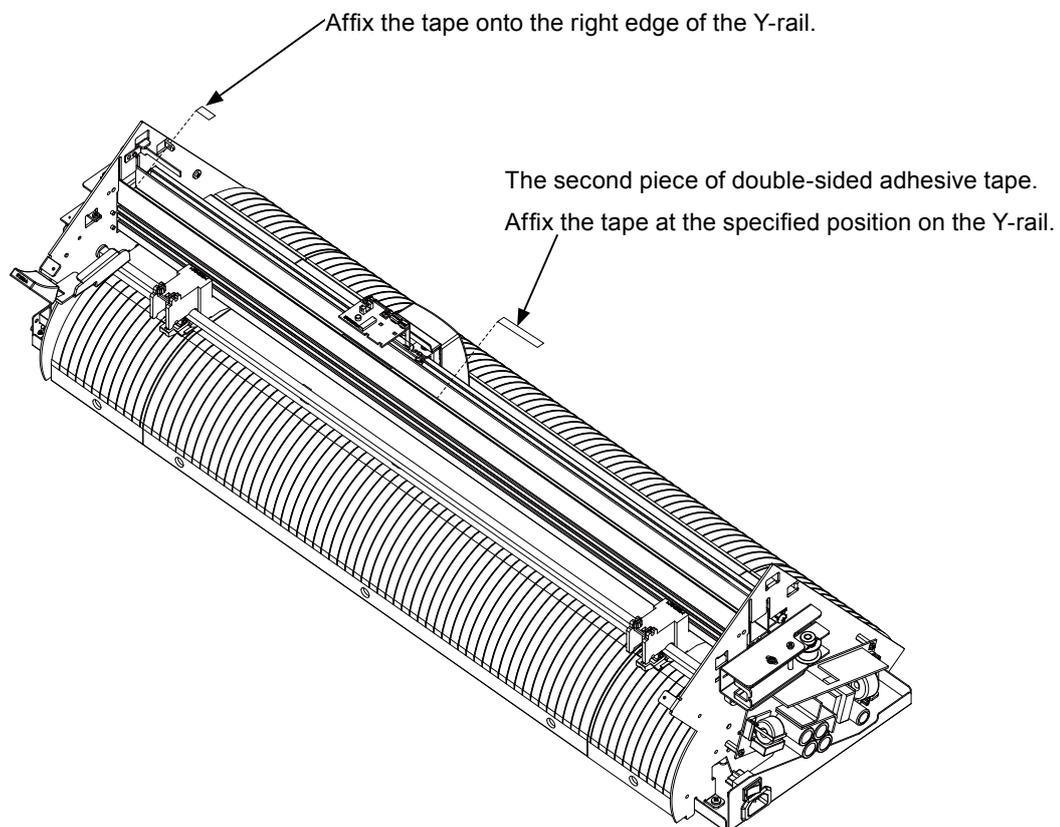
CE6000-40: 240 mm from the right end of the Y-rail

CE6000-60: 330 mm from the right end of the Y-rail

CE6000-120/AMO/AP: 650 mm from the right end of the Y-rail

The first piece of double-sided adhesive tape.

Affix the tape onto the right edge of the Y-rail.



- (3) Insert the Y-flexible cable into the core and connect the Y-flexible cable onto the Y relay board.
- (4) Attach the core to the Y-relay board using double-sided adhesive tape.
- (5) Attach the flexible cable clumper to hold the Y-flexible cable and the core on the Y-relay board.
- (6) Move the pen block to the left end.

- (7) Fit the Y-flexible cable into the Y-rail as shown below. The Y-flexible cable shouldn't touch the left side plate. Allow a 10 mm space between the left end of the Y-flexible cable and the left side plate.

10 mm Allow a 10 mm space between the left end of the Y-flexible cable and the left side plate.

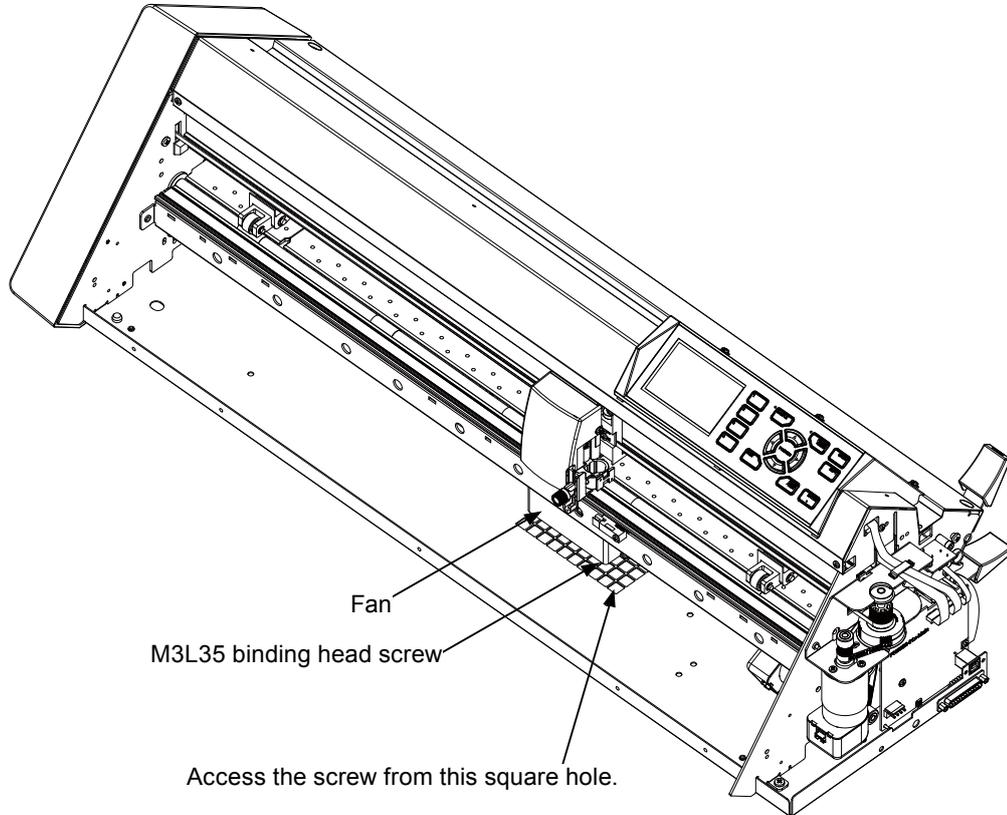


- (8) Secure the Y-flexible cable onto the flexible cable guide of the Y-rail using double-sided adhesive tape.
- (9) Reattach the other parts in the reverse order in which they were detached.

6.2.17 Vacuum Fan for the CE6000-40/60

How to detach the vacuum fan

- (1) Detach the right cover (See section 6.1.1.).
- (2) Detach the front guide (See section 6.1.4.).



- (3) Remove the harness tie-wrap holding the vacuum fan cable.
- (4) Disconnect the vacuum fan cable from the connector on the main board.
- (5) Use a long screwdriver to remove the two M3L35 binding head screws holding the vacuum fan from the holes of the bottom chassis.
- (6) Detach the vacuum fan from the main unit.

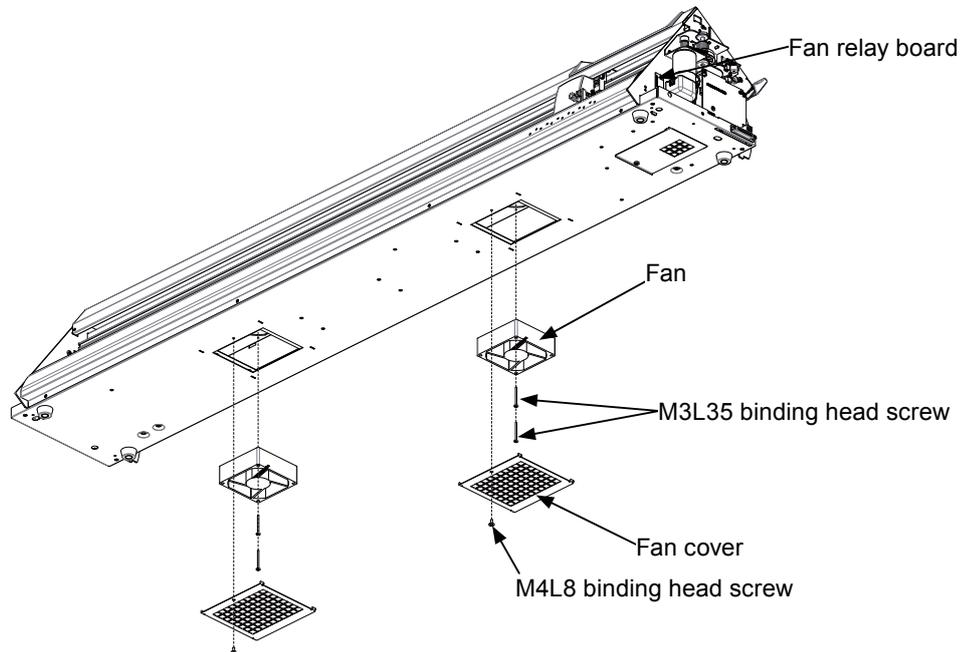
How to reinstall the vacuum fan

- (1) Reattach in the reverse order in which it was detached.

6.2.18 Vacuum Fan for the CE6000-120

How to detach the vacuum fan

- (1) Detach the right cover (See section 6.1.1.).
- (2) Detach the front guide (See section 6.1.5.).



- (3) Remove the harness tie-wrap holding the vacuum fan cables.
- (4) Disconnect the vacuum fan cable from the connector on the fan relay board. (Right side fan)
Disconnect the vacuum fan cable from the fan extension cable. (Left side fan)
- (5) Remove the M4L8 binding screw holding the fan cover, and then detach the fan cover.
- (6) Use a long screwdriver to remove the two M3L35 binding head screws holding the vacuum fan from the main frame.
- (7) Detach the vacuum fan from the main frame.

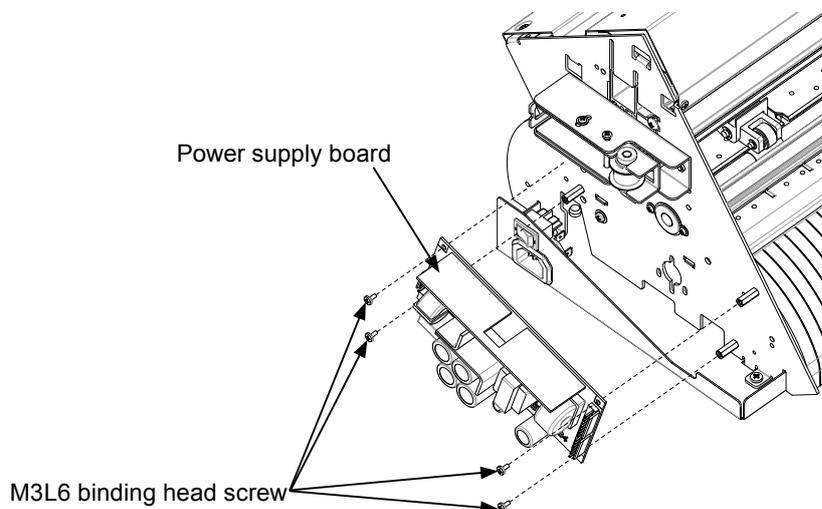
How to reinstall the vacuum fan

- (1) Reattach in the reverse order in which it was detached.

6.2.19 Power Supply

How to detach the power supply

- (1) Detach the left side cover (See section 6.1.2.).
- (2) Disconnect the cables from the power supply board.



- (3) Remove the four M3L6 binding head screws holding the power supply board.
- (4) Detach the power supply from the chassis.

How to reinstall the power supply

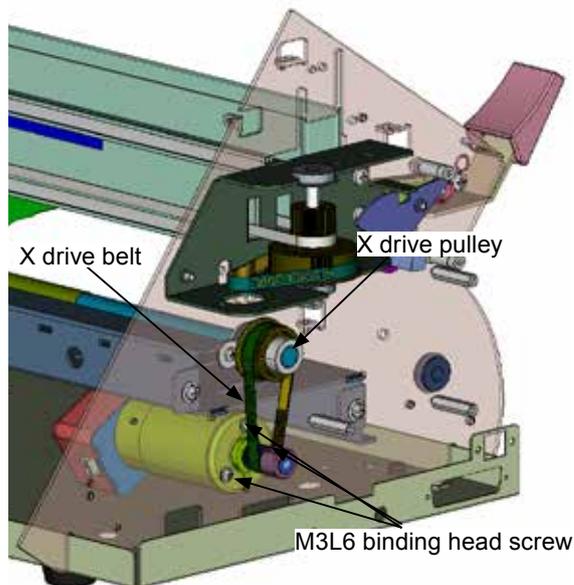
- (1) Reattach in the reverse order in which it was detached.

6.2.20 Drive Roller shaft

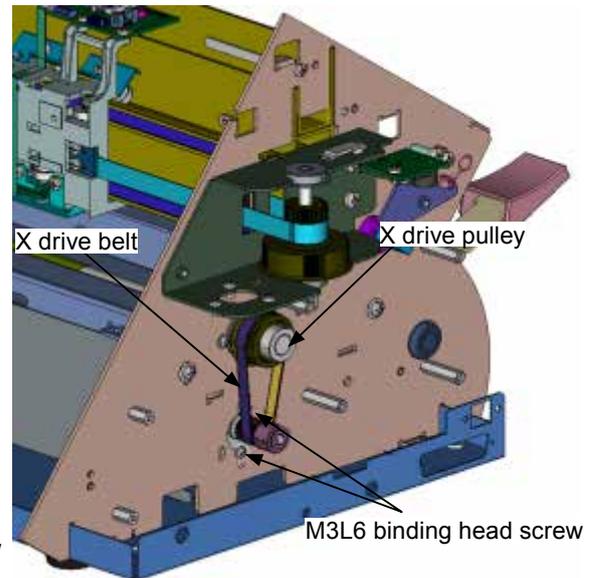
How to detach the drive roller

- (1) Detach the right side cover (See section 6.1.1.).
- (2) Detach the left side cover (See section 6.1.2.).
- (3) Detach the rear guide (See section 6.1.6 for the CE6000-40/60, See section 6.1.7 for the CE6000-120.).
- (4) Detach the main board (See section 6.2.13.).
- (5) Detach the Y motor (See section 6.2.12.).
- (6) Loosen the tree M3L6 binding head screws holding the X-motor of the CE6000-40/60.
Loosen the two M3L6 binding head screws holding the X-motor of the CE6000-120.

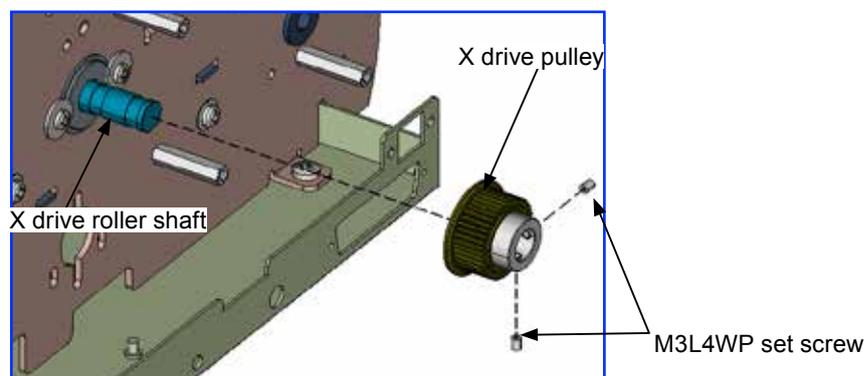
CE6000-40/60



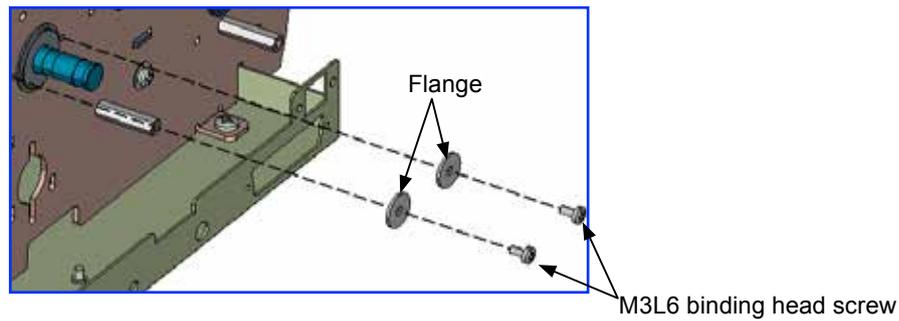
CE6000-120



- (7) Push up the X-motor to remove the X drive belt from the X motor pulley and the X drive roller pulley.
- (8) Loosen the two M3L4WP set screws holding the X-drive pulley, and then detach the X-drive pulley from the drive shaft.



- (9) Remove the two M3L6 binding screws holding the X-drive roller bearing with a bearing stopper flange.



- (10) Remove the bearing from the X drive roller shaft, and then slide out the X-drive roller from the unit.

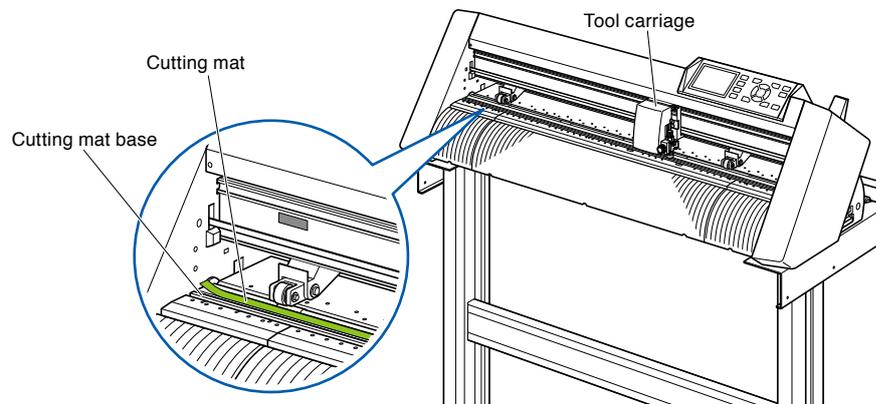
How to reinstall the drive roller

- (1) Reattach in the reverse order in which it was detached.
- (2) Spread a suitable quantity of Loctite 222 on the M3L4WP set screw holding the X-drive pulley.
- (3) Use the force gauge to pull the X-drive motor pulley flange with a 1.8 kg to 2.0 kg force.
- (4) Tighten the mounting screws that hold the X-motor.
- (5) Spread a suitable quantity of the Shinetu silicon grease G501 on the X-motor pulley.
- (6) Move the X-drive pulley and check the tension of the X-drive belt.
- (7) Reattach the other parts in the reverse order in which they were detached.

6.2.21 Cutting Mat

How to detach the cutting mat

- (1) Peel off the cutting mat from the cutting mat base.



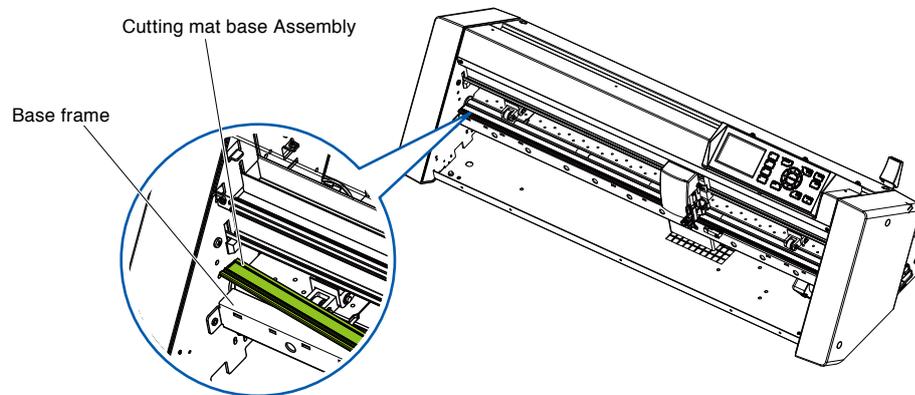
How to reinstall the cutting mat

- (1) Clean the surface of the cutting base with alcohol where the cutting mat was attached.
- (2) Attach the new cutting mat to the cutting mat base.

6.2.22 Cutting Mat Base Assembly

How to detach the cutting mat base assembly

- (1) Detach the front guide (See section 6.1.4.) for the CE6000-40 and 60.
Detach the front guide (See section 6.1.5.) for the CE6000-120.
- (2) Peel off the cutting mat base from the base frame.



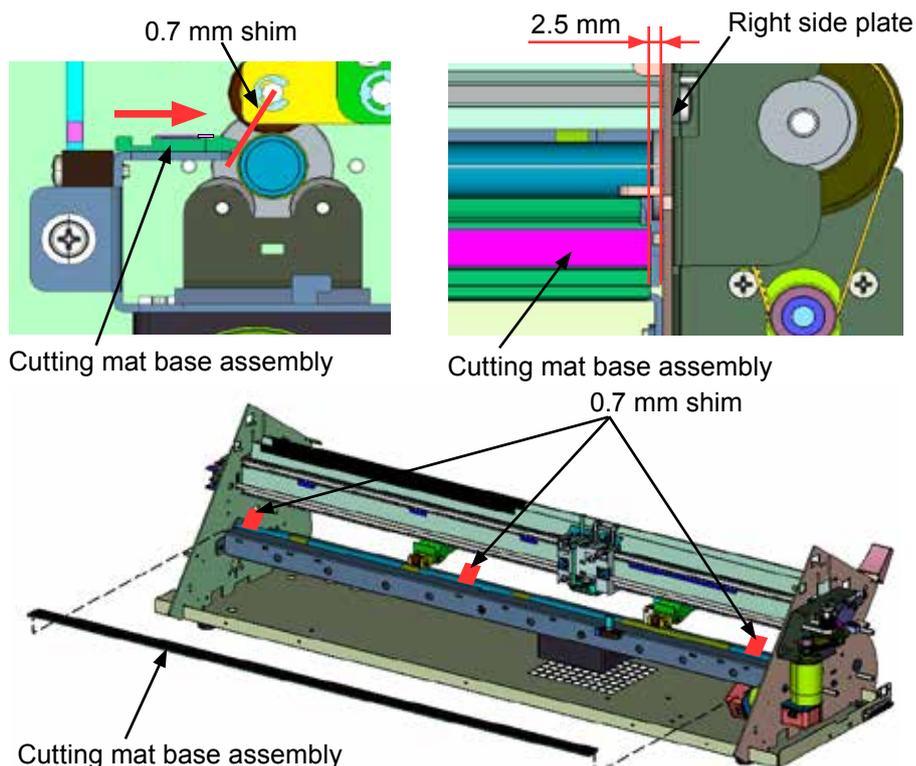
How to reinstall the cutting mat base assembly

- (1) Clean the surface of the base frame with alcohol where the cutting mat base assembly was attached.
- (2) Attach the new cutting mat assembly to the base frame to the following position.
- (3) Insert the three sheets of 0.7 mm shim to the left, the center, and the right between the drive roller and the base frame.

And then position the cutting mat base assembly to be touched to the three shims.

And position the right edge of cutting mat base assembly at the 2.5 mm from the right side plate.

Removes the protection sheets from the cutting mat base assembly and then puts the cutting mat base assembly to the location above.



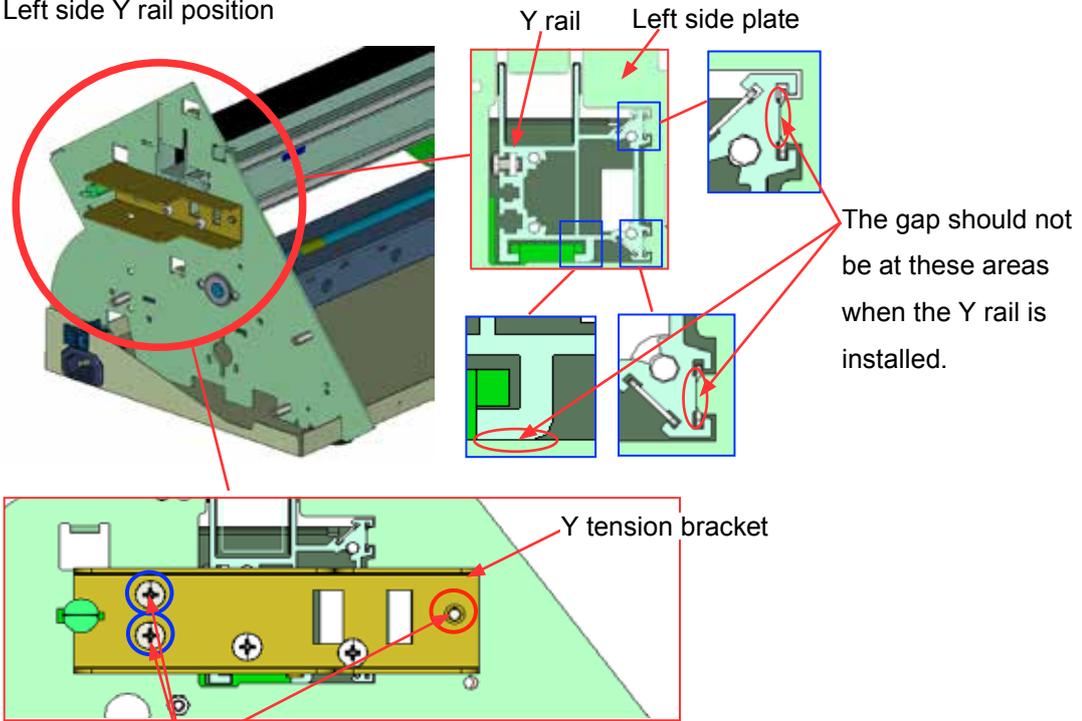
6.2.23 How to Confirm the Y rail mounting position

Confirm the Y rail mounting position if you are installing the Y rail to the main unit.

Y-rail mounting position

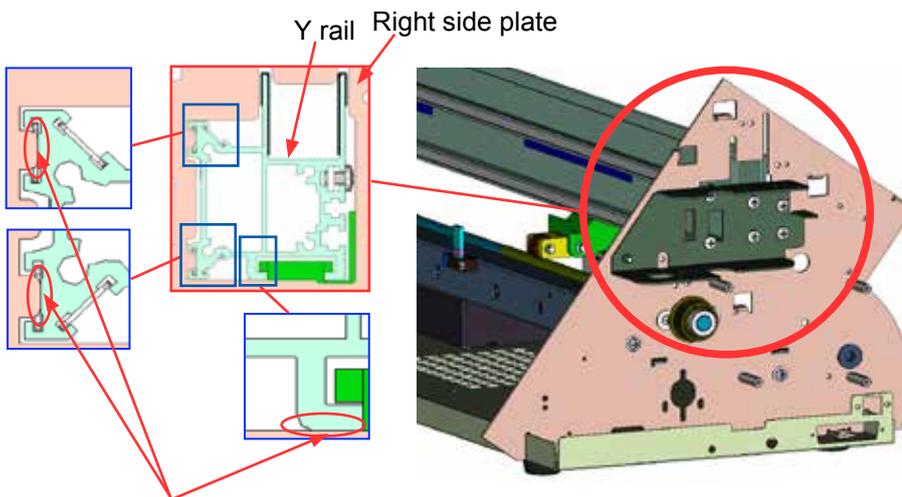
Mount the Y-rail as shown in the picture below when the Y-rail is installing.

Left side Y rail position



The left side of Y rail is fixing by these three screws and the Y tension bracket.

Right side Y rail position



The gap should not be at these areas when the Y rail is installed.

The right side of Y rail is fixing by these three screws and the Y motor bracket.

The bottom part of Y-rail has to touch to the side panel plate and the front part of Y-rail has to touch to the side panel plate when installing the Y-rail.

The push roller will not become to the center of the drive roller if the front part of Y-rail does not touch to the side panel plate.

And the height from the push roller and the drive roller will not become same height at right and left if the bottom part of Y-rail does not touch to the side panel plate.

How to adjust Y-rail mounting position

- (1) The Y rail is holding by the Y motor bracket and the Y idler pulley bracket.
- (2) Lift up the push rollers.
- (3) Loosen the screws holding the Y motor bracket and the Y tension bracket, and then adjust the position for the Y rail.
- (4) Tighten the screws after the Y rail position is adjusted.

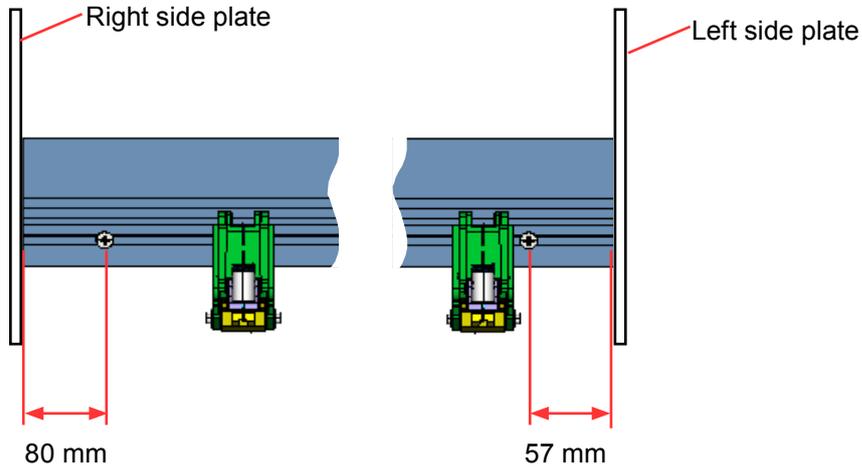
6.2.24 Regarding the Push Roller position limit Screws

The movable range of left side and the right side push rollers are limited by the two screws.

Tighten the two screws at correct position as shown in the picture below when you had removed or loosen those screws.

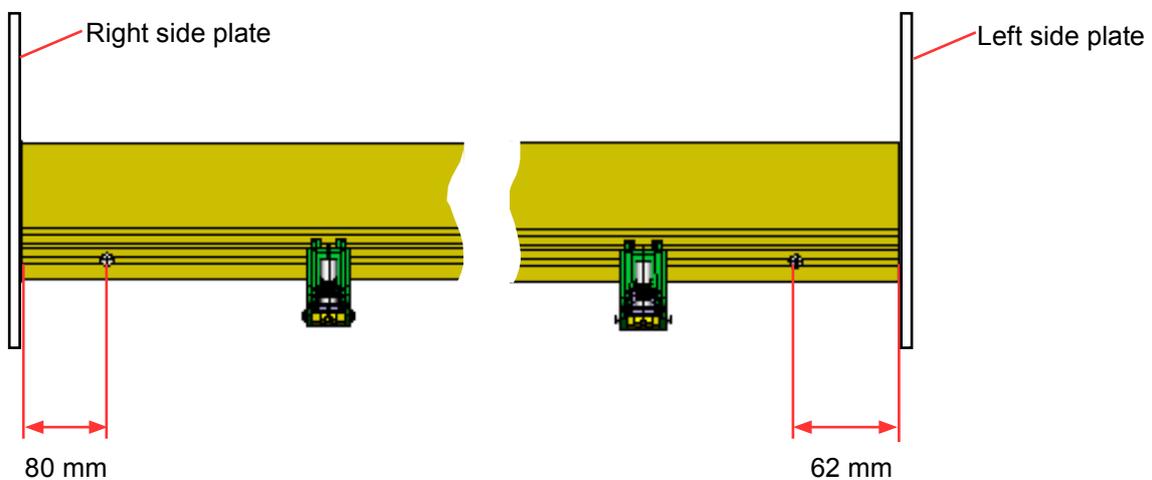
CE6000-40/60

Rear view



CE6000-120/120AMO/120AP

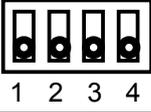
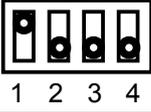
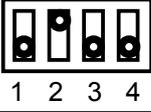
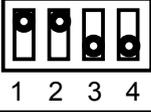
Rear view



7 ELECTRICAL ADJUSTMENTS

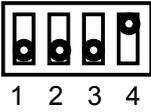
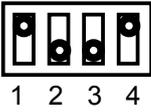
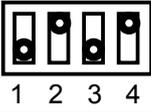
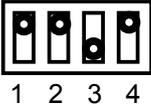
7.1 DIP Switch Settings

Factory presets (Normal Mode)

Dip Switch		1	2	3	4	Model
SW1	 ON OFF 1 2 3 4	OFF	OFF	OFF	OFF	CE6000-40
SW1	 ON OFF 1 2 3 4	ON	OFF	OFF	OFF	CE6000-60
SW1	 ON OFF 1 2 3 4	OFF	ON	OFF	OFF	CE6000-120/AMO
SW1	 ON OFF 1 2 3 4	ON	ON	OFF	OFF	CE6000-120AP

Note: Perform the NOV-RAM Clear before this dip switch setting when the Model setting was changed.

NOV-RAM Clear

Dip Switch		1	2	3	4	Model
SW1	 ON OFF 1 2 3 4	OFF	OFF	OFF	ON	CE6000-40
SW1	 ON OFF 1 2 3 4	ON	OFF	OFF	ON	CE6000-60
SW1	 ON OFF 1 2 3 4	OFF	ON	OFF	ON	CE6000-120
SW1	 ON OFF 1 2 3 4	ON	ON	OFF	ON	CE6000-120AP

7.2 List of Items Requiring Readjustment

If you replaced one of the units listed in the table below or altered their sensor positions, be sure to readjust the corresponding items.

Unit name Item	Main board	Pen block	Registration mark sensor	-X, +X paper sensor	X,Y motor	X,Y Motor drive belt	Drive roller
NOV-RAM clear	M						
Suffix setting	M	N					
Pen force adjustment	M	M					
Distance adjustment	M					M	M
Registration mark sensor adjustment	M (AP)	M	M (AP)	M (AP)			
-X, +X paper sensor position adjustment	M			M			
Firmware update	M						
Belt tension adjustment					M	M	M
Pen Exchange Y Direction adjustment	MAP						
Spacing Between Pen 1 and Pen 2 adjustment	MAP						

No mark: Unnecessary M: Must always be adjusted N: To be adjusted as necessary

(AP): The CE6000-120AP is not necessary to perform

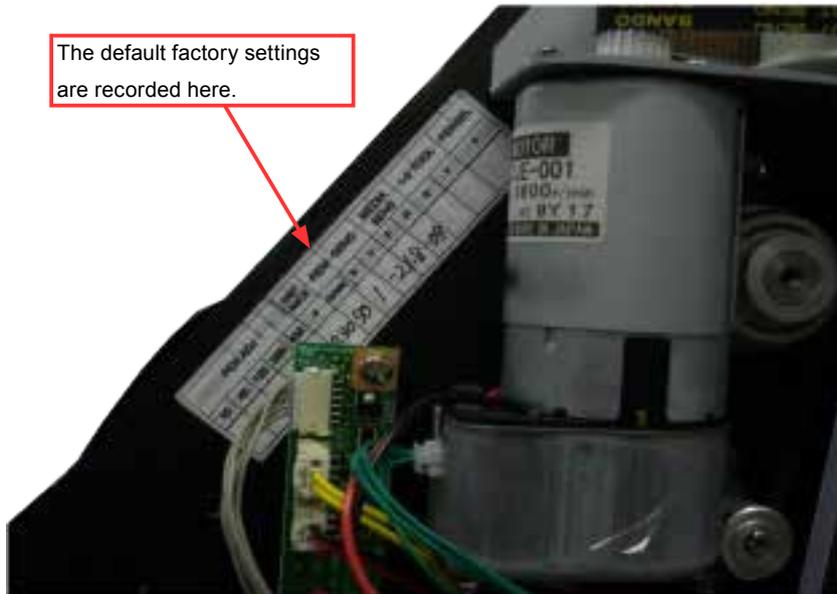
MAP: Must always be adjusted only for the CE6000-120AP

Note: The main board must have the latest version of firmware unless otherwise specified.

7.3 Explanation of the Values of the Main Board Settings

(Default factory settings)

The default factory settings are recorded on the right side plate shown below.



The contents of an example record are shown below.

PEN.ADJ					DIST ANCE		REM SENS			MEDIA SENS		1-2 TOOL		PENSEL
10	40	120	300	450	Y	GAIN	X	Y	F	R	X	Y	Y	

The media sensor position adjustment values are recorded here.

The 1st pen and 2nd pen position adjustment values are recorded here. (For the CE6000-120AP)

The pan force adjustment values are recorded here.

The registration sensor position adjustment values are recorded here.

The distance adjustment values are recorded here.

The 2nd pen station position adjustment values are recorded here. (For the CE6000-120AP)

You can input the same values when you have replaced the main board without making any adjustments except the Registration Mark Sensor Sensitivity adjustment.

If you have changed any values by making adjustments, record those values for the next maintenance check.

7.4 Clearing the Non-Volatile RAM

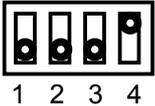
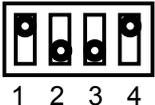
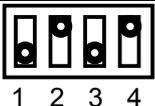
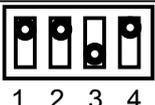
When you replace the main board, you must clear the Non-Volatile RAM (NOV-RAM).

If you clear the Non-Volatile RAM, you will lose the setup parameters for each adjustment.

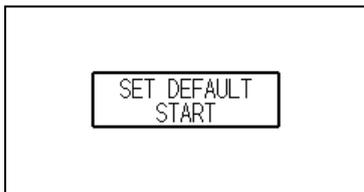
Input the adjustment values to the main board after you clear the Non-Volatile RAM.

How to clear the Non-Volatile RAM.

- (1) Set SW1 to the NOV-RAM clear mode as shown below.

Dip Switch		1	2	3	4	Model
SW1	 ON OFF 1 2 3 4	OFF	OFF	OFF	ON	CE6000-40
SW1	 ON OFF 1 2 3 4	ON	OFF	OFF	ON	CE6000-60
SW1	 ON OFF 1 2 3 4	OFF	ON	OFF	ON	CE6000-120/120AMO
SW1	 ON OFF 1 2 3 4	ON	ON	OFF	ON	CE6000-120AP

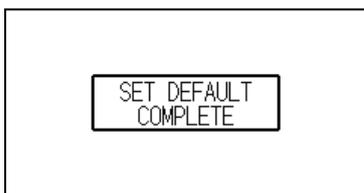
- (2) Turn on the power to the plotter.
 (3) The SET DEFAULT menu appears. The plotter immediately starts to clear the parameters on the NOV-RAM, and then sets the default values.



Do not turn off the power when the above menu is displaying.

It will take about one minute to set the default settings.

- (4) When the default setting was finished, the COMPLETE message appears on the LCD panel.



- (5) Turn off the power to the plotter.
 (6) Return the SW1 setting to normal mode as shown in the subsection 7.1.
 (7) Confirm the suffix setting which is corresponding to the model (See section 7.6.).

7.5 Selecting Display Language & Length Unit

The Language selection menu and the Length Unit selection menu are displayed at the first power on.

Select the Language and the Length Unit when the Language selection is displayed.

And when you are going to enter the adjustment mode select the language to English and then select the Length unit to METRIC.

How to select the Language and Length Unit at the first power on

- (1) Select "English" by using the arrow keys at the following menu.

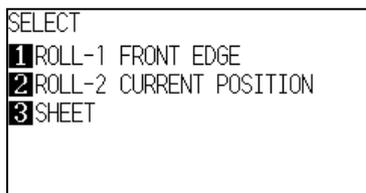


- (2) Press the ENTER key after the display language was selected.
 (3) Select "METRIC" by using the arrow keys at the following menu.

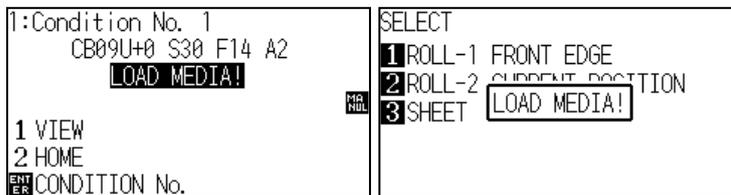


- (4) Press the ENTER key after the displaying unit was selected.
 (5) The following menu is displayed.

When the media is loading to the plotter:



When the media is not loading to the plotter:



- (6) Turn off the power when above menu is displayed.

7.6 The Suffix setting

There are the following models for the CE6000.

The size of model is selected by the dip-switch setting.

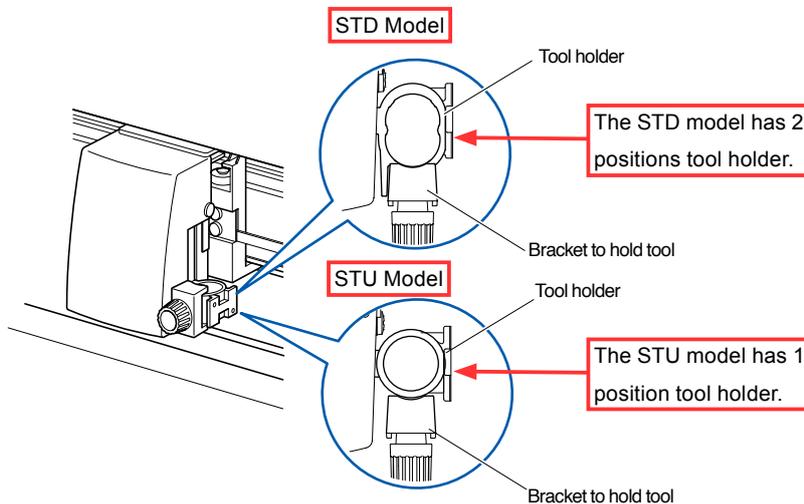
The suffix setting must be set after the size of model is selected.

Model	Suffix Model	Remarks
CE6000-40	CE6000-40-STD	Standard model of the CE6000-40
	CE6000-40-STU	USA model of the CE6000-40
CE6000-60	CE6000-60-STD	Standard model of the CE6000-60
	CE6000-60-STU	USA model of the CE6000-60
CE6000-120	CE6000-120-STD	Standard model of the CE6000-120
	CE6000-120-STU	USA model of the CE6000-120
	CE6000-120-AMO	Additional push roller model of the CE6000-120
CE6000-120AP	-	There is no suffix model with the CE6000-120AP.

How to recognize the STD model and the STU model.

The STD model has 2 positions tool holder.

The STU model has 1 position tool holder.



How to recognize the CE6000-120 model and the CE6000-120AMO model

The CE6000-120-STD and STU model has 3 push-rollers.

The CE6000-120-AMO model has 4 push-rollers.

How to select the suffix model

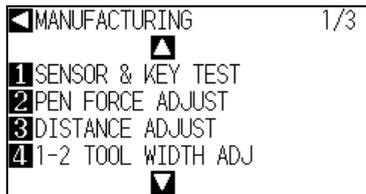
- (1) Load a sheet of paper into the plotter.
- (2) Turn on the power while pressing the FAST and ENTER keys.
- (3) Select the Language and the Length Unit if the Language selection menu is displayed (See section 7.5.).
- (4) Press the PAUSE/MENU key at the following menu.



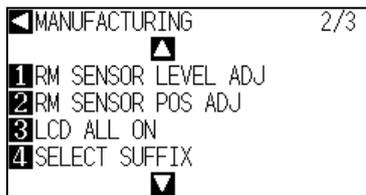
- (5) The following menu is displayed, and then press the right arrow key (ADJ).



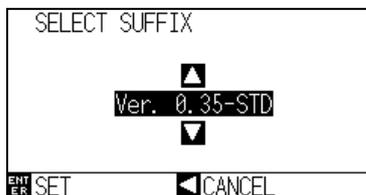
- (6) The following menu is displayed.



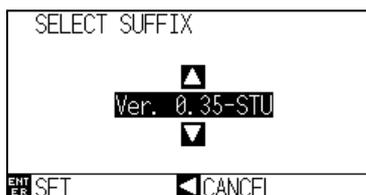
- (7) Press the up arrow key until the following menu is displayed.



- (8) Press the F4 key (SELECT SUFFIX) to display the following menu.



- (9) Select the suffix model by using the UP or DOWN arrow key.



- (10) Press the ENTER key after the suffix model is selected.

7.7 Adjusting the Pen Force

This adjustment will set the pen force.

If you replace the main board, use the following procedure to input the recorded adjustment values.

If you replace the pen block assembly, you must measure the pen force by using the Correx Dial Tension gauge (50,300,500 gf) and adjust pen force to the target force with following procedure.

How to adjust the pen force

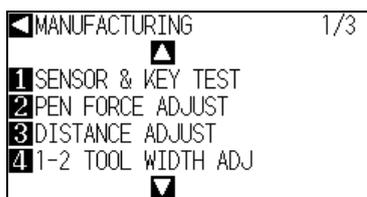
- (1) Put into a 0.9 mm diameters cutter blade holder to the tool holder. (The blade length should be 0. Do not turn out the blade from the blade holder.)
- (2) Load a sheet of paper into the plotter.
- (3) Turn on the power while pressing the FAST and the ENTER keys.
- (4) Select the Language and the Length Unit if the Language selection menu is displayed (See section 7.5.).
- (5) Press the PAUSE/MENU key at the following menu.



- (6) The following menu is displayed, and then press the right arrow key (ADJ).



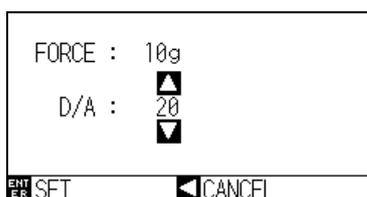
- (7) The following menu is displayed.



- (8) Press the F2 key (PEN FORCE) to display the following menu.



- (9) Press the F2 key (MANUAL) to display the following menu.

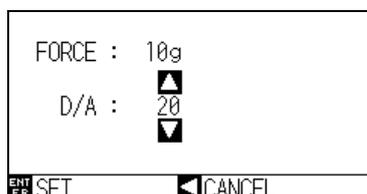


Note: Do not press the F1 key (Auto with gauger). This mode is used in production.

(10) The pen is lowered.

If you have only replaced the main board, input the adjustment values that were recorded.

Use the UP ARROW key or DOWN ARROW key to change the force setting. The number on the LCD will increase or decrease.



Press the ENTER key after you input the recorded value for the 10 g-pen force.

The next specified pen force adjustment menu appears (Step (11)).

If you have replaced the pen block assembly, use the force gauge to measure the actual force.



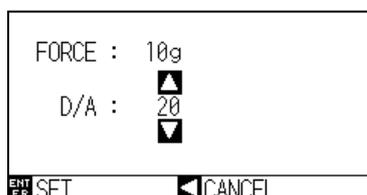
The measured pen force should be within the specification range (10 ± 2 g).

Note: The measuring point is when the bottom of blade holder left from the surface of cutting mat.

Do not keep pulling up the blade holder when measuring the pen force because the plotter gives more down pressure.

Adjust the pen force value (D/A) until the force becomes to the 10 ± 2 g.

Use the UP ARROW key or DOWN ARROW key to change the force setting. The number on the LCD will increase or decrease.



Press the ENTER key after the measured pen force becomes to the 10 ± 2 g.

The next specified pen force adjustment menu appears (Step (11)).

(11) Similarly, adjust the 40 g-pen force as like as step 10.

Press the ENTER key if the measured value is within the specification range (40 ± 4 g).

Press the ENTER key if you have input the recorded value.

The next specified pen force appears.

(12) Similarly, adjust the 120 g-pen force as like as step 10.

Press the ENTER key if the measured value is within the specification range (120 ± 10 g).

Press the ENTER key if you have input the recorded value.

The next specified pen force appears.

(13) Similarly, adjust the 305 g-pen force as like as step 10.

Press the ENTER key if the measured value is within the specification range (305 ± 20 g).

Press the ENTER key if you have input the recorded value.

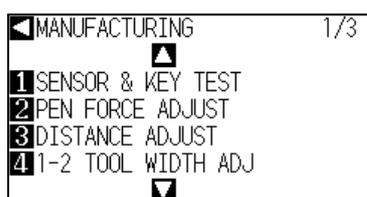
The next specified pen force appears.

(14) Similarly, adjust the 458 g-pen force as like as step 10.

Press the ENTER key if the measured value is within the specification range (458 ± 20 g).

Press the ENTER key if you have input the recorded value.

(15) The following menu is displayed.



(16) Turn off the power when above menu is displayed.

Note: When adjusting the pen force, it is important to do it quickly. Delaying the pen force adjustment changes the temperature of the actuator and causes artificially lower readings. When this happens the actual pen force may be higher than the specification. This is especially true for the upper pen force adjustment.

Specification of the actual pen force

Specified pen force	Actual force range
10 g	8 to 12 g
40 g	36 to 44 g
120 g	110 to 130 g
305 g	285 to 325 g
458 g	438 to 478 g

Note: The "ENCODER ERROR" is displayed when starting the pen force adjustment if the blade holder is not set to the tool holder and the adjustment value is low at 10 g force adjustment. Set the blade holder to the tool holder and then adjust the pen force.

7.8 Adjusting the Distance Accuracy

This adjustment will set the distance accuracy.

If you replace the main board, use the following procedure to input the recorded adjustment values.

If you replace the grit roller, you must adjust the distance accuracy using the following procedure.

How to adjust the distance accuracy

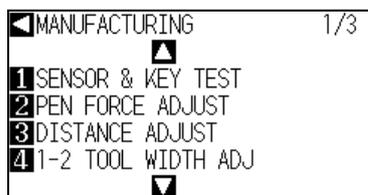
- (1) Mount a ball-point pen into the pen holder.
- (2) Load a sheet of A3 size paper into the plotter.
- (3) Turn on the power while pressing the FAST and ENTER keys.
- (4) Select the Language and the Length Unit if the Language selection menu is displayed (See section 7.5.).
- (5) Press the PAUSE/MENU key at the following menu.



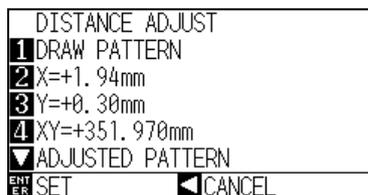
- (6) The following menu is displayed, and then press the right arrow key (ADJ).



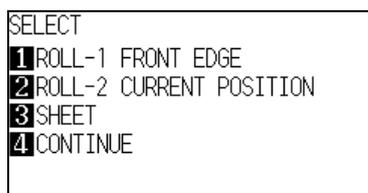
- (7) The following menu is displayed.



- (8) Press the F3 key (DISTANCE ADJUST) to display the following menu.



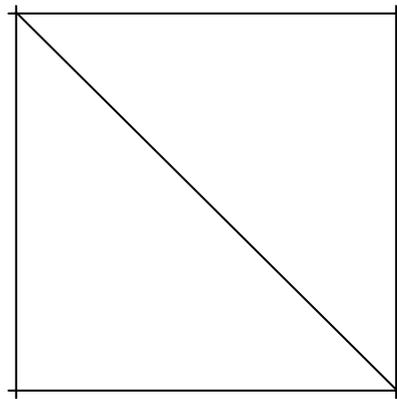
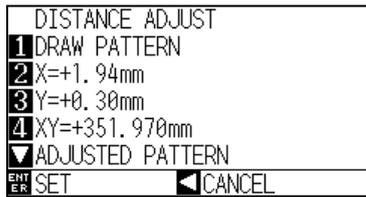
- (9) Press the Down Arrow key (ADJUST PATTERN) to display the following menu.



- (10) Press the F3 key (SHEET).

(11) The plotter detects the paper size, and then plots the following pattern.

The following menu appears after the adjusted pattern plots finished.



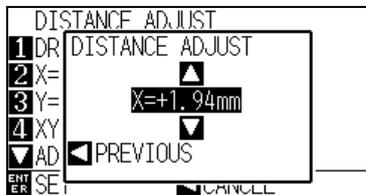
X=250 mm
Paper feeding direction

Y=250 mm
Carriage moving direction

(12) Remove the paper and measure the X- and Y-axis distances.

If you have replaced the main board only, use the recorded values.

Press the F2 key (X=) to input the X-axis distance adjustment value.



Press the F3 key (Y=) to input the Y-axis distance adjustment value.



Press the Up or Down arrow key to change the adjustment value.

The formula of the input value is as follows:

Input value for X-axis = 250 mm - measured X distance

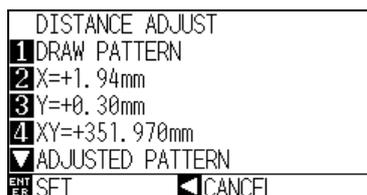
Input value for Y-axis = 250 mm - measured Y distance

For example:

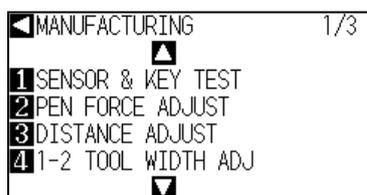
If you measured 249.0 mm for the Y-axis then input 1 mm for the adjustment value.

Adjustable range: -5.0 mm to +5.0 mm , 0.01 mm steps

Press the Left arrow key after input the adjustment value. The following menu is displayed.

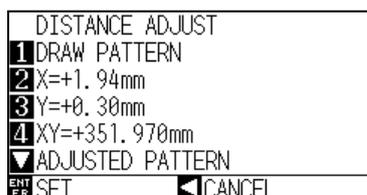


Press the ENTER key to set the adjustment value. The following menu is displayed.

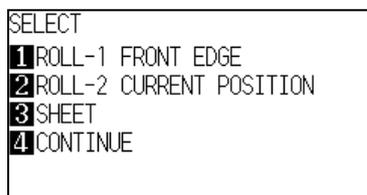


Skip to step (20)

- (13) Confirm the adjusted distance if you are adjusting the distance adjustment by the measurement value.
- (14) Load a sheet of A3 size paper into the plotter.
- (15) Press the Down Arrow key (ADJUST PATTERN).

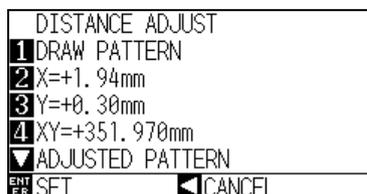


- (16) Press the F3 key (SHEET).

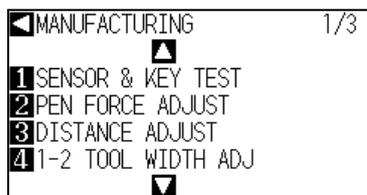


- (17) The plotter detects the paper size, and then plots the adjusted pattern
- (18) Remove the paper and measure the X- and Y-axis distances.

Press the ENTER key at the following menu if measured distance is within 250 mm \pm 0.2 mm.



- (19) The following menu is displayed.



- (20) Turn off the power.

Note: The XY of distance adjustment do not need to adjust.

Do not change this value. Set it to +351.970 if you changed it.

DISTANCE ADJUST	
1	DRAW PATTERN
2	X=+1.94mm
3	Y=+0.30mm
4	XY=+351.970mm
▼	ADJUSTED PATTERN
ENT ER	SET ◀ CANCEL

7.9 Adjusting the Registration Mark Sensor Sensitivity

This adjustment will set the registration mark sensor sensitivity.

The sensitivity of sensor need adjust if you replace the main board or the registration mark sensor.

How to adjust the registration mark sensor sensitivity

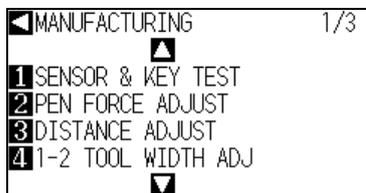
- (1) Turn on the power while pressing the FAST and ENTER keys.
- (2) Load an A4 size sheet of paper into the plotter.
The paper color must be white, and it recommend copy paper.
- (3) Select the Language and the Length Unit if the Language selection menu is displayed (See section 7.5.).
- (4) Press the PAUSE/MENU key at the following menu.



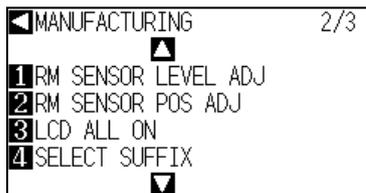
- (5) The following menu is displayed, and then press the right arrow key (ADJ).



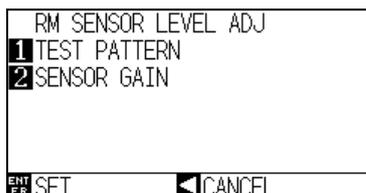
- (6) The following menu is displayed.



- (7) Press the up arrow key until the following menu is displayed.



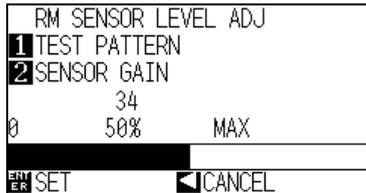
- (8) Press the F1 key (RM SENSOR LEVEL ADJ). The following menu is displayed.



- (9) Press the F2 key (SENSOR GAIN). The following menu is displayed.



- (10) Position the white area of paper under the Registration Mark Sensor by using the arrow keys.
 (11) Press the ENTER key to start registration mark sensor sensitivity adjustment.
 (12) The following menu is displayed after adjustment is finished.



Confirm that the level is from the 45 to the 55.

Readjust it again if the level is not from the 45 to the 55.

When making this adjustment, make sure that the media is not laminated.

Use the copy paper for this adjustment.

- (13) Press the ENTER key to complete this adjustment.
 (14) Turn off the power.

7.10 Adjusting the Offset of the Registration Mark Sensor

This adjustment will set the registration mark sensor position and the tool position.

If you have replaced the registration mark sensor, you must adjust the offset of the registration mark sensor.

If you replace the main board, use the following procedure to input the recorded adjustment values.

Preparation

This adjustment have to be performed after the sensitivity of sensor adjustment (See section 7.9.).

Print out the target sheet (see next page) on a printer.

The specification of the cross mark is 30 mm line length, and 0.3 to 0.5 mm line width.

The target sheet does not need to print if the recorded adjustment values are input.

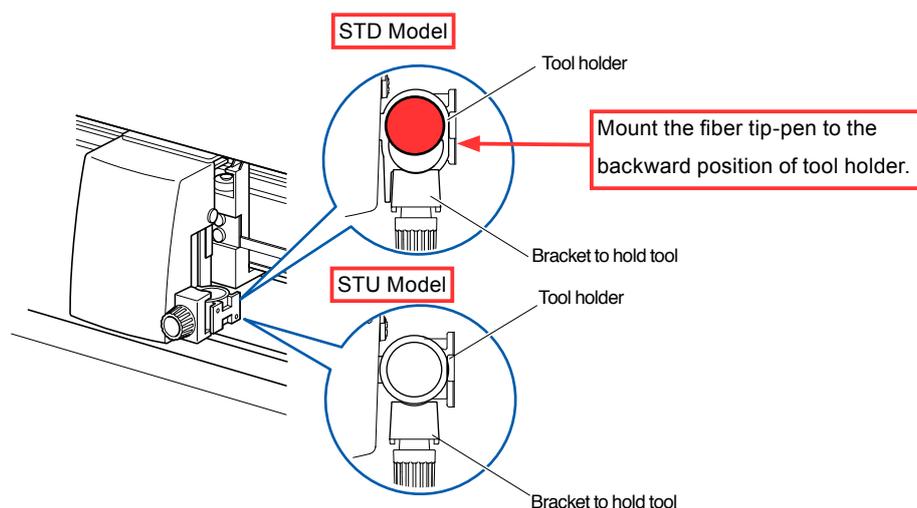
How to set the registration mark sensor offset

- (1) Set an target sheet of paper into the plotter.

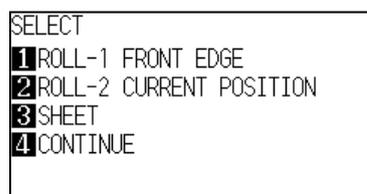
Set the A4 size of paper if the recorded adjustment values are input.

- (2) Mount a water-based fiber-tip pen into the plotter.

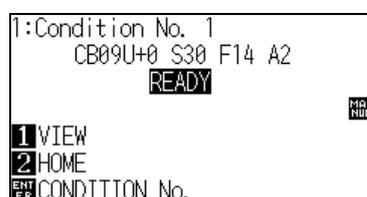
Mount a water-based fiber-tip pen to the backward position of tool holder if the plotter is STD model.



- (3) Turn on the power while pressing the FAST and ENTER keys.
- (4) Select the Language and the Length Unit if the Language selection menu is displayed (See section 7.5.).
- (5) Press the F3 key (SHEET) when the following menu is displayed.



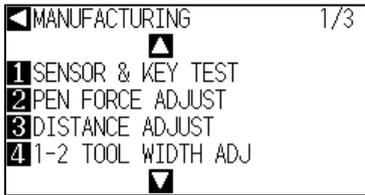
- (6) Press the PAUSE/MENU key at the following menu.



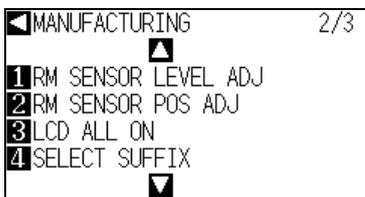
(7) The following menu is displayed, and then press the right arrow key (ADJ).



(8) The following menu is displayed.



(9) Press the up arrow key until the following menu is displayed.



(10) Press the F2 key (RM SENSOR POS ADJ). The following menu is displayed.



Press the F3 (X=) or F4 (Y=) to input the recorded adjustment values if you replace the main board.

Input the recorded adjustment value by using the Up arrow key or Down arrow key with the following menu.



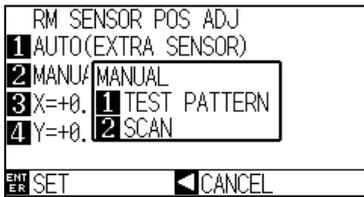
Press the Left arrow key after input the recorded adjustment values. The following menu is displayed.



Press the ENTER key to store the value.

Skip to step (18)

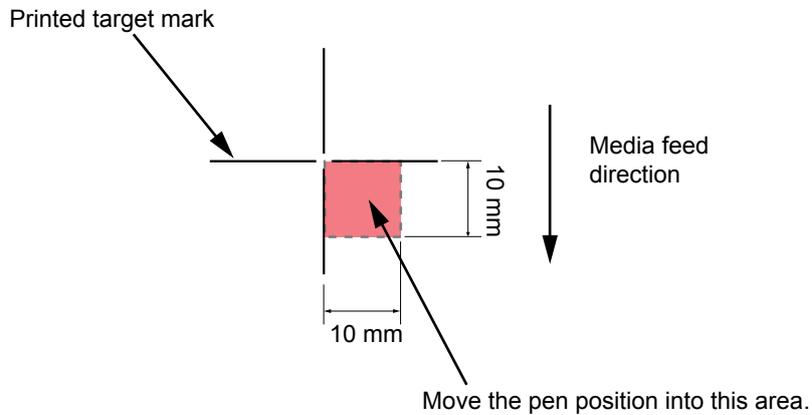
- (11) Press the F2 key (MANUAL) if the registration mark sensor was replaced. The following menu is displayed.



- (12) Press the F2 key (SCAN). The following menu is displayed.



- (13) Use the Position keys to move the pen position to the printed cross mark area shown below.



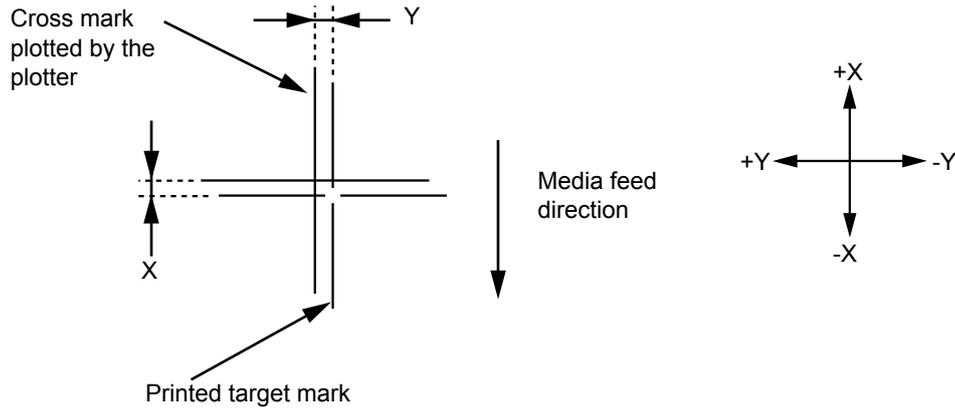
Note: Position the pen-tip to the area above. Do not position the RMS sensor to the area above.

- (14) Press the ENTER key after positioned the pen-tip.
 (15) The plotter scans the printed cross mark and then the plotter then plots a new cross mark based on the reading of the printed cross mark.

The following menu is displayed.

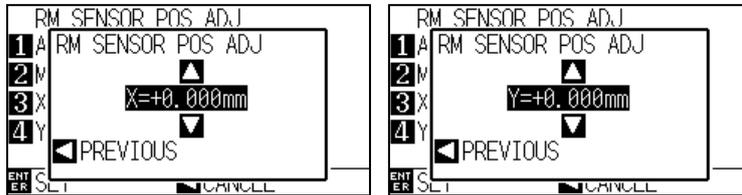


(16) Measure the offset between the printed cross mark and plotted cross mark.

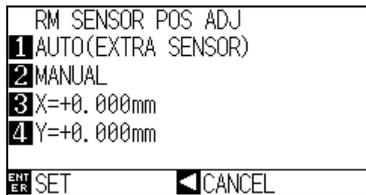


Press the F3 (X=) or F4 (Y=) to input the measured adjustment values.

Input the measured adjustment value by using the Up arrow key or Down arrow key with the following menu.



Press the Left arrow key after input the measured adjustment values. The following menu is displayed.



Press the ENTER key to store the value.

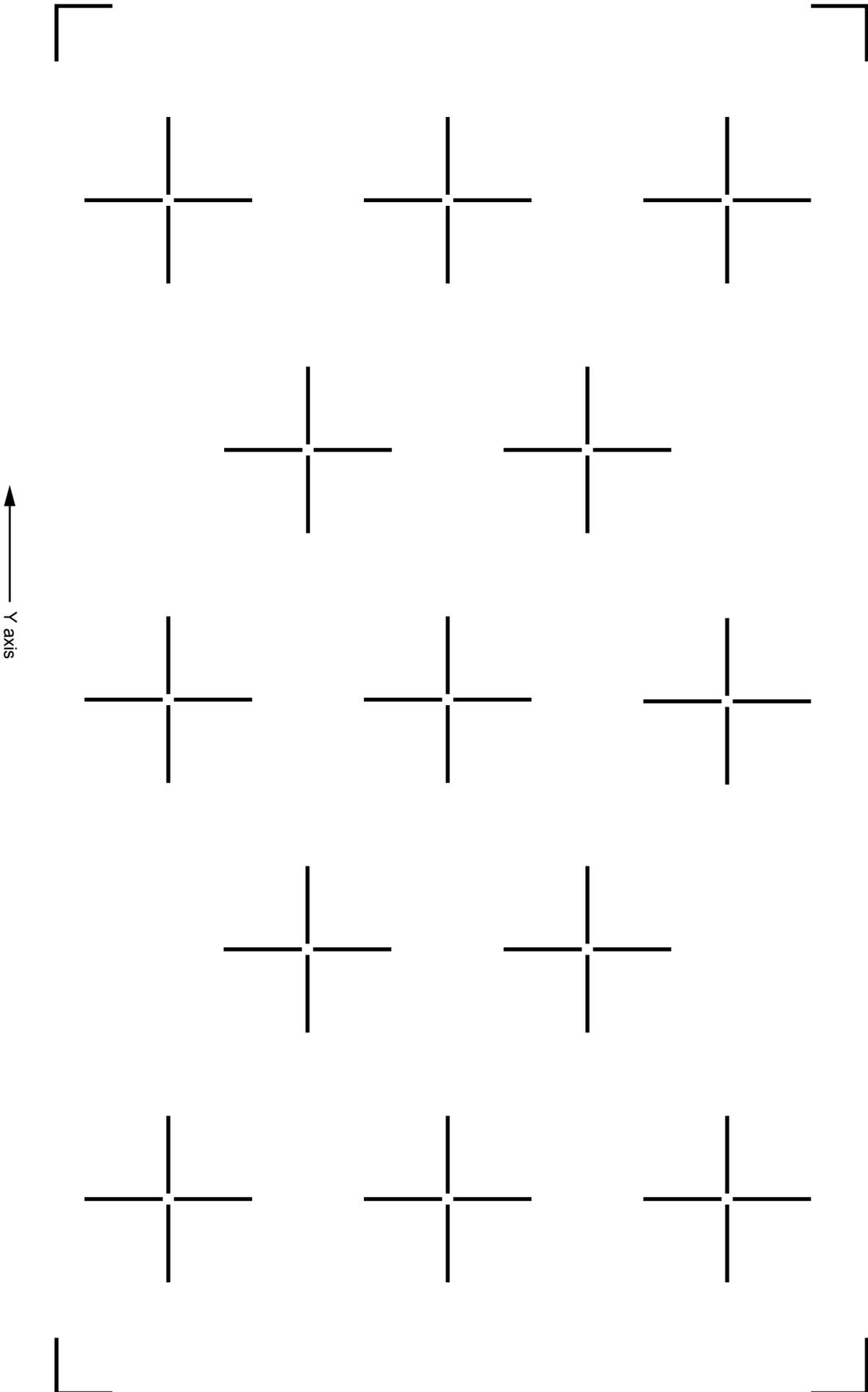
(17) Verify that the plotted cross mark line is located at the center of the printed cross mark line. Move the pen to the printed cross mark area. Press the ENTER key to repeat the scan as described in step (14) and (15).

(18) Repeat steps (14) and (15) if the location of the plotted cross mark is incorrectly positioned.

(19) Turn off the power.

AUTO REGISTRATION MARK TARGET

The specification of the cross mark is 30mm line length, and 0.3 to 0.5mm line width.



7.11 Adjusting the RMS sensor and the Paper sensor position

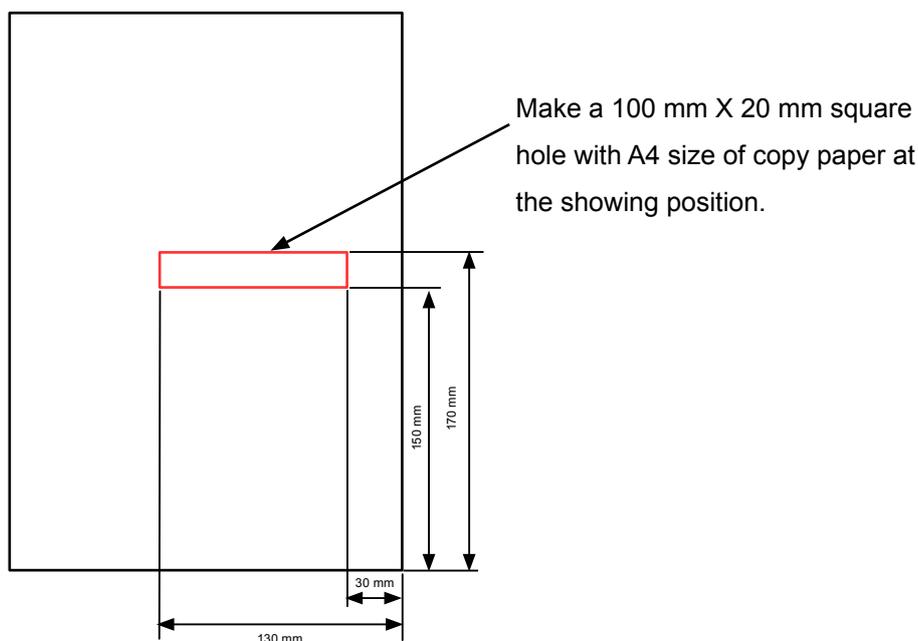
This adjustment will set the registration mark sensor position and the paper position.

If you have replaced the registration mark sensor or the paper sensor, you must adjust the RMS sensor and the paper sensor position.

If you replace the main board, use the following procedure to input the recorded adjustment values.

Preparation

Make a following adjustment target sheet.



The adjustment target sheet does not need to make if the recorded adjustment values are input.

How to set the registration mark sensor offset

- (1) Set an target sheet of paper into the plotter.

Note: The front media sensor should be covered by the front area of the target sheet to read the front edge of the target sheet when the target sheet is loading into the plotter.

Set the A4 size of paper if the recorded adjustment values are input.

- (2) Turn on the power while pressing the FAST and ENTER keys.
- (3) Select the Language and the Length Unit if the Language selection menu is displayed (See section 7.5.).
- (4) Press the F3 key (SHEET) when the following menu is displayed.

```

SELECT
1 ROLL-1 FRONT EDGE
2 ROLL-2 CURRENT POSITION
3 SHEET
4 CONTINUE
  
```

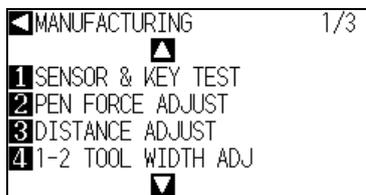
- (5) Press the PAUSE/MENU key at the following menu.



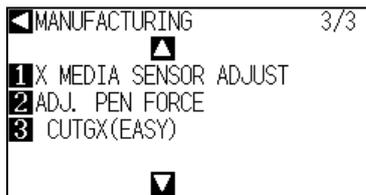
- (6) The following menu is displayed, and then press the right arrow key (ADJ).



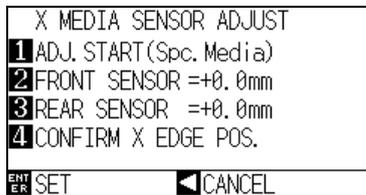
- (7) The following menu is displayed.



- (8) Press the up arrow key until the following menu is displayed.

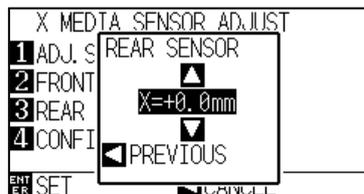
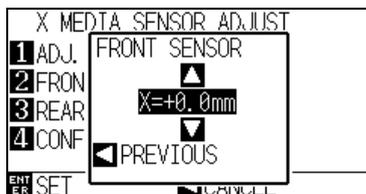


- (9) Press the F1 key (X MEDIA SENSOR ADJUST). The following menu is displayed.

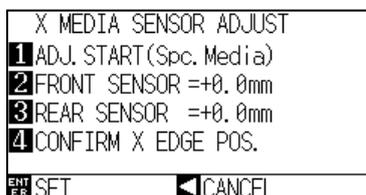


Press the F3 (FRONT SENSOR=) or F4 (REAR SENSOR=) to input the recorded adjustment values if you replace the main board.

Input the recorded adjustment value by using the Up arrow key or Down arrow key with the following menu.



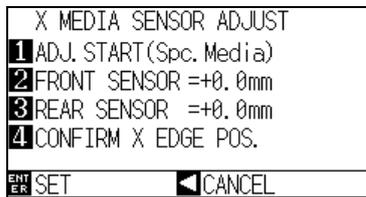
Press the Left arrow key after input the recorded adjustment values. The following menu is displayed.



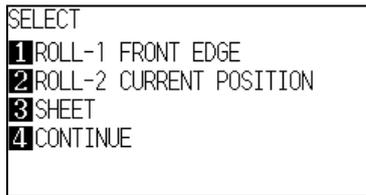
(10) Press the ENTER key to store the value.

Skip to step (18)

(11) When the X-front media or the X-rear media or the Registration-mark sensor are replaced press the F1 key (ADJ.START (Spc. Media)).



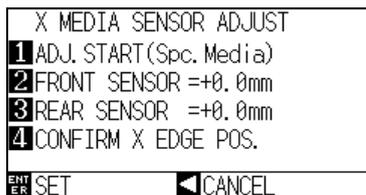
(12) Press the F3 key (SHEET) when the following menu is displayed.



The plotter scan the paper size.

Then the plotter scan the edge of adjustment sheet, and then it automatically adjust the front and the rear media sensor position with the registration mark sensor position.

(13) The following menu is displayed.

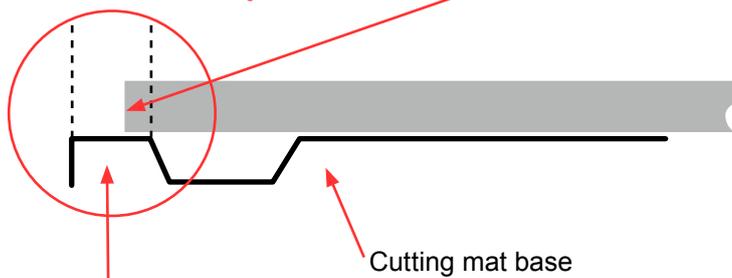


(14) Press the F4 key (CONFIRM X EDGE POS.).

The front edge of adjustment sheet moves to as shown in the picture below.



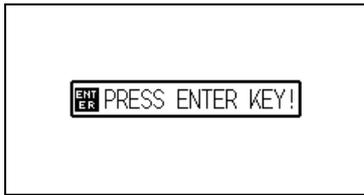
The front edge of adjustment sheet



Cutting mat base

Confirm the front edge of adjustment sheet come to this front area of cutting mat base.

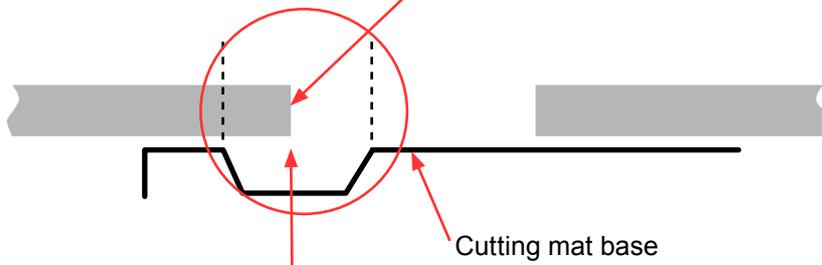
(15) Press the ENTER key after confirmed the position of front edge of adjustment sheet.



The front square hole edge of adjustment sheet moves to as shown in the picture below.



The front square hole edge of adjustment sheet



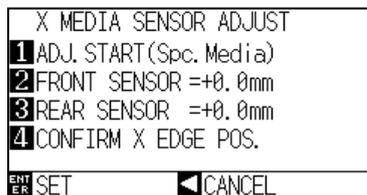
Cutting mat base

Confirm the front square hole edge of adjustment sheet come to this groove area of cutting mat base.

(16) Press the ENTER key after confirmed the position of front square hole edge of adjustment sheet.



(17) Press the ENTER key to store the value after the following menu is displayed.



(18) Turn off the power.

7.12 Adjusting the Tool Exchange Position (CE6000-120AP)

This adjustment will set the tool exchange position.

This adjustment is used for the 2nd tool exchange.

If you replace the main board, use the following procedure to input the recorded adjustment values.

How to adjust the tool exchange position

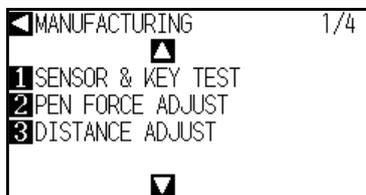
- (1) Turn on the power while pressing the FAST and ENTER keys.
- (2) Load an A4 size sheet of paper into the plotter.
- (3) Select the Language and the Length Unit if the Language selection menu is displayed (See section 7.5.).
- (4) Press the PAUSE/MENU key at the following menu.



- (5) The following menu is displayed, and then press the right arrow key (ADJ).



- (6) The following menu is displayed.



- (7) Press the up arrow key until the following menu is displayed.



- (8) Press the F2 key (TOOL2 EXCHANGE ADJ). The following menu is displayed.



- (9) Press the F2 key (CHECK POS) to move the pen carriage to the exchange position.

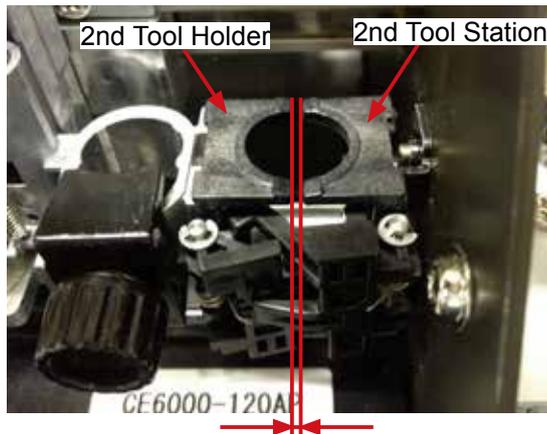


- (10) Press the F3 key (Y ADJUST) to display the following menu to adjust the gap.



- (11) Measure the gap between the 2nd tool holder and the 2nd tool station.

- (12) Adjust gap using the up or the down arrow key. Adjust gap to 1 mm between the 2nd tool holder and the 2nd tool station.



This gap should be 1 mm.

- (13) Press the left arrow key after the gap is adjusted. The following menu is displayed.



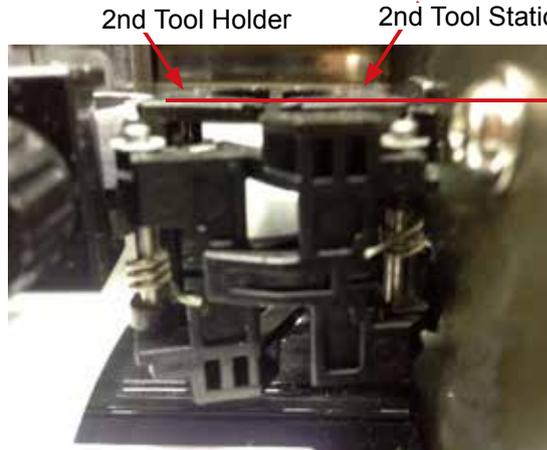
- (14) Press the F2 key (CHECK POS) twice to confirm the adjusted gap.

(15) Press the F4 key to display the following menu to adjust the 2nd tool holder height.



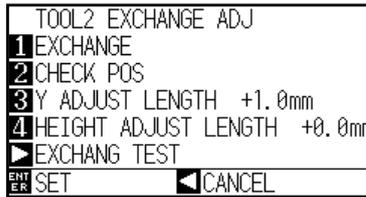
(16) Adjust the 2nd tool holder height by using the up or the down arrow key.

Adjust tool holder height to be same height with the 2nd tool holder and the 2nd tool station.



The height of 2nd tool holder should be same level to the 2nd tool station.

(17) Press the left arrow key after the height is adjusted. The following menu is displayed.



(18) Press the F2 key (CHECK POS) twice to confirm the adjusted height.

(19) Mount a fiber tip pen in the 2nd tool station.

(20) Press the right arrow key to confirm that the pen exchanging is performed correctly.

(21) If the pen exchanging is performed correctly, press the ENTER key to store the setting and complete the adjustment.

7.13 Adjusting the Offset between Tool 1 and Tool 2 (CE6000-120AP)

This adjustment will set the tool offset position.

If you replace the main board, use the following procedure to input the recorded adjustment values.

How to adjust the tool exchange position

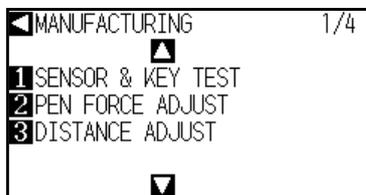
- (1) Mount the ball point pens onto the 1st-tool holder and 2nd-tool station.
- (2) Load an A4 size sheet of paper into the plotter.
- (3) Turn on the power while pressing the FAST and ENTER keys.
- (4) Select the Language and the Length Unit if the Language selection menu is displayed (See section 7.5.).
- (5) Press the PAUSE/MENU key at the following menu.



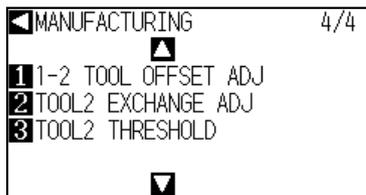
- (6) The following menu is displayed, and then press the right arrow key (ADJ).



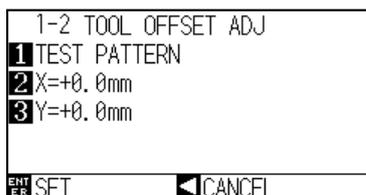
- (7) The following menu is displayed.



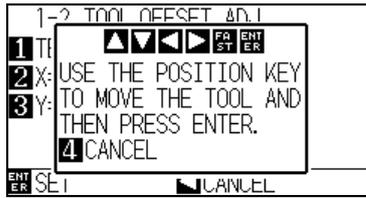
- (8) Press the up arrow key until the following menu is displayed.



- (9) Press the F1 key to display the menu shown below.

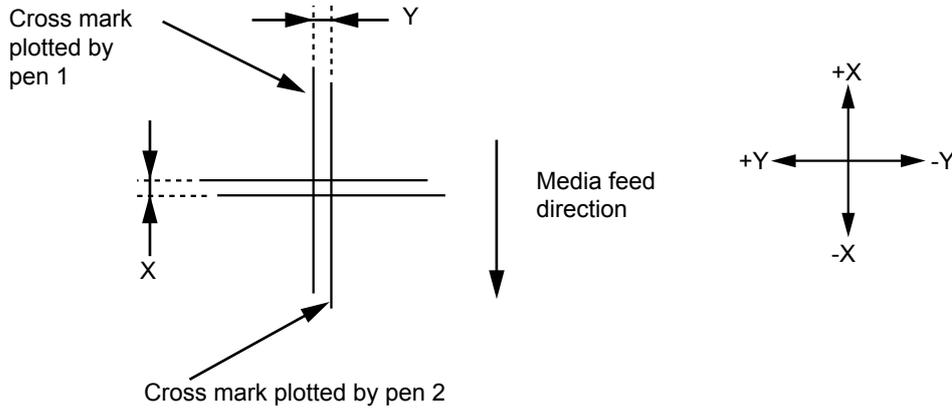


(10) Press the F1 key to display the menu shown below.

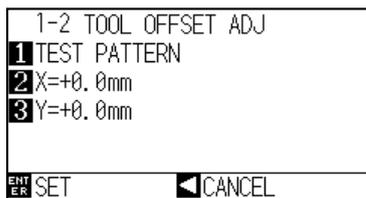


(11) Use the ARROW keys to move the pen to an open area to plot the adjustment pattern.

(12) Press the ENTER key to plot the cross marks by pen 1 and pen 2 shown below.



(13) When they have been plotted, the menu shown below is displayed.



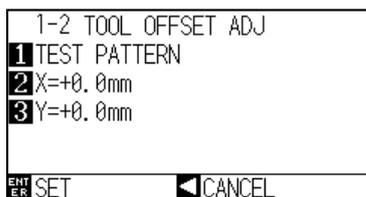
(14) Measure the offset between the pen 1 cross mark and the pen 2 lines.

(15) Press the F2 key to display the menu shown below.

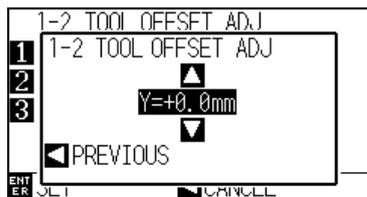


(16) Set the X-offset value. Press the UP ARROW key or DOWN ARROW key to change the number based on the pen 1 cross mark.

(17) Press the left position key when the X direction is adjusted.



(18) Press the F3 key to display the menu shown below.



(19) Set the Y-offset value. Press the UP ARROW key or DOWN ARROW key to change the number based on the pen 1 cross mark.

(20) Press the left position key when the Y direction is adjusted.

(21) Press the F2 key. Verify that the plotted pen 1 cross mark is located at the center of the plotted pen 2 lines.

(22) If the plotted cross marks are in the correct positions, press the ENTER key to store the setting and complete the adjustment.

7.14 Adjusting the Y Limit Position (CE6000-120AP)

This adjustment will set the Y limit position for the CE6000-120AP.

If you replace the main board, use the following procedure to set the Y limit position.

This adjustment was added from the firmware version 1.50 of CE6000-120AP. Update the firmware first if the firmware version is older than 1.50.

How to adjust the Y limit position

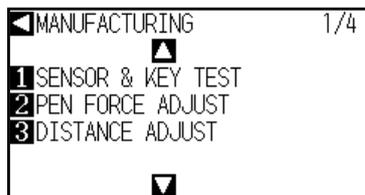
- (1) Load an A4 size sheet of paper into the plotter.
- (2) Turn on the power while pressing the FAST and ENTER keys.
- (3) Select the Language and the Length Unit if the Language selection menu is displayed (See section 7.5.).
- (4) Press the PAUSE/MENU key at the following menu.



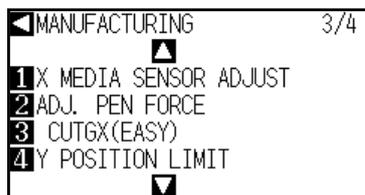
- (5) The following menu is displayed, and then press the right arrow key (ADJ.).



- (6) The following menu is displayed.



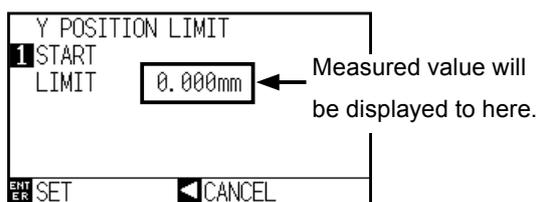
- (7) Press the up arrow key until the following menu is displayed.



- (8) Press the F4 key to display the menu shown below.



- (9) Press the F1 key to start to set the Y limit position. The pen block move to far left side to measure the Y limit position.



- (10) Press the ENTER key to store the setting and complete the adjustment after the measured value was displayed.

7.15 Upgrading the System Firmware

To upgrade the system firmware you need to have the following files. In addition, you need to use a computer and USB cable.

For CE6000-40/60/120

- CE6000_Vxx.x.X CE6000 firmware
- SEND.EXE Utility to transfer files using Windows®
- OPS662 USB Driver software for CE6000

For CE6000-120AP

- CE6000AP_Vxx.x.X CE6000-120AP firmware
- SEND.EXE Utility to transfer files using Windows®
- OPS622 USB Driver software for CE6000 (The USB Driver is same as CE6000 when in the firmware update mode.)

Note: The firmware of CE6000-120AP can't install to the main-board of the CE6000. And the firmware of CE6000 can't install to the main-board of CE6000-120AP.

Install the correct main-board for each model when updating the firmware..

Main Board for the CE6000-40/60/120: 792600700 Main Board, CE6000

Main Board for the CE6000-120: 792600730 Main Board, CE6000-120AP

Preparation

Install the USB Driver software to your computer before upgrading the system firmware.

How to upgrade the system firmware

- (1) Connect the computer and the CE6000 via the USB interface.
- (2) Turn on the power while pressing the RIGHT ARROW key and the LEFT ARROW key to display the menu shown below.

```
PLEASE SEND PRG.
CE6000
BOOT: V1.00
FPGA: 10
```

- (3) Send firmware to the plotter from the computer.
 - Execute SEND.EXE.
 - Select the system firmware file from the SEND.EXE menu.
 - Select CE6000 from the output menu. (Select the type of file to all files when select the firmware file.)
 - Output the system firmware file to the CE6000.

8 SERVICE MODES

8.1 Sensor and Key switch test Mode

This mode checks the sensor status. If there is a bad sensor you will observe one of the symptoms in the table below.

Please check the relevant sensor(s).

Sensor	Symptom
Y home sensor	The pen block hits the right side plate.
Cam sensor	The plotter displays "LOAD MEDIA!" when media is already loaded.
Push roller sensor	The pen block hits the left side plate.
+X, -X media sensor	Media drops out of the plotter.

If there is a bad switch on panel you can check at this mode.

How to test the sensors

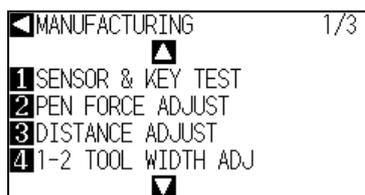
- (1) Load an A4 size sheet of paper into the plotter.
- (2) Turn on the power while pressing the FAST and ENTER keys.
- (3) Select the Language and the Length Unit if the Language selection menu is displayed (See section 7.5).
- (4) Press the PAUSE/MENU key at the following menu.



- (5) The following menu is displayed, and then press the right arrow key (ADJ).



- (6) The following menu is displayed.



- (7) Press the F1 key (SENSOR & KEY TEST). The following menu is displayed.

```

YHOME =_ P_ROL=_ CAM=_
XFRONT=_ XREAR=_

1=_ Sim=_          Pau=H Ori=_
2=H          Up=_          Cop=_
3=_          Lf=_ Ri=_
4=_ Fas=_ Dn=_ Cnd=_ Ent=_

```

YHOME=: "H" is displayed when the Y home sensor dog is crossed to the Y home sensor.

P_ROL=: "H" is displayed when the push roller sensor dog is crossed to the push roller sensor.

CAM=: "H" is displayed when the cam sensor dog is crossed to the cam sensor.

XFRONT=: "H" is displayed when the X front media sensor is covered by the media.

XREAR=: "H" is displayed when the X rear media sensor is covered by the media.

1=: "H" is displayed when the F1 key is pressed.

2=: "H" is displayed when the F2 key is pressed.

3=: "H" is displayed when the F3 key is pressed.

4=: "H" is displayed when the F4 key is pressed.

Sim=: "H" is displayed when the SIMPLE key is pressed.

Pau=: "H" is displayed when the PAUSE/MENU key is pressed.

Up=: "H" is displayed when the UP arrow key is pressed.

Lf=: "H" is displayed when the LEFT arrow key is pressed.

Ri=: "H" is displayed when the RIGHT arrow key is pressed.

Dn=: "H" is displayed when the DOWN arrow key is pressed.

Fas=: "H" is displayed when the FAST key is pressed.

Ori=: "H" is displayed when the ORIGIN key is pressed.

Cop=: "H" is displayed when the COPY key is pressed.

Cod=: "H" is displayed when the CONDITION key is pressed.

Ent=: "H" is displayed when the ENTER key is pressed.

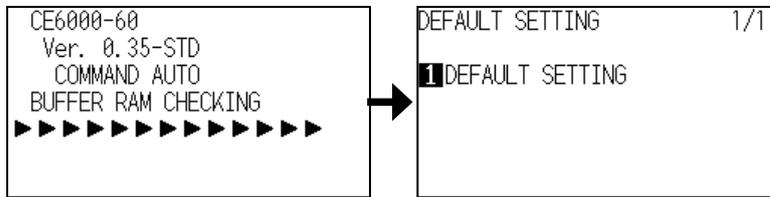
- (8) When testing is complete, turn off the power to the plotter.

8.2 Clear Setup Mode

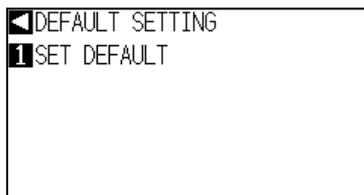
This mode returns all the conditions to their default settings.

How to clear the setups

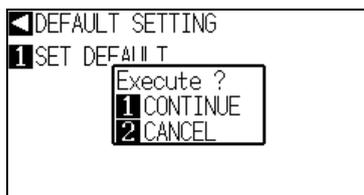
- (1) Turn on the power while pressing the UP ARROW key to display the menu shown below.



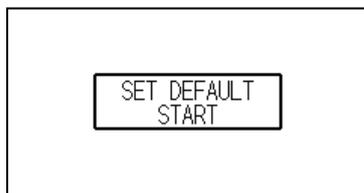
- (2) Press the F1 key (DEFAULT SETTING). The following menu is displayed.



- (3) Press the F1 key (SET DEFAULT). The following menu is displayed.



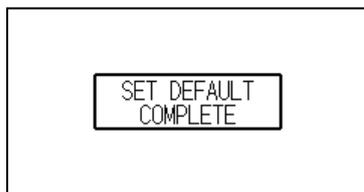
- (4) Press the F1 key (CONTINUE). The following menu is displayed.



Do not turn off the power when the above menu is displaying.

It will take about one minute to set the default settings.

- (5) When the default setting was finished, the COMPLETE message appears on the LCD panel.



- (6) Turn off the power.

8.3 Printing the Setting of the Plotter

Condition setting list can be printed when you need to check the current setting of the plotter.

Operation

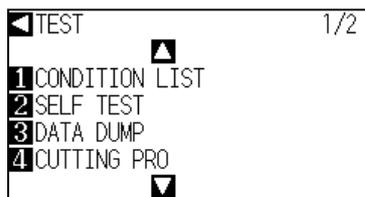
- (1) Set a paper larger than A3 size.
- (2) Set the pen tool to the tool carriage and select the condition where the pen tool is set.
- (3) Press the PAUSE/MENU key at the following menu.



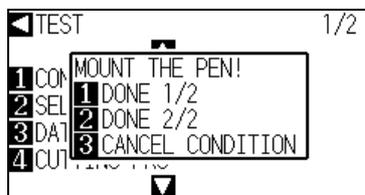
- (4) The following menu is displayed, and then press the left arrow key (TEST).



- (5) The following menu is displayed, and then press the F1 key (CONDITION LIST).

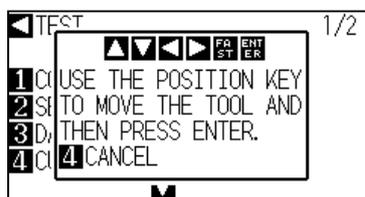


- (6) Press the F1 key (CONDITION LIST) to display the menu below.



- (7) Press the F1 key (DONE 1/2) or the F2 key (DONE 2/2).

Message to confirm tool position is displayed.



- (8) Move the tool carriage to print start position by using the POSITION key.
- (9) Press the ENTER key to start printing the condition list.

It will return to READY status when the printing is completed.

8.4 Test Pattern

Print a self-test pattern to check the operation of the plotter.

Operation

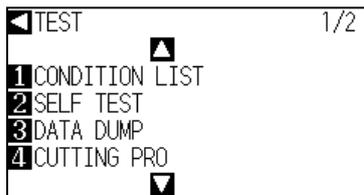
- (1) Set a paper larger than A3 size.
- (2) Set the pen tool to the tool carriage and select the condition where the pen tool is set.
- (3) Press the PAUSE/MENU key at the following menu.



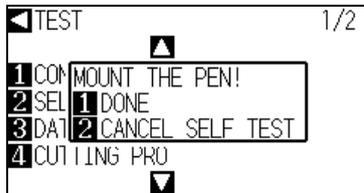
- (4) The following menu is displayed, and then press the left arrow key (TEST).



- (5) The following menu is displayed, and then press the F2 key (SELF TEST).



- (6) The following menu is displayed.



- (7) Confirm that the pen is set, and then press the F1 key (DONE) to print the test pattern.
- (8) Turn the power off to stop the printing.

8.5 Confirm the Cutting Data

Output of the dump list of the cutting data received by the plotter is possible. It is used to check if the transmission of cutting data is performed correctly.

Operation

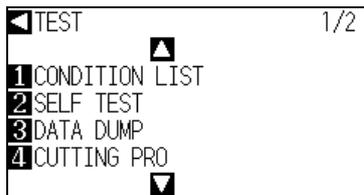
- (1) Set a paper larger than A3 size.
- (2) Set the pen tool to the tool carriage and select the condition where the pen tool is set.
- (3) Press the PAUSE/MENU key at the following menu.



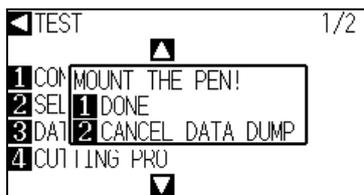
- (4) The following menu is displayed, and then press the left arrow key (TEST).



- (5) The following menu is displayed, and then press the F3 key (DATA DUMP).



- (6) The following menu is displayed, and then confirm that the pen tool is set.



- (7) Press the F1 key (DONE).

The error message will be displayed when the command setting is set to "AUTO".

Set the command setting that is corresponding to the application software.

- (8) The following menu is displayed, and then send the data to plotter from the PC.



- (9) Turn the power off to stop the printing.

8.6 Self Diagnostic Test

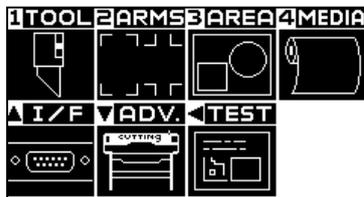
Operation status can be tested by self diagnostic test by operating the sensors and switches following the instruction on the screen.

Operation

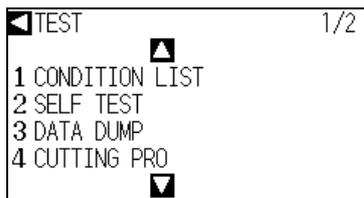
- (1) Confirm that the power is turned off.
- (2) Turn the power on without loading the media.
- (3) Press the PAUSE/MENU key at the following menu.



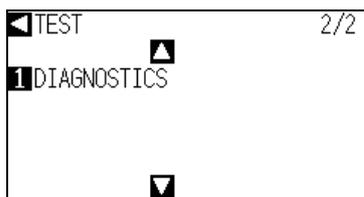
- (4) The following menu is displayed, and then press the left arrow key (TEST).



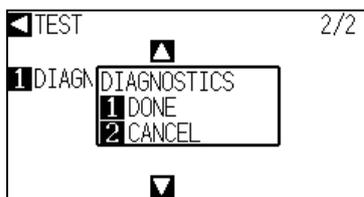
- (5) The following menu is displayed, and then press the Up arrow key.



- (6) The following menu is displayed, and then press the F1 key (DIAGNOSTICS).



- (7) The following menu is displayed, and then press the F1 key (DONE).



The first testing menu is displayed. And follow the instructions on the menu.

LEVER SENSOR TEST LIFT UP/LOWER SET LEVER 1 CONTINUE 2 CANCEL

Press the F1 key to continue to the next test, after you check the CAM lever sensor.

(8) The testing items are shown below.

1	Cam lever sensor	2	Home sensor	3	Push roller sensor	4	Rear media sensor
5	Font media sensor	6	X motor signal	7	Y motor signal	8	Tool height signal
9	[1] key	10	[2] key	11	[3] key	12	[4] key
13	Right arrow key	14	Left arrow key	15	Up arrow key	16	Down arrow key
17	ENTER key	18	COND/TEST key	19	ORIGIN key	20	FAST key
21	SIMPLE key	22	COPY key	23	PAUSE/MENU key		

9 TROUBLESHOOTING

9.1 The Plotter is Turned On But Doesn't Operate

Symptom	Verification item	Solution
The control panel's LED lamp does not light or the LCD does not display anything.	(1) Is the plotter being supplied with power?	No.....Check that the power cord is securely connected to the plotter's AC line inlet. Yes.....Verify item (2).
	(2) Is the FPC908202 flexible cable securely connected to the main board and the control key board?	No.....Connect the flexible cable securely. Yes.....Verify item (3).
	(3) Is the FPC908202 flexible cable broken?	No.....Verify item (4). Yes.....Replace the FPC908202 flexible cable.
	(4) Is the AC line electrical output correct?	No.....Change the AC line. Yes.....Verify item (5).
	(5) Does the power supply unit have a 5 V output?	No.....Replace the power supply unit. Yes.....Replace the main board.

9.2 Media Loading Operations

Symptom	Verification item	Solution
The media drops to the front of the plotter.	(1) Is the front edge of the media curled?	Yes....Replace the media. No.....Verify item (2).
	(2) Is the front media sensor dirty?	Yes....Clean the front media sensor. No.....Verify item (3).
	(3) Is the front media sensor cable securely connected to the main board and the sensor?	Yes....Replace the front media sensor. No.....Connect the cable securely.
The media drops to the rear of the plotter.	(1) Is the rear edge of the media curled?	Yes....Replace the media. No.....Verify item (2).
	(2) Is the rear media sensor dirty?	Yes....Clean the rear media sensor. No.....Verify item (3).
	(3) Is the rear media sensor cable securely connected to the main board and the sensor?	Yes....Replace the rear media sensor. No.....Connect the cable securely.
The plotter displays "LOAD MEDIA!" when media has been loaded.	(1) Does the cam sensor plate block the cam sensor?	Yes....Check the cam sensor plate and attach it at the correct position. No.....Verify item (2).
	(2) Is the cam sensor cable securely connected to the main board and the sensor?	No.....Connect the cable securely. Yes....Replace the cam sensor board.
The plotter can't recognize the Y direction of the media size.	(1) Is there any dust on the push roller sensor?	Yes....Clean the push roller sensor. No.....Verify item (2).
	(2) Is the push roller sensor flexible cable securely connected to each connector?	Yes....Replace the push roller sensor. No.....Connect the cable securely.
The plotter can't recognize the X direction of the media size.	(1) Is there any dust on the front media sensor and the rear media sensor?	Yes....Clean the front media sensor and the rear media sensor. No.....Verify item (2).
	(2) Are the front media sensor and the rear media sensor cables securely connected to each connector?	No.....Connect the cables securely. Yes....Replace the sensor(s).
The media is fed at an angle.	(1) Are the push rollers worn down?	Yes....Replace the push roller(s). No.....Verify item (2).
	(2) Is there anything on the drive roller?	Yes....Clean the drive roller with a brush. No.....Verify item (3).
	(3) Do the push rollers have the correct pressure?	No.....Replace the push roller spring(s). Yes....Verify item (4).
	(4) Is the drive roller worn out?	Yes....Replace the drive roller. No.....Verify item (5).
	(5) Is the drive roller attached correctly?	Yes....Replace the bearing of the drive roller. No.....Attach the drive roller correctly.

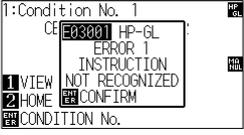
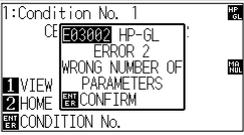
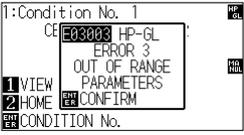
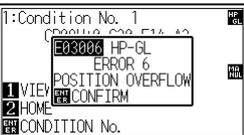
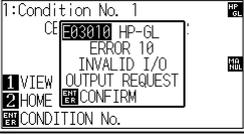
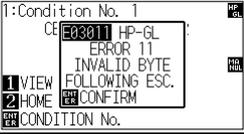
9.3 Cutting Operations

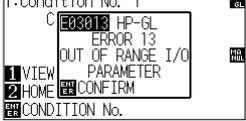
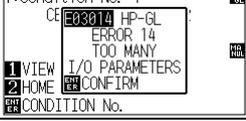
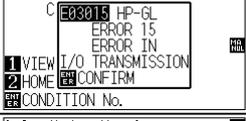
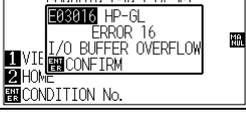
Symptom	Verification item	Solution
The cut line is crooked.	(1) Does the blade turn well in the blade holder?	No.....Replace the blade holder. Yes....Verify item (2).
	(2) Do the X and Y drive motor belts have the correct tension?	No.....Adjust the tension. Yes....Verify item (3).
	(3) Is the Y belt attached correctly?	No.....Attach it correctly. Yes....Verify item (4).
	(4) Is the pen block attached correctly?	No.....Attach it correctly. Yes....Verify item (5).
	(5) Is the pen arm shaky?	Yes....Adjust the pen arm shaft slider tension.
The blade skips and does not completely cut lines that should be solid.	(1) The blade is extended too far.	Adjust the blade length.
	(2) The cutting SPEED is too high.	Adjust the SPEED setting.
	(3) Verify the pen force.	Adjust the pen force.
	(4) Verify the pen block height.	Adjust the pen block height.

9.4 Error Messages in GP-GL Command Mode

Error Code	LCD Display	Cause	Solution
E02001	<p>The LCD display shows: 1:Condition No. 1, GP-GL ERROR 1, COMMAND ERROR!, and a menu with options: 1 VIEW, 2 HOME, and CONFIRM. The error code E02001 is highlighted in red.</p>	The plotter received an unrecognizable	Press the [ENTER] key.
		Noise came in when the computer was turned on.	Configure to drive the plotter from the menu of the software.
		The software configuration regarding the output device has been changed.	Reset the interface settings of the plotter.
		The plotter's interface conditions have changed.	Reset the interface settings of the plotter.
E02004	<p>The LCD display shows: 1:Condition No. 1, GP-GL ERROR 4, PARAMETER OVERFLOW!, and a menu with options: 1 VIEW, 2 HOME, and CONFIRM. The error code E02004 is highlighted in red.</p>	A command was received containing numeric parameters that exceed that command's permissible range.	Configure to drive the plotter from the menu of the software.
		The software configuration regarding the output device has been changed.	Reset the interface settings of the software.
		The plotter's interface conditions have changed.	Reset the interface settings of the plotter.
E02005	<p>The LCD display shows: 1:Condition No. 1, GP-GL ERROR 5, I/O ERROR!, and a menu with options: 1 VIEW, 2 HOME, and CONFIRM. The error code E02005 is highlighted in red.</p>	An error occurred in the receipt of data within the interface.	Configure to drive the plotter from the menu of the software.
		The software configuration regarding the output device has been changed.	Reset the interface settings of the software.
		The plotter's interface conditions have changed.	Reset the interface settings of the plotter.
E02006	<p>The LCD display shows: 1:Condition No. 1, GP-GL ERROR 6, OFF SCALE ERROR!, and a menu with options: 1 VIEW, 2 HOME, and CONFIRM. The error code E02006 is highlighted in red.</p>	The data out of cutting range has been received.	Check the data.
			Check the size of media and the cutting range.
			Check the magnification setting.
			Check the step size settings.

9.5 Error Messages in HP-GL Command Mode

Error Code	LCD Display	Cause	Solution
E03001		An unrecognizable instruction was executed. Execute a recognizable command.	Did the plotter receive an unrecognizable command? Send correct data to plotter. Is there any noise on the line? Check the interface cable or move the plotter to another location. Has the correct model name been set for the plotter? Set the correct model name. Configure your software application menu to permit Graphtec plotter control. Re-specify the software application's interface conditions.
E03002		A command was executed with the wrong number of parameters.	Execute the command with the correct number of parameters. Configure your software application menu to permit Graphtec plotter control. Re-specify the software application's interface conditions. Set the correct model name if it was incorrect.
E03003		A command containing an unusable parameter was specified.	Execute the command with its parameters specified within their permissible ranges. Configure your software application menu to permit Graphtec plotter control. Re-specify the software application's interface conditions. Set the correct model name if it was incorrect.
E03005		An unrecognizable character set was specified.	Specify a recognizable character set. Configure your software application menu to permit Graphtec plotter control. Re-specify the software application's interface conditions. Set the correct model name if it was incorrect.
E03006		The data being input exceeds the capacity of the plotter's	Execute coordinates within the cutting area.
E03007		Coordinates of command specified out of cutting area.	Adjust the buffer size.
E03010		Other output command was executed while executing an output command.	Check the program.
E03011		An invalid byte was received after ESC code.	Check the program.

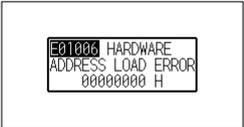
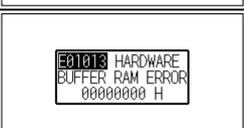
E03012		Invalid byte was received within device control command.	Check the program.
E03013		A parameter outside of the permissible range was specified in the I/O related command.	Check the program.
E03014		Too many parameters in the I/O related command.	Check the program.
E03015		Framing error, parity error, or overrun error has occurred.	Set the RS-232C transmission condition.
E03016		Interface buffer memory has overflowed.	Set the RS-232C transmission condition.

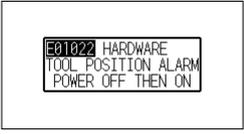
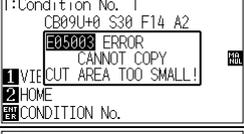
9.6 ARMS Error Messages

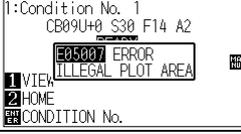
Error Code	LCD Display	Cause	Solution
E04001		Tilt to adjust with AXIS ALIGNMENT is too large.	Reload the media.
E04002		It is over the setting range of the distance adjust.	Reset to smaller value.
E04003		Failed to adjust the sensor level.	This media cannot be used.
E04004		It is over the setting range of the distance adjust.	Reset to smaller value.
E04005		Could not scan the registration marks.	Check the registration scan position.
E04006		Amount of data has exceeded the I/O buffer size for the segment area registration mark.	Decrease the data size.
E04007		Test pattern plotting position is not within the plotting area for sensor position adjustment.	Move the media toward center and plot the test pattern.
E04008		Media end was detected while detecting the registration mark.	Check the media. Check the print position of the registration mark.
E04009		It has exceeded detection area while detecting the registration mark.	Check the media. Check the print position of the registration mark.
E04010		It has exceeded detection area while detecting the registration mark.	Check the media. Check the print position of the registration mark.
E04011		It has exceeded detection area while detecting the registration mark.	Check the media. Check the print position of the registration mark.
E04012		It has exceeded detection area while detecting the registration mark.	Check the media. Check the print position of the registration mark.
E04013		It has exceeded detection area while detecting the registration mark.	Check the media. Check the print position of the registration mark.

E04014	<p>1:Condition No. 1 C0809U+0 S30 F14 A2</p> <p>E04014 ARMS MARK SCAN ERROR! EXCEED CUTTING AREA DURING +Y DETECTION</p> <p>VIEW HOME CONDITION No.</p>	It has exceeded detection area while detecting the registration mark.	Check the media. Check the print position of the registration mark.
E04015	<p>1:Condition No. 1 C0809U+0 S30 F14 A2</p> <p>E04015 ARMS MARK SCAN ERROR! NOT ENOUGH LENGTH IN -Y DIRECTION</p> <p>VIEW HOME CONDITION No.</p>	It has exceeded detection area while detecting the registration mark.	Check the media. Check the print position of the registration mark.
E04016	<p>1:Condition No. 1 C0809U+0 S30 F14 A2</p> <p>E04016 ARMS MARK SCAN ERROR! EXCEED CUTTING AREA DURING -Y DETECTION</p> <p>VIEW HOME CONDITION No.</p>	It has exceeded detection area while detecting the registration mark.	Check the media. Check the print position of the registration mark.
E04017	<p>1:Condition No. 1 C0809U+0 S30 F14 A2</p> <p>E04017 ARMS MARK SCAN ERROR! MOVING DESTINATION IS OUT OF AREA</p> <p>VIEW HOME CONDITION No.</p>	It has exceeded detection area while detecting the registration mark.	Check the media. Check the print position of the registration mark.
E04018	<p>1:Condition No. 1 C0809U+0 S30 F14 A2</p> <p>E04018 ARMS MARK SCAN ERROR! MEDIA SET LEVER IS LOWERD JOB IS CANCELED</p> <p>VIEW HOME CONDITION No.</p>	Media set lever was lowered.	Reload the media and try again.
E04019	<p>1:Condition No. 1 C0809U+0 S30 F14 A2</p> <p>E04019 ARMS CANCEL IS SELECTED AT MOVE DISTANCE</p> <p>VIEW HOME CONDITION No.</p>	There was cancel operation by the user.	Redo the process.
E04020	<p>1:Condition No. 1 C0809U+0 S30 F14 A2</p> <p>E04020 ARMS MARK SCAN ERROR! DETECTION ERROR JOB IS CANCELED</p> <p>VIEW HOME CONDITION No.</p>	There is a defect in the detection settings value.	Check the settings value.
E04021	<p>1:Condition No. 1 C0809U+0 S30 F14 A2</p> <p>E04021 ARMS MARK SCAN ERROR! MARK IS NOT FOUND IN EFFECTIVE AREA</p> <p>VIEW HOME CONDITION No.</p>	Registration mark was not detected in the auto detection area.	Check the media. Check the print position of the registration mark.
E04022	<p>1:Condition No. 1 C0809U+0 S30 F14 A2</p> <p>E04022 ARMS JOB IS CANCELED</p> <p>VIEW HOME CONDITION No.</p>	There was cancel operation by the user.	Redo the process.
E04023	<p>1:Condition No. 1 C0809U+0 S30 F14 A2</p> <p>E04023 ARMS MARK SCAN ERROR! MARK WAS NOT FOUND</p> <p>VIEW HOME CONDITION No.</p>	Registration mark was not detected.	Redo the sensor level adjustment. Change the color of the registration mark. Check the media. Check the print position of the registration mark.
E04024	<p>1:Condition No. 1 C0809U+0 S30 F14 A2</p> <p>E04024 ARMS MARK SCAN ERROR! MARK SENSE LEVEL WAS NOT ENOUGH</p> <p>VIEW HOME CONDITION No.</p>	Registration mark was not detected.	Redo the sensor level adjustment. Change the color of the registration mark. Check the media. Check the print position of the registration mark.
E04025	<p>1:Condition No. 1 C0809U+0 S30 F14 A2</p> <p>E04025 ARMS MARK SCAN ERROR! MARK WAS NOT FOUND IN HIGH SPEED MODE</p> <p>VIEW HOME CONDITION No.</p>	Registration mark was not detected.	Redo the sensor level adjustment. Change the color of the registration mark. Check the media. Check the print position of the registration mark.

9.7 Other Error Messages

Error Code	LCD Display	Cause	Solution
E01001 to E01005		The main board is defective.	Replace the main board.
E01006		The main board is defective.	Replace the main board.
E01007		The main board is defective.	Replace the main board.
E01008		The main board is defective.	Replace the main board.
E01009		The main board is defective.	Replace the main board.
E01010		The main board is defective.	Replace the main board.
E01011		The main board is defective.	Replace the main board.
E01012		The main board is defective.	Replace the main board.
E01013		The main board is defective.	Replace the main board.
E01014		The main board is defective. or The Motor is defective.	Replace the main board. or Replace the motor.
E01015		The main board is defective. or The Motor is defective. or The pen block is defective.	Replace the main board. or Replace the motor. or Replace the pen block.

<p>E01017</p>		<p>There is heavy load on the media moving direction. or The media is too heavy to feed. or The media stopper is not released. or The cutting speed is too fast. or The X motor is defective. or The main board is defective.</p>	<p>Move the object disturbing the operation, and turn on the plotter after turning it off once. or Do not use heavy media. or Use the pre-feed function. or Release the media stopper. or Reduce the cutting speed. or Replace the X motor. or Replace the main board.</p>
<p>E01019</p>		<p>Load on the Y motor was too large. or The blade length is too long. or The Y motor is defective. or The main board is defective.</p>	<p>Move the object disturbing the operation, and turn on the plotter after turning it off once. Do not use heard media. or Adjust the blade length. or Replace the Y motor. or Replace the main board.</p>
<p>E01021</p>		<p>Load on the motor was too large. or The blade length is too long. or The X or Y motor is defective. or The main board is defective.</p>	<p>Move the object disturbing the operation, and turn on the plotter after turning it off once. Do not use heavy media or heard media. or Adjust the blade length. or Replace the X or Y motor. or Replace the main board.</p>
<p>E01022</p>		<p>There was a heavy load on the up and down function of the tool carriage. The pen block is defective. or The main board is defective.</p>	<p>Clear any obstruction in the up and down function of the tool carriage and turn the power back on. or Replace the pen block. or Replace the main board.</p>
<p>E05001</p>		<p>Data lager than the buffer size can not be copied</p>	<p>Perform normal cutting by sending the data mode.</p>
<p>E05002</p>		<p>There is no data to copy.</p>	<p>Perform normal cutting by sending the data then use the copy mode.</p>
<p>E05003</p>		<p>Media valid area to copy is too small.</p>	<p>Use larger media. Confirm the copy starting position.</p>
<p>E05004</p>		<p>The push roller is not on the grit roller.</p>	<p>Set the push roller on the grit roller.</p>

E05006		Distance between the bottom left and top right of the AREA setting is less than 10 mm.	Perform the AREA setting again.
E05007		Test pattern for the TOOL OFFSET ADJ. cannot start plotting because the start position is at the edge of the media.	Set the start position inside the media.

9.8 Caution Message

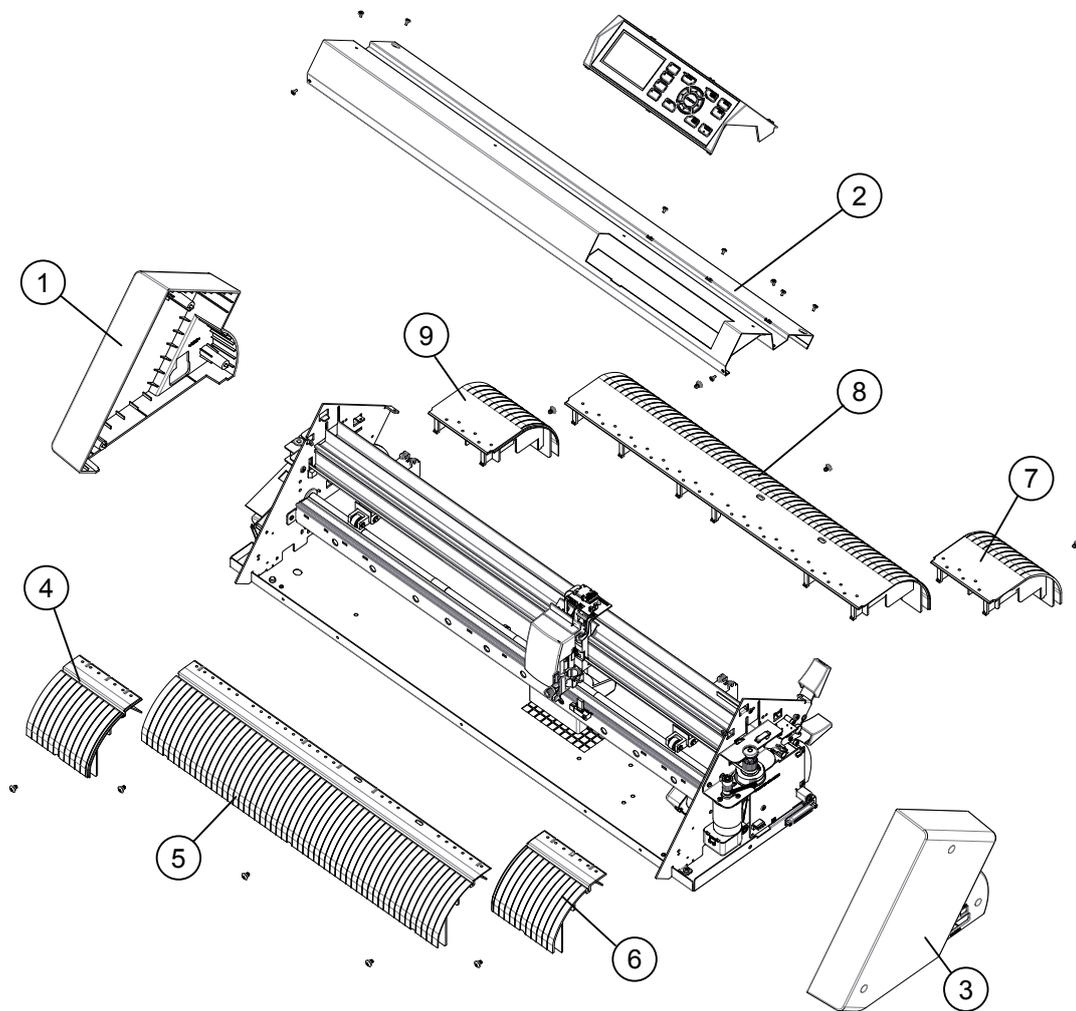
Error Code	LCD Display	Description
W06001		When the command set is auto, the DUMP mode is not available.
W06002		When panel cutting is on, copy and origin setting cannot be changed.

10 PARTS LIST

10.1 Outer Casing CE6000-40/60

No.	Part No.	Description	Q'ty	Remarks	Rank
1	621584014	Side Cover, L	1		C
	621574912	Label, Rating, CE6000-40	1	Put the label to the side cover L.	C
	621584912	Label, Rating, CE6000-60	1		C
	621640010	Label, Rating, 9e6000	1	for 9e6000	C
2	792600715	Center Cover, 40	1		C
	792600716	Center Cover, 60	1		C
3	621584005	Side Cover, R	1		C
4	621581172	Front Guide, L2, 60	1	CE6000-60 only	C
5	621571102	Front Guide, C2, 40/60	1		C
6	621581162	Front Guide, R2, 60	4	CE6000-60 only	C
7	621581182	Rear Guide, R2, 60	1	CE6000-60 only	C
8	621571113	Rear Guide, C2, 40/60	1		C
9	621581192	Rear Guide, L2, 60	1	CE6000-60 only	C

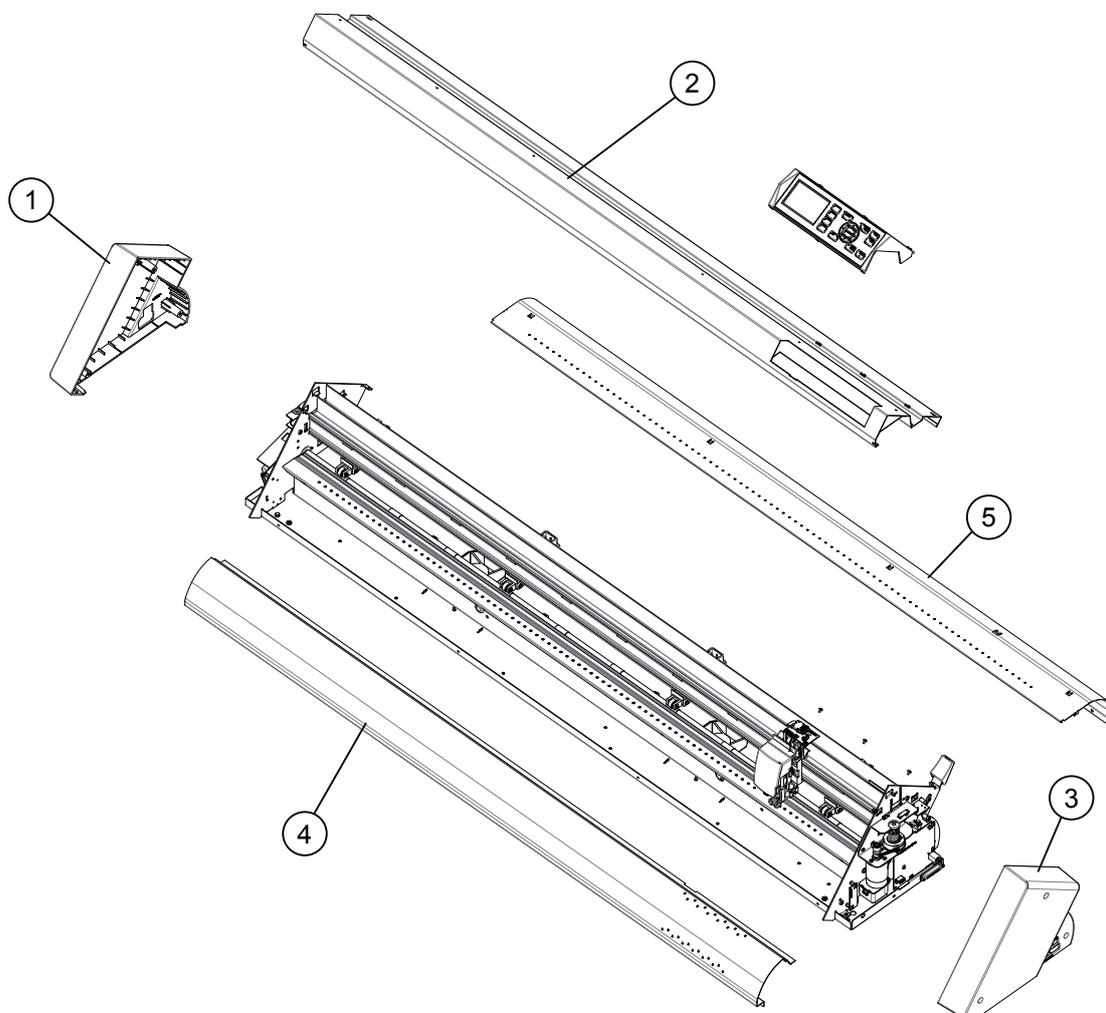
Outer Casing CE6000-40/60



10.2 Outer Casing CE6000-120/120AMO

No.	Part No.	Description	Q'ty	Remarks	Rank
1	621584014	Side Cover, L	1		C
	621594912	Label, Rating, CE6000-120	1	Put the label to the side cover L.	C
2	792600717	Center Cover, 120	1		C
3	621584005	Side Cover, R	1		C
4	792600714	Front Guide, CE6000-120	1		C
5	621591232	Rear Guide, CE6000-120	1		C

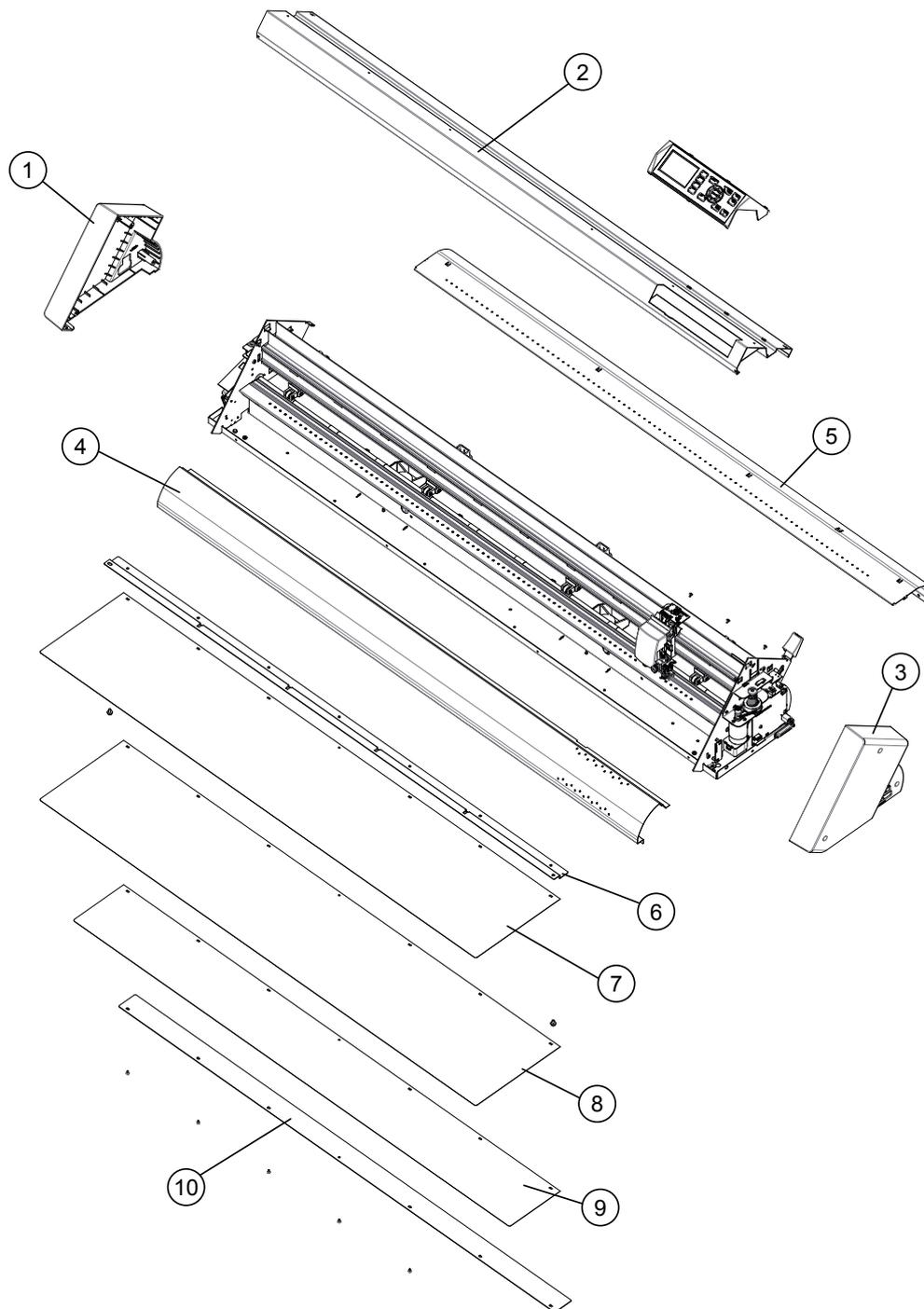
Outer Casing 120/120AMO



10.3 Outer Casing CE6000-120AP

No.	Part No.	Description	Q'ty	Remarks	Rank
1	621584014	Side Cover, L	1		C
	621604000	Label, Rating, CE6000-120AP	1	Put the label to the side cover L.	C
2	792600717	Center Cover, 120	1		C
3	621584005	Side Cover, R	1		C
4	792600714	Front Guide, CE6000-120	1		C
5	621591232	Rear Guide, CE6000-120	1		C
6	621600301	Guide Sheet Bracket	1		C
7	621600351	Guide Sheet 3	1		C
8	621600341	Guide Sheet 2			C
9	621600331	Guide Sheet 1	1		C
10	621600311	Guide Sheet Plate	1		C

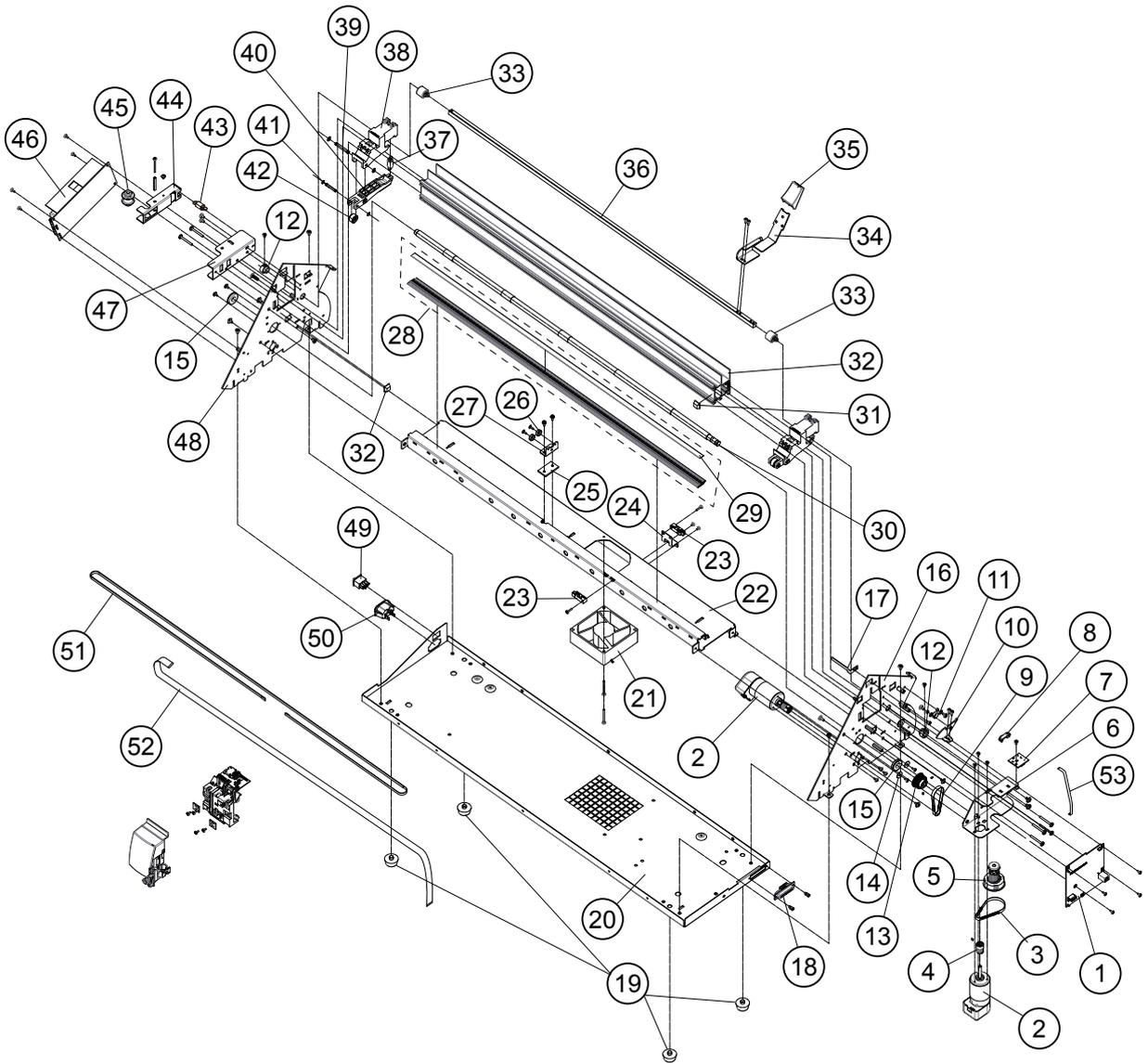
Outer Casing CE6000-120AP



10.4 Main Frame CE6000-40/60

No.	Part No.	Description	Q'ty	Remarks	Rank
1	792600700	Main Board, CE6000	1		A
	792600729	Main Board, 9e6000	1		A
2	682157211	Motor, DMN37JE-X01	2	X and Y motor	A
3	378008421	Belt, Y drive belt, 60S2M168G	1		B
4	621582051	Gear, Motor, PULLEY-S2M-20	2	X and Y motor	C
5	621583102	Pulley, Y drive	1		B
6	621583193	Bracket, Y Motor	1		D
7	792600704	Cam Sensor Board, CE6000	1		A
8	361102008	Clamper, RFC-16V0	1		D
9	378008121	Belt, X drive belt, 60S2M162G	1		B
10	621580521	Cam Dog	1		C
11	621580570	Spring, Cam Lever	1		C
12	621582171	Cam Shaft Holder	2		C
13	621582042	Pulley, X Drive, S2M-41	1		A
14	621582200	BR Fixing Plate	2		C
15	621582090	Bearing, Drive Roller, 6900ZZNRJECE	2		A
16	621581004	Right Side Plate	1		D
17	621583054	Y Home Dog	1		D
18	691450141	RS-232C Connector Cable, CA90821	1		C
19	363126121	Foot, TM-127-4	4		C
20	621570107	Chassis, CE6000-40	1		D
	621580106	Chassis, CE6000-60	1		D
21	682157190	Fan, 9A0924G404	1		A
22	621571012	Flame, CE6000-40	1		D
	621581021	Flame, CE6000-60	1		D
23	561080035	Sensor, PS117EL1	2		A
24	621586102	Bracket, Paper Sensor	1		D
25	621582381	Rubber Mat, Support Roller	1		C
26	621582400	Bearing, Drive Roller Holder, 12HF408	2		A
27	621582311	Support Roller Bracket	1		D
28	621571030	Cutting Mat Base Assy 40, CE6000-40	1	Cutting Mat with Base	A
	621581070	Cutting Mat Base Assy 60, CE6000-60	1	Cutting Mat with Base	A
29	CE6-CM40-2	Cutting Mat 40, CE6000-40	1	Supply Parts	A
	CE6-CM60-2	Cutting Mat 60, CE6000-60	1	Supply Parts	A
30	621572102	Drive Roller Shaft, CE6000-40	1		A
	621582002	Drive Roller Shaft, CE6000-60	1		A
31	363013061	Rubber Stopper, Banpon TM166-18	2		C
32	621573090	Y Rail, CE6000-40	1		D
	621583090	Y Rail, CE6000-60	1		D
33	621582103	Cam, 60	2		C
34	621580593	Cam Lever	1		C
35	621580581	Cap, Cam Lever	1		C
36	621570502	Cam Shaft, CE6000-40	1		C
	621580512	Cam Shaft, CE6000-60	1		C
37	621582280	Spring, DE-645	2		C
38	792600720	Pinch Roller Arm Base	2		B
39	621112120	Roller Shaft 1	2		C
40	792600719	Push Roller Arm	2		B
41	092002041	Push Roller Shaft	2		C
42	621352000	Push Roller	2		A
43	621583320	Spring, Y Belt Tension CE6000-40/60	1		C
44	621583681	Bracket, Y Belt Tension Arm	1		D
45	621583232	Pulley, Y idler pulley	1		B
46	562500141	Power Supply, ZWS150B-24/FV	1		A
47	621583691	Bracket, Y Belt Tension	1		D
48	621581013	Left Side Plate	1		D
49	561630050	AC Power Switch, SDDJE30300	1		D
50	561500277	AC Inlet, AC-P10CF34	1		D
51	792600709	Belt, Y belt, 40, 50S2M613LWC	1	CE6000-40	B
	792600710	Belt, Y belt, 60, 50S2M841LWC	1	CE6000-60	B
52	692157376	Y Flexible Cable, FFC908207	1	CE6000-40	A
	692157337	Y Flexible Cable, FFC908203	1	CE6000-60	A
53	692157356	Flexible Cable, FFC908205, Cam Sensor	1		A

Main Frame CE6000-40/60

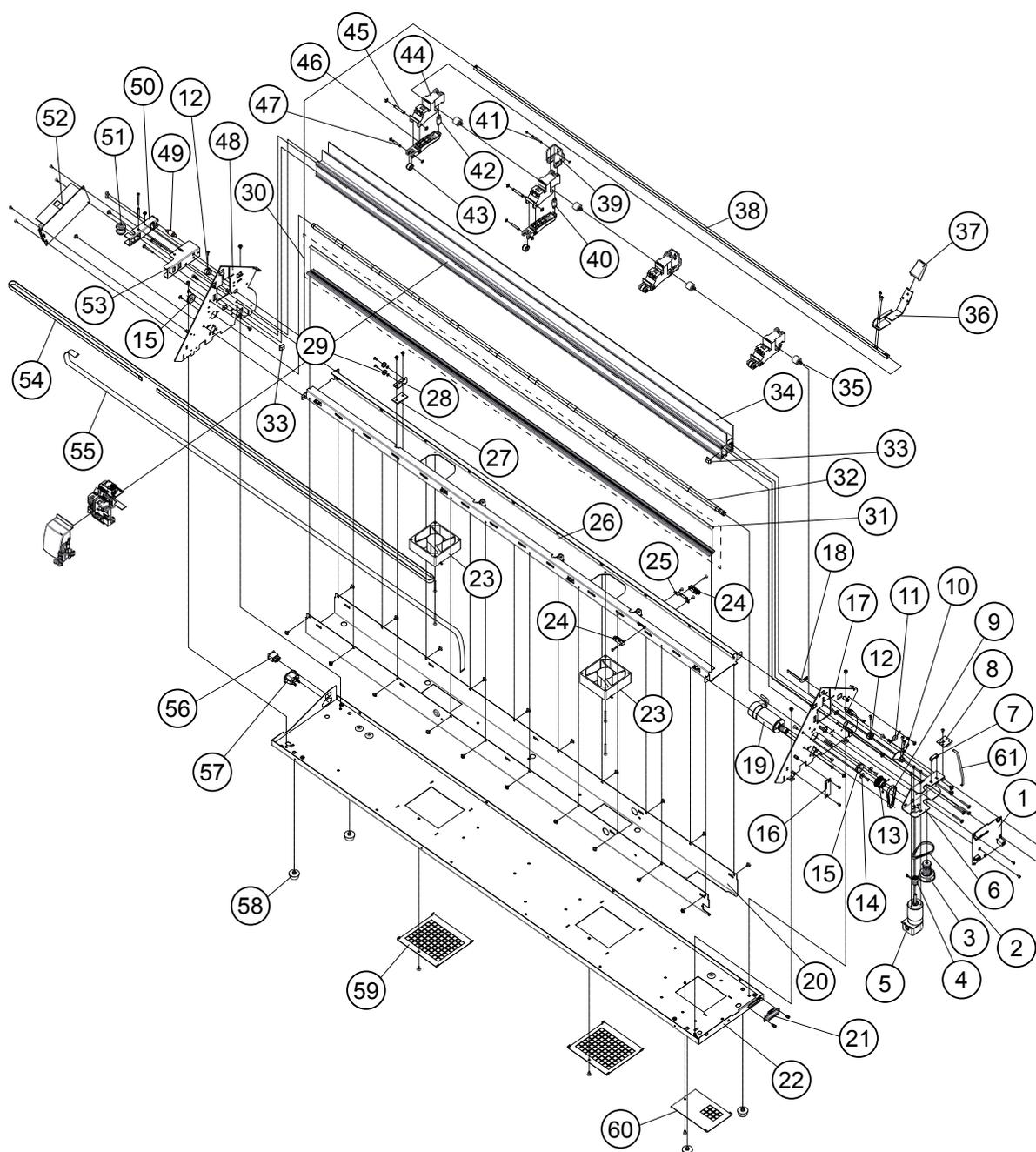


10.5 Main Frame CE6000-120/120AMO/120AP

No.	Part No.	Description	Q'ty	Remarks	Rank
1	792600700	Main Board, CE6000-120	1		A
	792600730	Main Board, CE6000-120AP			
2	378008421	Belt, Y drive belt, 60S2M168G	1		B
3	621583102	Pulley, Y drive	1		B
4	621582051	Gear, Motor, PULLEY-S2M-20	2	X and Y motor	C
5	682157211	Motor, DMN37JE-X01	1	Y motor	A
6	621583193	Bracket, Y Motor	1		D
7	361102008	Clamper, RFC-16V0	1		D
8	792600704	Cam Sensor Board, CE6000	1		A
9	378008121	Belt, X drive belt, 60S2M162G	1		B
10	621580521	Cam Dog	1		C
11	621580570	Spring, Cam Lever	1		C
12	621582171	Cam Shaft Holder	2		C
13	621582042	Pulley, X Drive, S2M-41	1		A
14	621582200	BR Fixing Plate	2		C
15	621582090	Bearing, Drive Roller, 6900ZZNJRJECE	2		A
16	792600707	Fan Relay Board, CE6000-120	1		A
17	621581004	Right Side Plate	1		D
18	621583054	Y Home Dog	1		D
	621600100	Y Home Dog AP	1	CE6000-120AP	D
19	682157220	Motor, UGFMED-B5LGRB2	1	X motor	A
20	621591090	Sub Flame, CE6000-120	1		D
21	691450141	RS-232C Connector Cable, CA90821	1		C
22	621591107	Chassis, CE6000-120	1		D
23	682157190	Fan, 9A0924G404	2		A
24	561080035	Sensor, PS117EL1	2		A
25	621586102	Bracket, Paper Sensor	1		D
26	621591081	Flame, CE6000-120	1		D
27	621582381	Rubber Mat, Support Roller	4		C
28	621582311	Support Roller Bracket	4		D
29	621582400	Bearing, Drive Roller Holder, 12HF408	8		A
30	621591060	Cutting Mat Base Assy 120, CE6000-120	1		A
31	CE6-CM120-2	Cutting Mat 120, CE6000-120	1	Supply Parts	A
32	621592102	Drive Roller Shaft, CE6000-120	1		A
33	363013061	Rubber Stopper, Banpon TM166-18	2		C
34	621593092	Y Rail, CE6000-120	1		D
35	621582103	Cam, 60	3	CE6000-120	C
	621582103	Cam, 60	4	CE6000-120AMO	C
	621582103	Cam, 60	5	CE6000-120AP	C
36	621580593	Cam Lever	1		C
37	621580581	Cap, Cam Lever	1		C
38	621590592	Cam Shaft, CE6000-120	1		C
39	621582261	Push Roller OFF Arm	1	CE6000-120	C
	621582261	Push Roller OFF Arm	2	CE6000-120AMO	C
	621582261	Push Roller OFF Arm	3	CE6000-120AP	C
40	621582290	Spring, DE-646, Center	1	CE6000-120	C
	621582290	Spring, DE-646, Center	2	CE6000-120AMO	C
	621582290	Spring, DE-646, Center	3	CE6000-120AP	C
41	621582271	Push Roller OFF Shaft	1	CE6000-120	C
	621582271	Push Roller OFF Shaft	2	CE6000-120AMO	C
	621582271	Push Roller OFF Shaft	3	CE6000-120AP	C
42	621582280	Spring, DE-645	2		C
43	621352000	Push Roller	3	CE6000-120	A
	621352000	Push Roller	4	CE6000-120AMO	A
	621352000	Push Roller	5	CE6000-120AP	A
44	792600720	Pinch Roller Arm Base	3	CE6000-120	B
	792600720	Pinch Roller Arm Base	4	CE6000-120AMO	B
	792600720	Pinch Roller Arm Base	5	CE6000-120AP	B
45	621112120	Roller Shaft 1	3	CE6000-120	C
	621112120	Roller Shaft 1	4	CE6000-120AMO	C
	621112120	Roller Shaft 1	5	CE6000-120AP	C
46	792600719	Push Roller Arm	3	CE6000-120	B
	792600719	Push Roller Arm	4	CE6000-120AMO	B
	792600719	Push Roller Arm	5	CE6000-120AP	B

No.	Part No.	Description	Q'ty	Remarks	Rank
47	092002041	Push Roller Shaft	3	CE6000-120	C
	092002041	Push Roller Shaft	4	CE6000-120AMO	C
	092002041	Push Roller Shaft	5	CE6000-120AP	C
48	621581013	Left Side Plate	1		D
49	621593300	Spring, Y Belt Tension CE6000-120	1		C
50	621583681	Bracket, Y Belt Tension Arm	1		D
51	621583232	Pulley, Y idler pulley	1		B
52	562500141	Power Supply, ZWS150B-24/FV	1		A
53	621583691	Bracket, Y Belt Tension	1		D
54	792600711	Belt, Y belt, 120, 100S2M-1483LW-C	1	CE6000-120	B
55	692157346	Y Flexible Cable, FFC908204	1	CE6000-120	A
56	561630050	AC Power Switch, SDDJE30300	1		D
57	561500277	AC Inlet, AC-P10CF34	1		D
58	363126121	Foot, TM-127-4	4		C
59	621591130	Fan Cover	2		D
60	621591120	Motor Cover	1		D
61	692157356	Flexible Cable, FFC908205, Cam Sensor	1		A

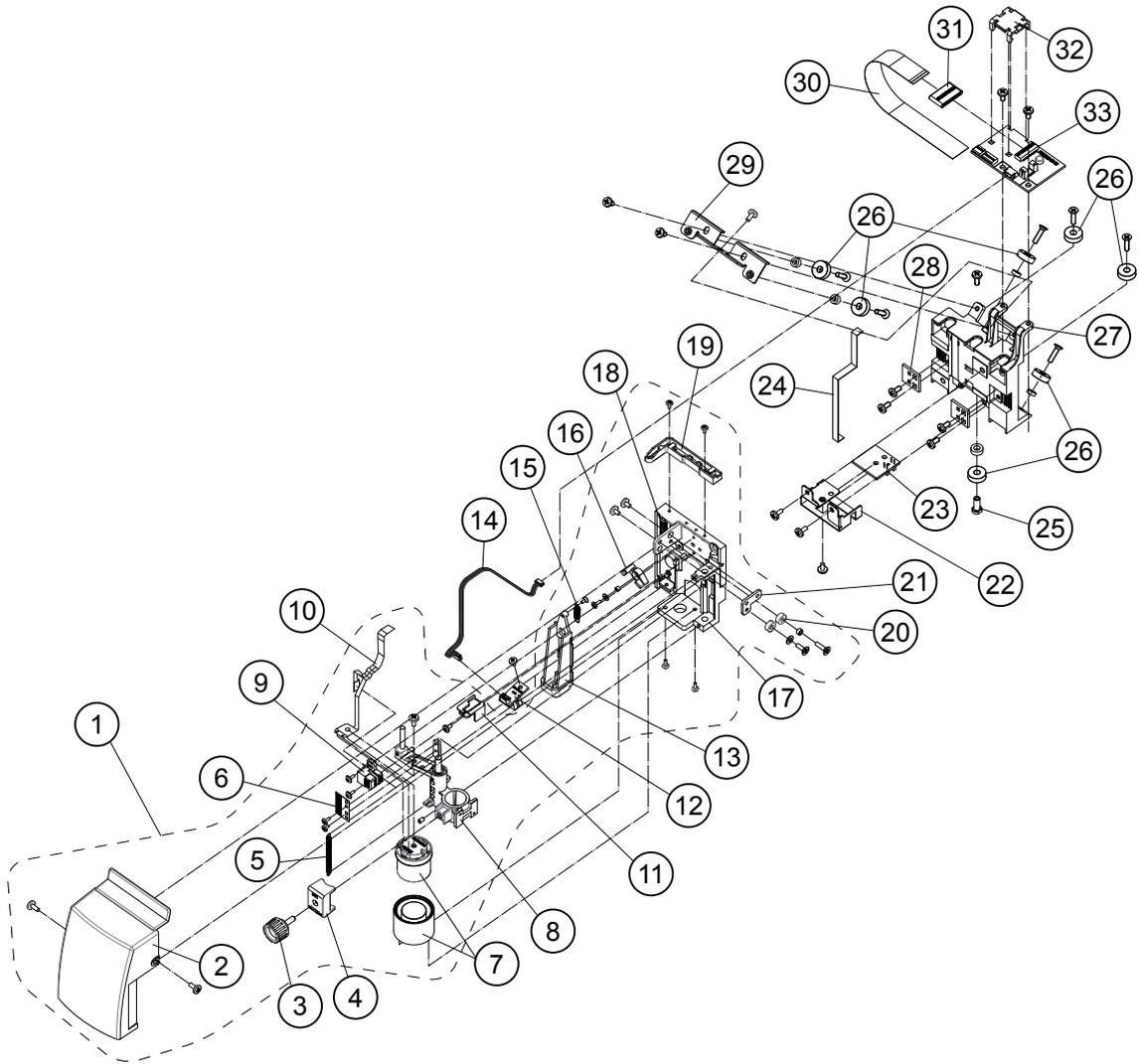
Main Frame CE6000-120/120AMO/120AP



10.6 Pen Block CE6000-40/60/120/120AMO

No.	Part No.	Description	Q'ty	Remarks	Rank
1	792600701	Pen Block Assembly STD, CE6000	1	Standard Model	A
	792600708	Pen Block Assembly U, CE6000	1	USA Model	A
2	621583520	Pen Block Cover	1		C
3	621353010	Thumb Screw L10	1		C
4	621583593	Cutter Pen Holder STD	1	Standard Model	C
	621583551	Cutter Pen Holder U	1	USA Model	C
5	380265311	Spring, Pen Arm, E-531	1		D
6	621583450	Encoder Strip	1		D
7	682157140	Moving Coil & York, PM805B	1		D
8	621583414	Pen Arm, U	1	USA Model	D
	621583483	Pen Arm, STD	1	Standard Model	D
	621583460	Guide Shaft	1		D
	621353000	Linear bearing & Shaft	1		D
9	561080005	Pen Encoder, HEDS-9720#P50	1		D
10	682157103	Pen Flexible Cable, FPC908210C	1		D
	561450062	Capacitor, RPEF11H104Z2P1A0	1		D
11	621583430	Wire Guide, RM Sensor	1		D
12	792600705	Registration Mark Sensor Board, CE6000	1		A
13	621583502	RM Sensor Hood	1		C
14	692157084	Cable, RM Sensor, CA908208D	1		C
15	380265181	Spring, E-518, RM Hood	1		D
16	621583511	Cam, RM Hood	1		D
17	621583472	MC Base	1		D
18	380265491	Spring, E-549, Cam, RM Hood	1		D
19	621583442	Cable Guide	1		D
20	621589350	Bearing, L-730ZZMTHP5	2		D
21	621583420	BR Plate	1		D
22	621583281	Push Roller Sensor Cover	1		D
23	792600703	Push Roller Sensor Board, CE6000	1		A
24	692157366	Flexible Cable, FFC908206F	1	Push Roller Sensor	C
25	621583302	Collar, Y Slider bottom Center	1		D
26	621583390	BR Roller, Y Slider, R1240KK1MTRP5	7		C
27	621583201	Y Slider, CE6000	1		C
28	621583331	Y Belt Stopper	2		D
29	621583291	Y Slider Tension Bracket	1		C
30	692157376	Y Flexible Cable, FFC908207	1	CE6000-40	A
	692157337	Y Flexible Cable, FFC908203	1	CE6000-60	A
	692157346	Y Flexible Cable, FFC908204	1	CE6000-120	A
31	562500142	Core, FSRC200120RTB00T	1		D
32	621583381	Clamper, FPC	1		D
33	792600702	Pen Relay Board, CE6000	1		A

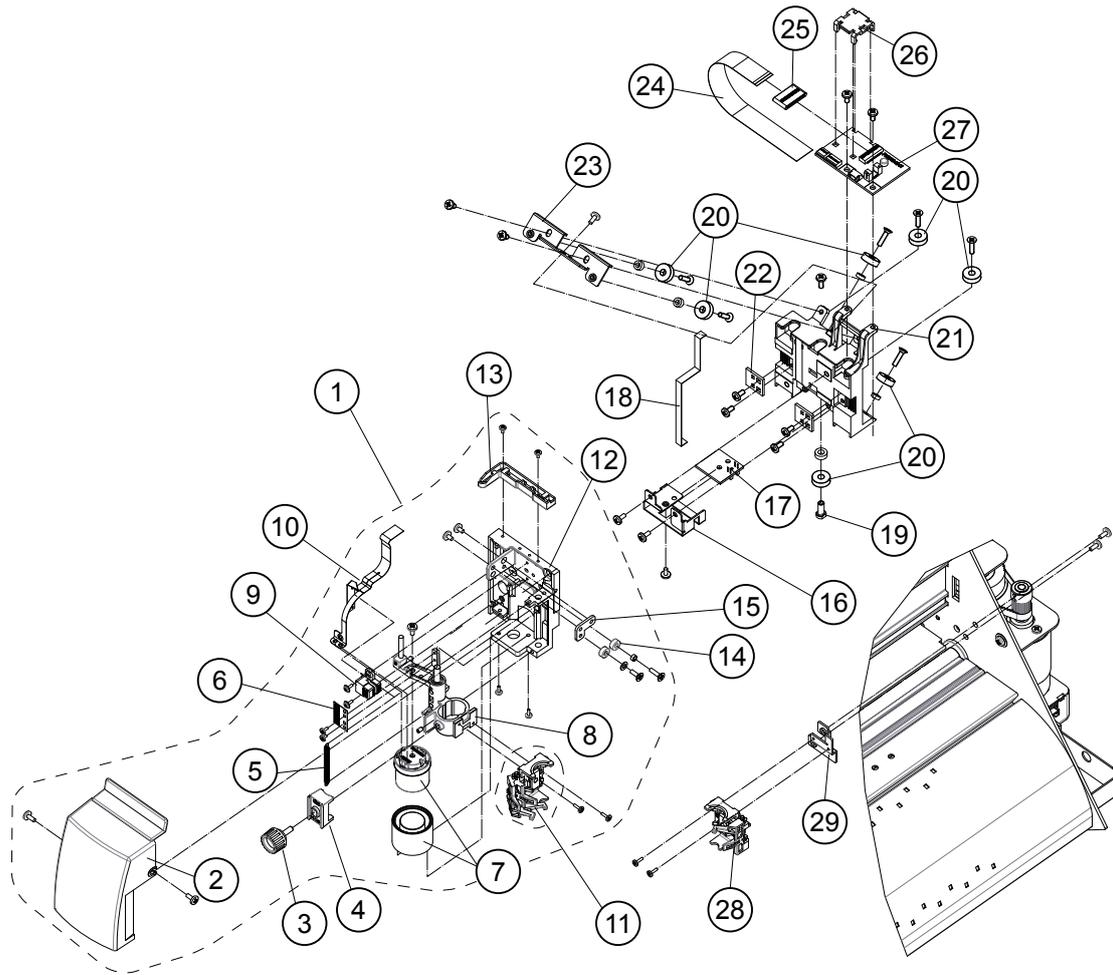
Pen Block CE6000-40/60/120/120AMO



10.7 Pen Block CE6000-120AP

No.	Part No.	Description	Q'ty	Remarks	Rank
1	792600726	Pen Block Assy, CE6000-120AP	1		A
2	621583520	Pen Block Cover	1		C
3	621353010	Thumb Screw L10	1		C
4	621603101	Cutter Pen Holder AP	1		C
5	380265311	Spring, Pen Arm, E-531	1		D
6	621583450	Encoder Strip	1		D
7	682157140	Moving Coil & York, PM805B	1		D
8	621603111	Pen Arm, AP	1		D
	621583460	Guide Shaft	1		D
	621353000	Linear bearing & Shaft	1		D
9	561080005	Pen Encoder, HEDS-9720#P50	1		D
10	682157103	Pen Flexible Cable, FPC908210C	1		D
	561450062	Capacitor, RPEF11H104Z2P1A0	1		D
11	772159880	2 Pen Holder Assy, CE6	1		A
12	621583472	MC Base	1		D
13	621583442	Cable Guide	1		D
14	621589350	Bearing, L-730ZZMTHP5	2		D
15	621583420	BR Plate	1		D
16	621583281	Push Roller Sensor Cover	1		D
17	792600703	Push Roller Sensor Board, CE6000	1		A
18	692157366	Flexible Cable, FFC908206F	1	Push Roller Sensor	C
19	621583302	Collar, Y Slider bottom Center	1		D
20	621583390	BR Roller, Y Slider, R1240KK1MTRP5	7		C
21	621583201	Y Slider, CE6000	1		C
22	621583331	Y Belt Stopper	2		D
23	621583291	Y Slider Tension Bracket	1		C
24	692157346	Y Flexible Cable, FFC908204	1	CE6000-120	A
25	562500142	Core, FSRC200120RTB00T	1		D
26	621583381	Clamper, FPC	1		D
27	792600702	Pen Relay Board, CE6000	1		A
28	772159890	2 Pen Station Assy, CE6	1		A
29	621583800	2 Pen Station Bracket	1		D

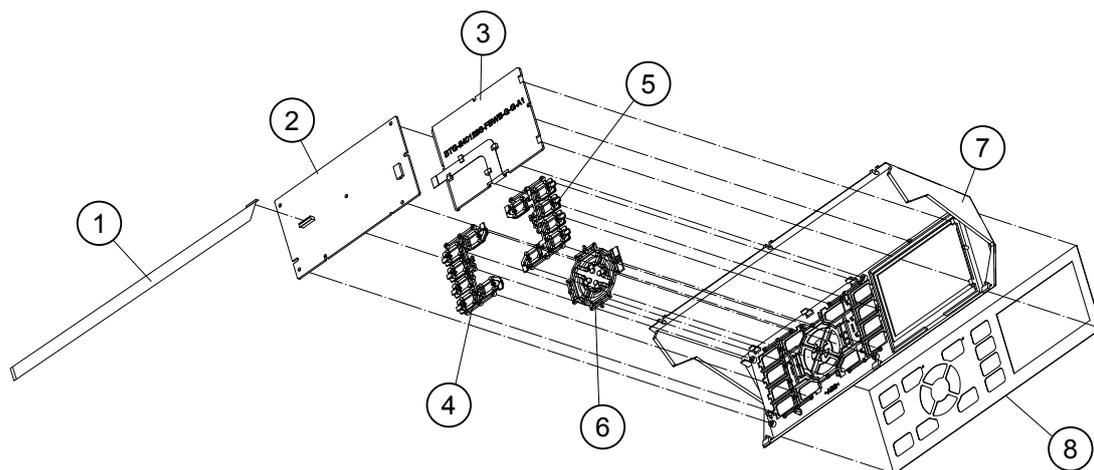
Pen Block CE6000-120AP



10.8 Control Panel

No.	Part No.	Description	Q'ty	Remarks	Rank
1	692157326	Flexible Cable, FFC908202, Control Panel	1		A
2	792600706	Control Panel Board, CE6000	1		A
3	682157130	LCD, BTG240128SFBWBGG, CE6000	1		A
4	621584236	Right Key, Control Panel	1		C
5	621584214	Function Key, Control Panel	1		C
6	621583450	Cursor Key, Control Panel	1		C
7	792600718	Control Panel Cover	1		C
	792600728	Control Panel Cover, 9e6000	1	For 9e6000	C
8	621584245	Control Panel Sheet	1		C

Control Panel



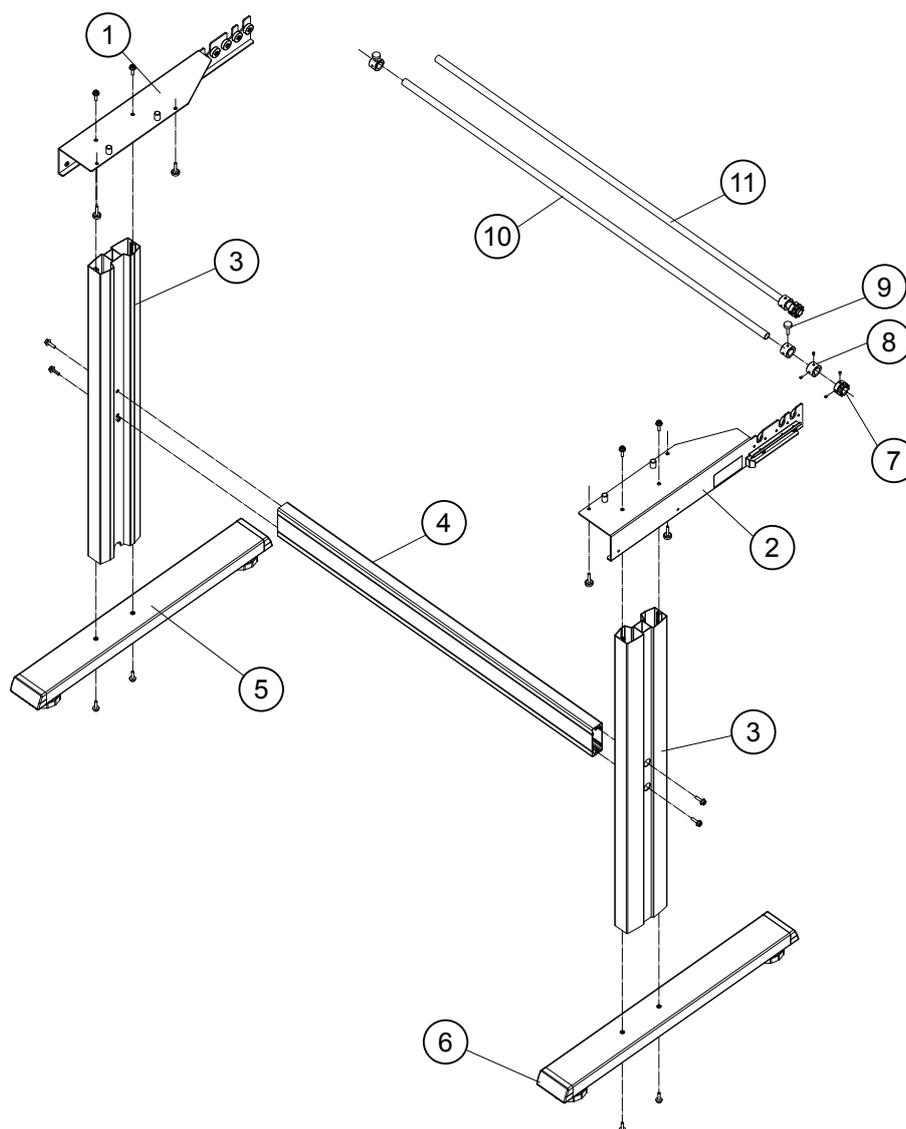
10.9 Wiring Harness

No.	Part No.	Description	Q'ty	Remarks	Rank
1	692157366	Flexible Cable, FFC908206F	1	Push Roller Sensor to Y Relay Board	C
2	692157084	Cable, RM Sensor, CA908208D	1	Registration Mark Sensor Board to Y Relay Board	C
3	692157326	Flexible Cable, FFC908202, Control Panel	1	Control Panel Board to Main Board	A
4	692157376	Y Flexible Cable, FFC908207	1	CE6000-40	A
5	692157337	Y Flexible Cable, FFC908203	1	CE6000-60	A
6	692157346	Y Flexible Cable, FFC908204	1	CE6000-120	A
7	692157356	Flexible Cable, FFC908205, Cam Sensor	1	Cam Sensor to Main Board	A
8	692157253	Y Motor Encoder Cable, CA908225C	1	Y Motor to Main	C
9	692157242	Y Motor Extension Cable, CA908224B	1	Y Motor to Main	C
10	692157233	X Motor Encoder Cable, CA908223C, 40/60	1	CE6000-40/60	C
11	692157123	X Motor Encoder Cable, CA908212C, 120	1	CE6000-120	C
12	692157222	Y Motor Extension Cable, CA908222B	1	X Motor to Main	C
13	692157118	Fan Relay Cable, CA908211H	1	Fan Relay Board to Main Board, CE6000-120	C
14	692157134	Fan Extension Cable, CA908213D	1	Fan Relay Board to Fan 2, CE6000-120	C
15	692157035	Paper Sensor Cable, CA908203E	1	CE6000-40/60	C
16	692157153	Paper Sensor Cable, CA908215C	1	CE6000-120	C
17	692157146	RS-232C Connector Cable, CA908214F	1		C
18	692157073	Cable, CA908207C	1	Power Supply to Main, CE6000-40	C
19	692157022	Cable, CA908202B	1	Power Supply to Main, CE6000-60	C
20	692157103	Cable, CA908210C	1	Power Supply to Main, CE6000-120	C
21	692157016	Cable, CA908201F	1	Power Switch to Power Supply	D
22	692157046	Cable, CA908204F	1	Inlet to Power Switch, Brown	D
23	692157063	Cable, CA908206C	1	Inlet to FG	D
24	692157056	Cable, CA908205F	1	Inlet to Power Switch, Blue	D

10.10 Stand CE6000-60, ST0100

No.	Part No.	Description	Q'ty	Remarks	Rank
1	792600721	Left Top Plate Assembly	1		C
2	792600722	Right Top Plate Assembly	1		C
3	621580212	Side Stay CE6000-60	2	Right and left	C
4	621580202	Center Bar, CE6000-60	1		C
5	621580222	Foot Assembly	2		C
6	621350140	End Cap, Foot	4		C
7	621580371	Stopper Collar	2		C
8	621580360	Collar-15	4		C
9		Yuria Screw, M4L10	2		C
10	621580351	Stocker Shaft	2		C
11	621580341	Stocker Shaft Assembly	2	Item 7, 8, 10	C
11		Set Screw, M4L5	4		D

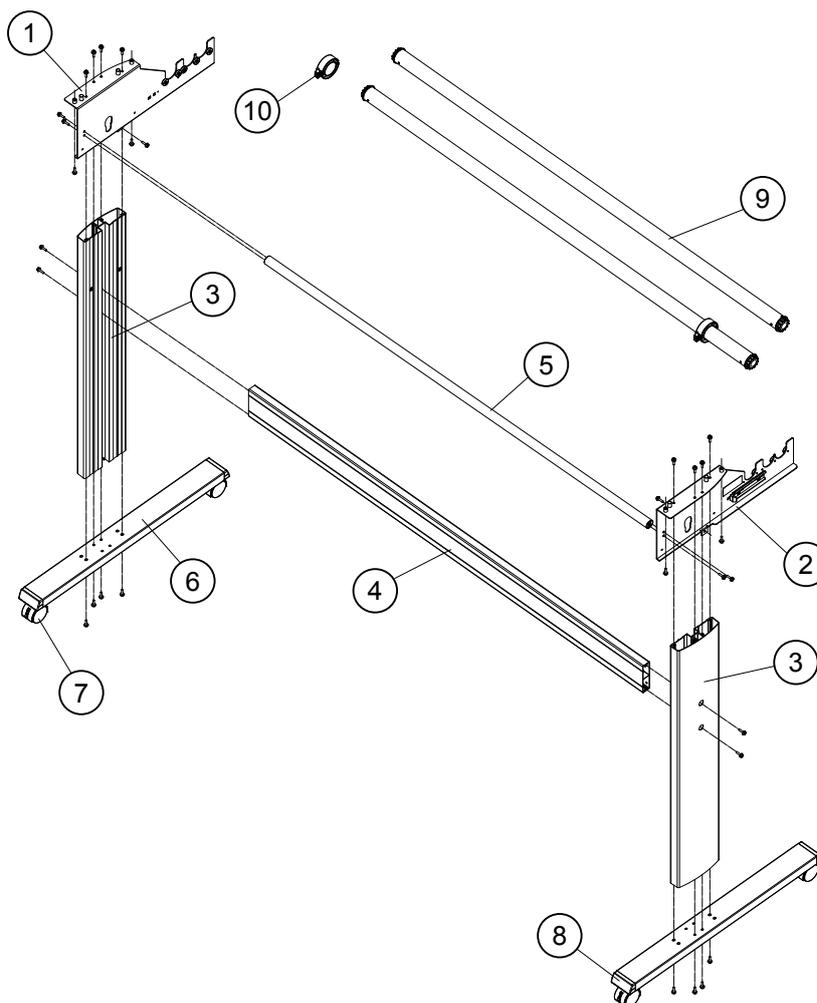
Stand CE6000-60, ST0100



10.11 Stand CE6000-120/120AMO, ST0101

No.	Part No.	Description	Q'ty	Remarks	Rank
1	792600723	Left Top Plate Assembly, CE6000-120	1		C
2	792600724	Right Top Plate Assembly, CE6000-120	1		C
3	621590210	Side Stay CE6000-120	2	Right and left	C
4	621590240	Center Bar, CE6000-120	1		C
5	621590372	Guide Bar, CE6000-120	1		C
6	621590220	Foot Assembly, CE6000-120	2		C
7		Caster	4		C
8	621590380	End Cap, Foot, 120	4		C
9	621590310	Roll Shaft Assembly, CE6000-120	2		C
10	792600725	Position Clamper Assembly, CE6000-120	2		C
		M5L16 Cap Screw	30		D

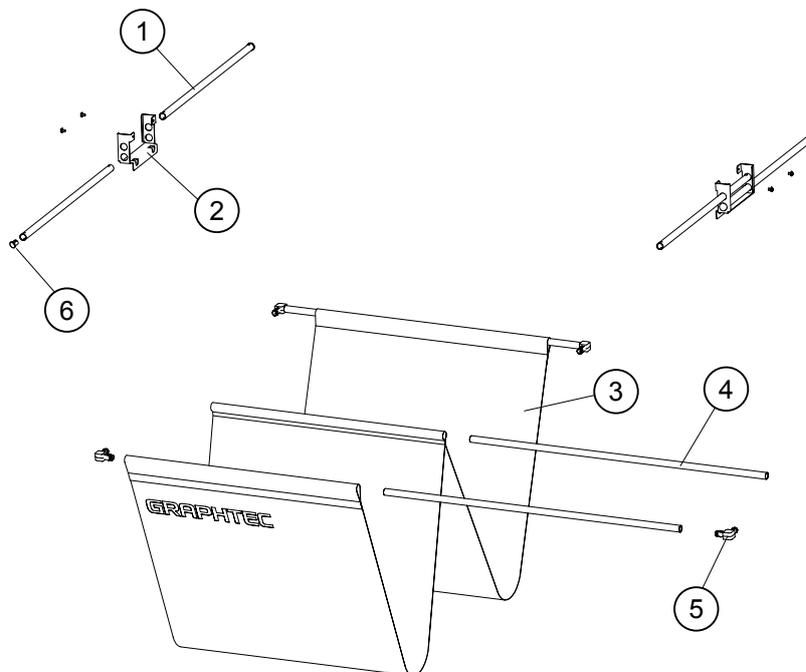
Stand CE6000-120/120AMO, ST0101



10.12 Option Basket CE6000-60, PG0100

No.	Part No.	Description	Q'ty	Remarks	Rank
1	621580620	Pipe, Basket Side, CE6000-60	4		C
2	621580610	Basket Bracket, CE6000-60	2		C
3	621580640	Basket Cloth, CE6000-60	1		C
4	621580630	Pipe, Basket Cloth, CE6000-60	3		C
5	621409261	Anchor Joint	4		C
6	621409231	End Cap, Basket	4		C
7		M5L6 TP Screw	4		D

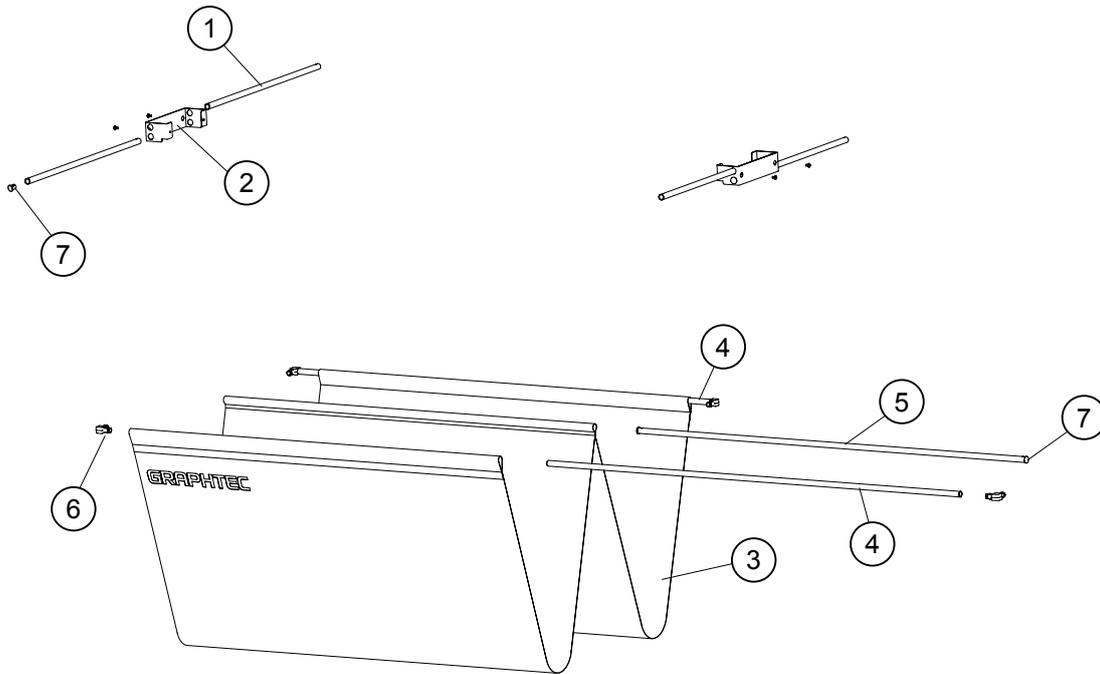
Option Basket CE6000-60, PG0100



10.13 Option Basket CE6000-120/120AMO, PG0101

No.	Part No.	Description	Q'ty	Remarks	Rank
1	621590620	Pipe, Basket Side, CE6000-120	4		C
2	621590610	Basket Bracket, CE6000-120	2		C
3	621590650	Basket Cloth, CE6000-120	1		C
4	621590630	Pipe FR, Basket Cloth, CE6000-120	2		C
5	621590640	Pipe Center, Basket Cloth, CE6000-120	1		C
6	621409261	Anchor Joint	4		C
7	621409231	End Cap, Basket	6		C
8		M5L6 TP Screw	4		D

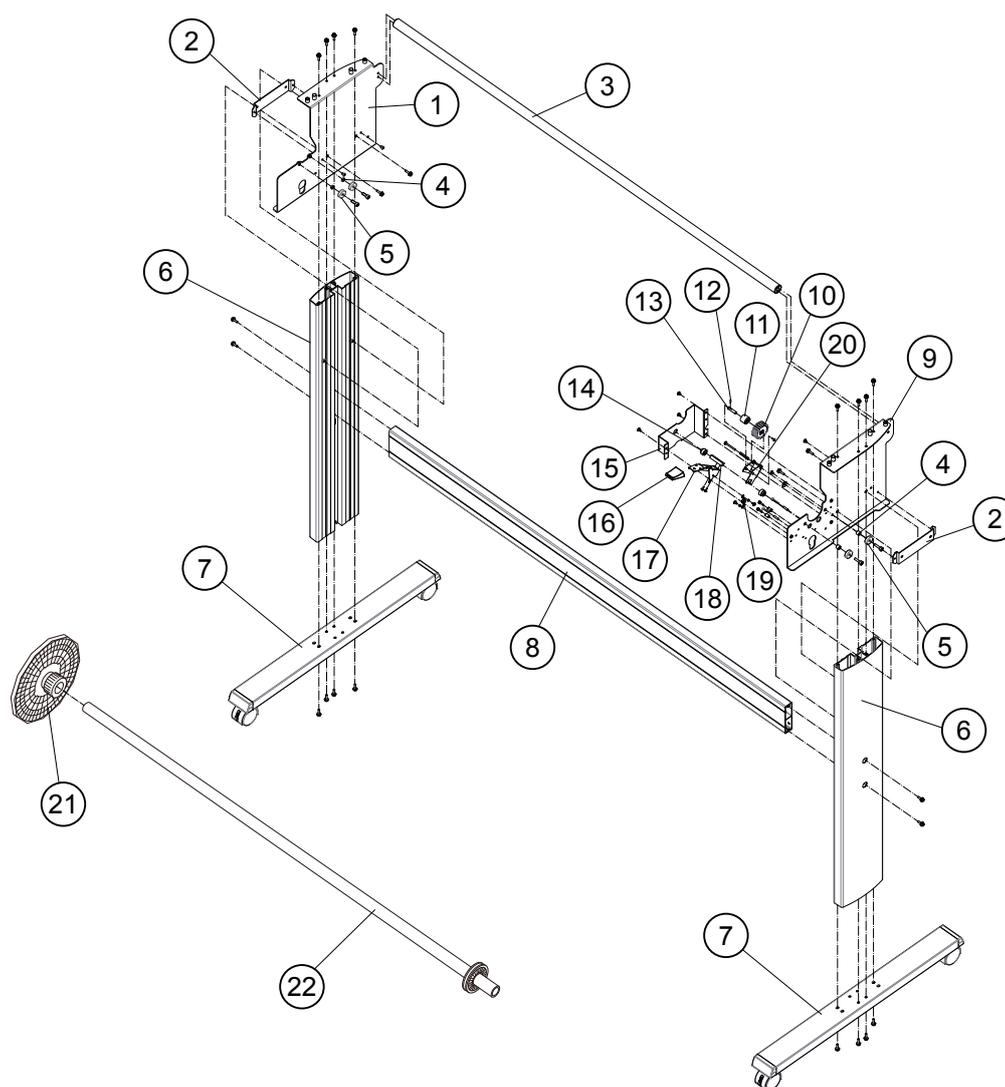
Option Basket CE6000-120/120AMO, PG0101



10.14 Stand CE6000-120AP, ST0102

No.	Part No.	Description	Q'ty	Remarks	Rank
1	621601121	Left Top Plate Assembly, CE6000-120AP	1		C
2	621601161	Post Plate	2		C
3	621590372	Guide Shaft	1		C
4	392160020	Spacer, CB-602E	4		C
5	310063620	Roller, BB 636ZZ	4		C
6	621601011	Side Stay CE6000-120AP	2	Right and left	C
7	621601031	Foot Assembly, CE6000-120AP	2		C
8	621590240	Center Bar, CE6000-120AP	1		C
9	621601101	Right Top Plate Assembly, CE6000-120AP	1		C
10	621601220	Back Tension Gear	1		C
11	305522017	Torque limiter, OTLV6-1500C	1		C
12		Parallel Shaft	1		D
13	621601230	Back Tension Shaft	1		C
14	621582171	Cam Shaft Holder	2		C
15	621601241	Stock Bracket	1		C
16	621580581	Cap, Cam Lever	1		C
17	621601250	Stopper Lever, AP	1		C
18	621601260	Shaft, Stopper	1		C
19	621580570	Spring, Cam Lever	1	M6L16 Cap Screw	C
20	621601211	Back Tension Bracket	1		C
21	621601370	Flange, CE6000-120AP	2		A
22	621601360	Stock Shaft Assembly	1		C

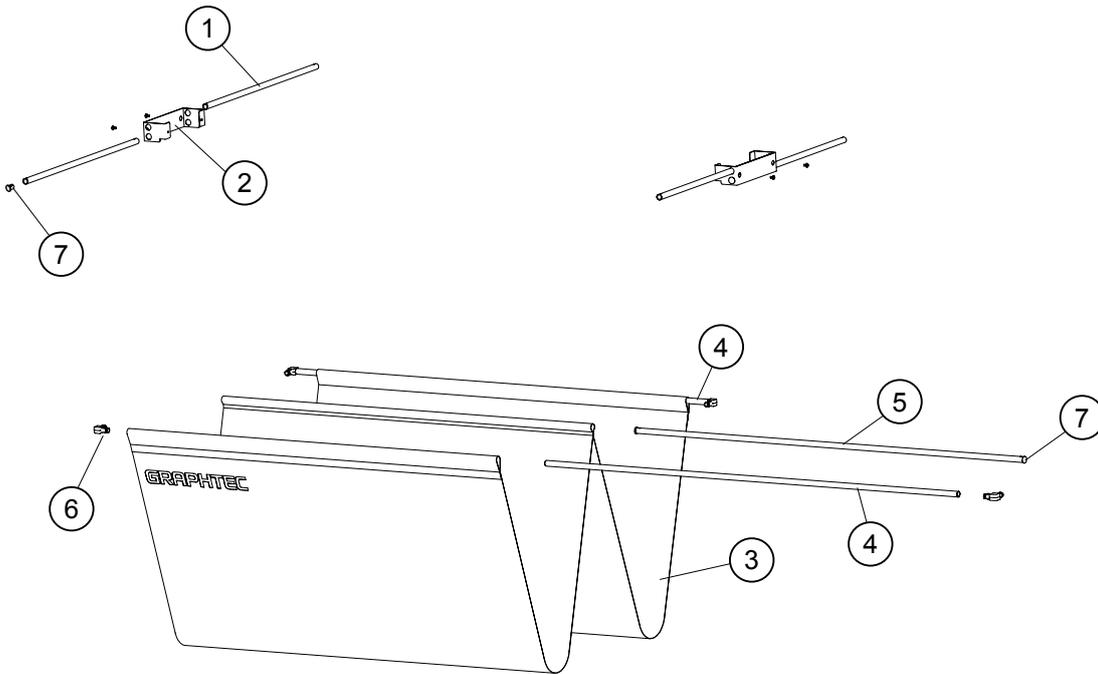
Stand CE6000-120AP, ST0102



10.15 Basket CE6000-120AP, PG0101

No.	Part No.	Description	Q'ty	Remarks	Rank
1	621590620	Pipe, Basket Side, CE6000-120	4		C
2	621590610	Basket Bracket, CE6000-120	2		C
3	621590650	Basket Cloth, CE6000-120	1		C
4	621590630	Pipe FR, Basket Cloth, CE6000-120	2		C
5	621590640	Pipe Center, Basket Cloth, CE6000-120	1		C
6	621409261	Anchor Joint	4		C
7	621409231	End Cap, Basket	6		C
8		M5L6 TP Screw	4		D

Option Basket CE6000-120/120AMO, PG0101



10.16 Other Parts

Standard Accessories

No.	Part No.	Description	Q'ty	Remarks	Rank
1	772157160	Roll Stocker Set (L and R)	1	CE6000-40	C
2	308002101	Cutter Knife, Q-100P	1		C
3		Fiber Tip Pen, KF700-BK(1P)	1	CE6000-40/60/120/120AMO	D
		Ball Point Pen, KB700-BK-1P	1	CE6000-120AP	D
4	562500003	USB Cable, CBL0106-ACL2-29M	1		C
5	621313440	Setup Manual, CE6000-UM-8M1	1	CE6000-40/60/120/120AMO	C
6	621589880	CE6000 CD-Manual, CE6000-CDM01M	1	CE6000-40/60/120/120AMO	C
	621609900	CE6000-120AP CD-Manual, CE60AP-CDM01M	1		C
7	621269333	Safety Manual, ANCUTG-UM-AM3	1		C
8		Cutter Blade, CB09UB-1	1	Supply Part CB09UB-5	D
9		Cutting Mat A3	1	CE6000-40, Supply Part	D
10		Cutter Blade Holder, PHP33-CB09N-HS	1	Supply Parts	D
11		Fiber Pen Holder, PHP31-FIBER	1	Supply Parts	D
12		Fiber Pen, KF700-BK	1	Supply Parts	D
13		Ball Pen Holder, PHP34-BALL	1	Supply Parts	D
14		Ball Point Pen, KB700-BK	1	Supply Parts	D

Regarding the rank of spare parts

Rank A: This rank of part will be stocked always until product discontinued.

Rank B: This rank of part will not be stocked always. This rank of parts will need a lead-time maximum 3 months.

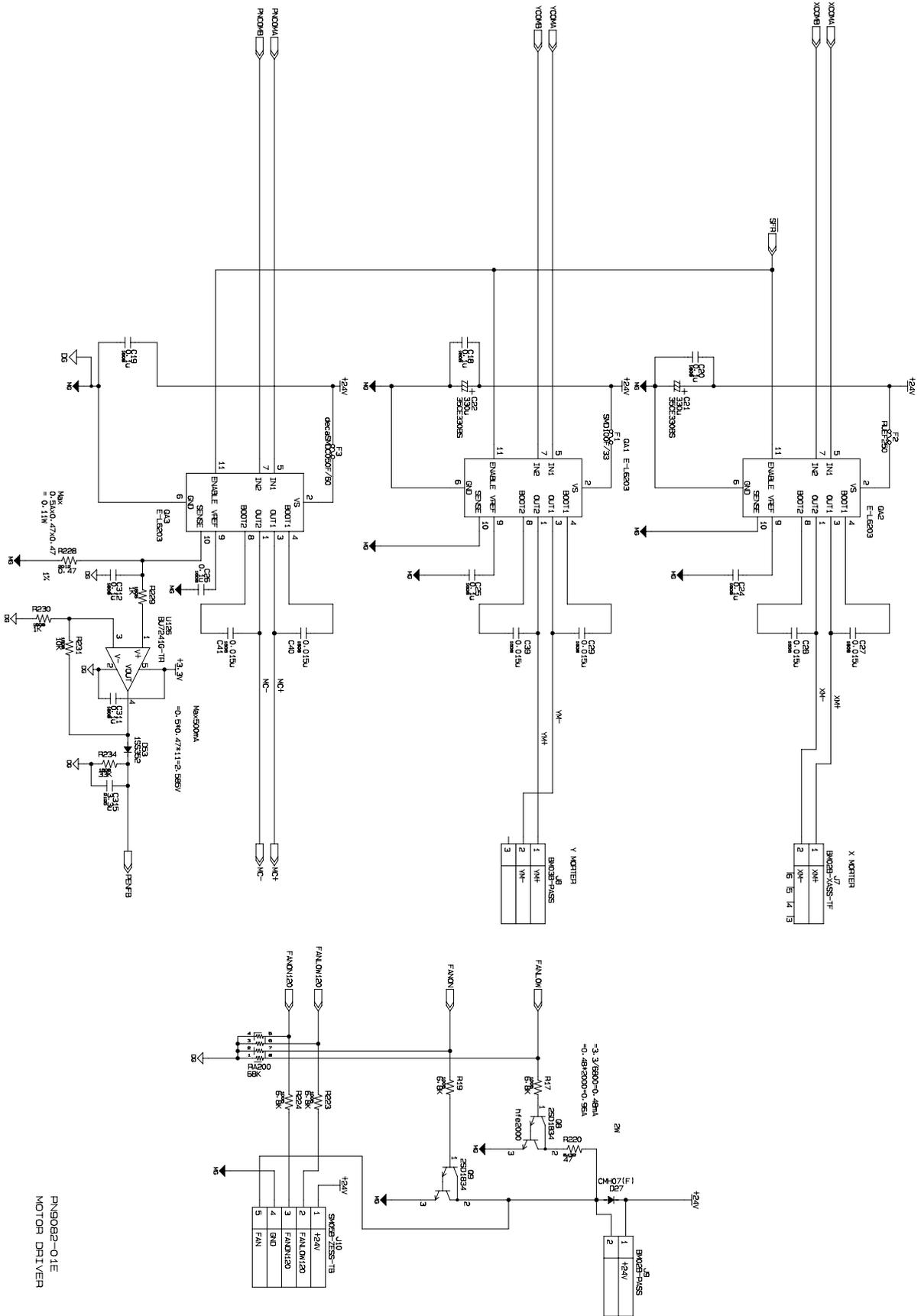
Rank C: This rank of part will not be stocked always. This parts will need a lead time at least 3 month.

Rank D: This rank of part will not be supplied as spare parts.

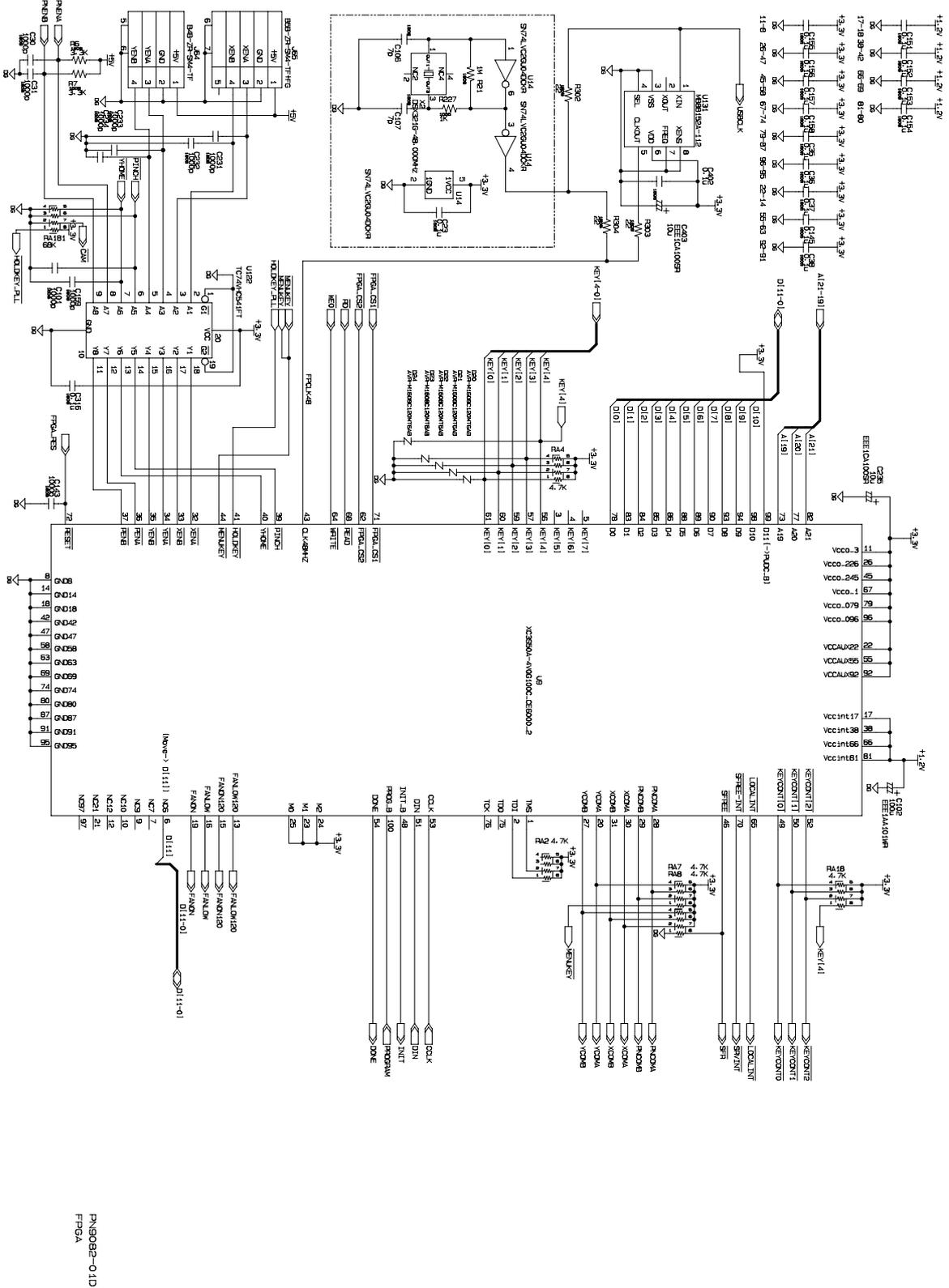
The parts will be supplied during five years after production was discontinued unless the parts run out.

Some of the outer parts may not be supplied after production was discontinued.

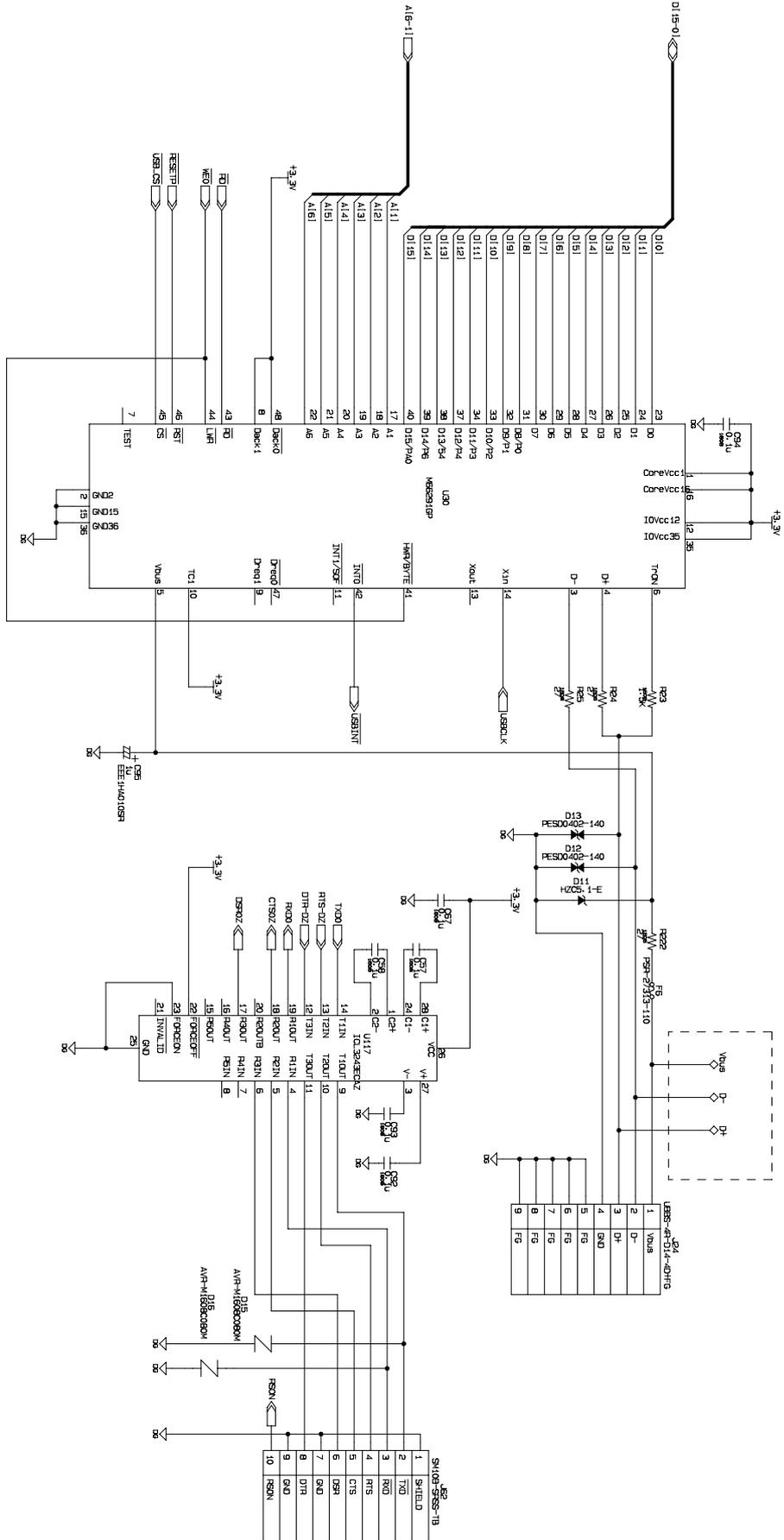
Main Board Motor Driver (PN9082-01E)



Main Board FPGA (PN9082-01E)

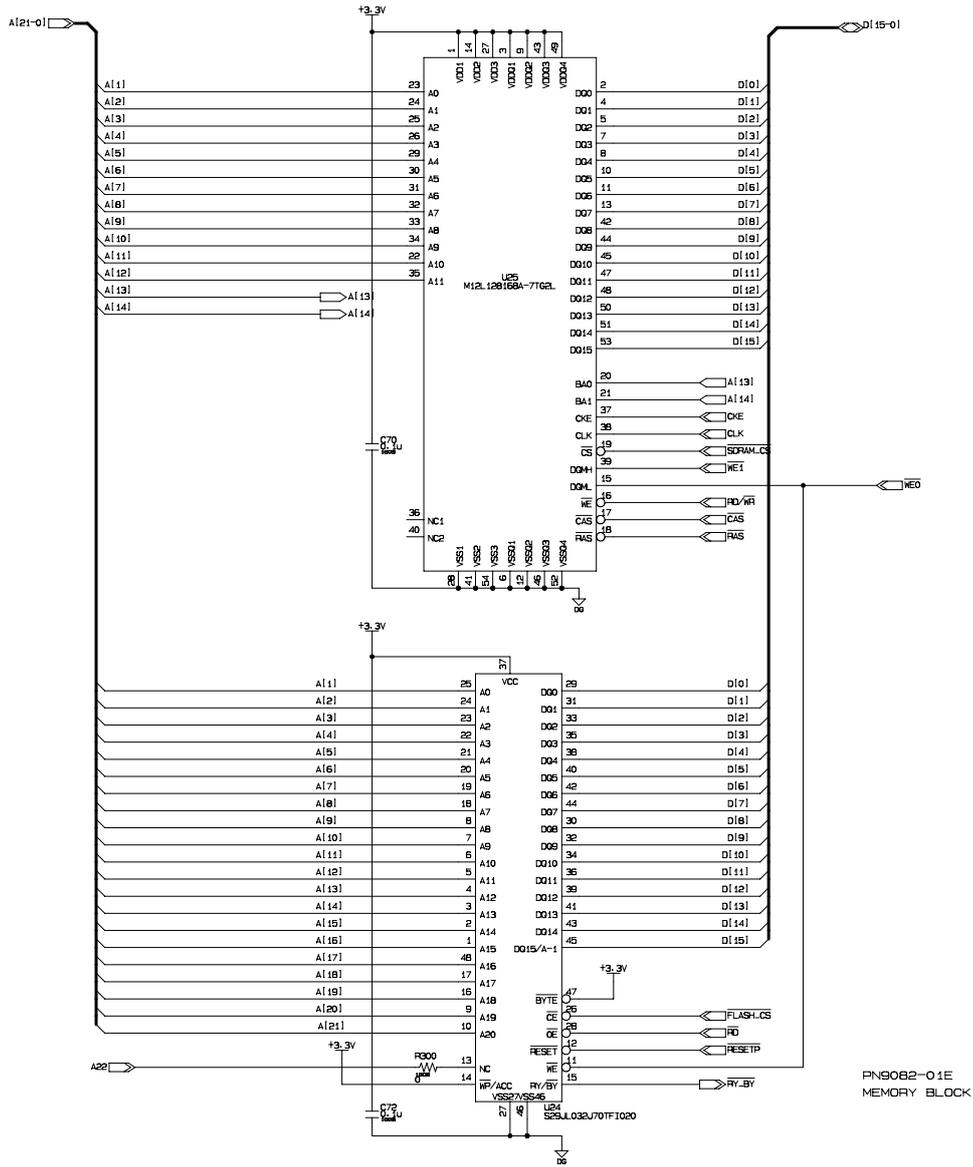


Main Board I/F Block (PN9082-01E)



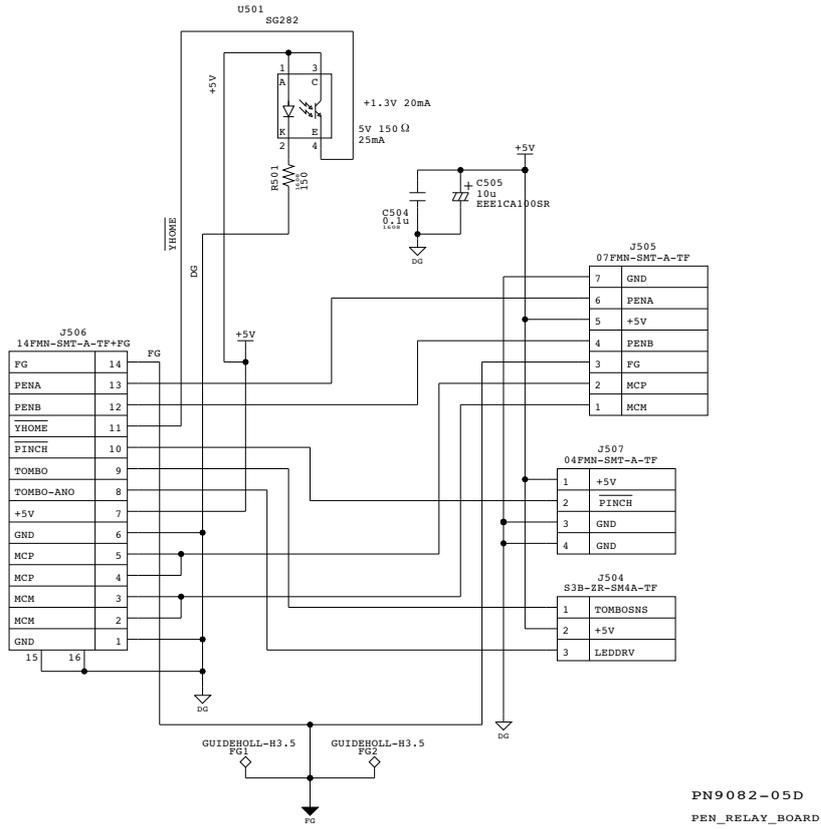
PN9082-01D
I/F BLOCK

Main Board Memory Block (PN9082-01E)

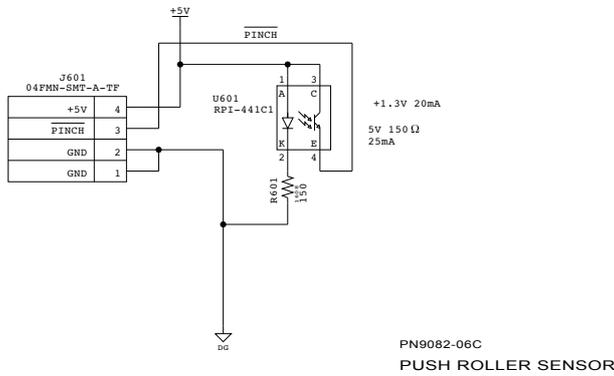


PN9082-01E
MEMORY BLOCK

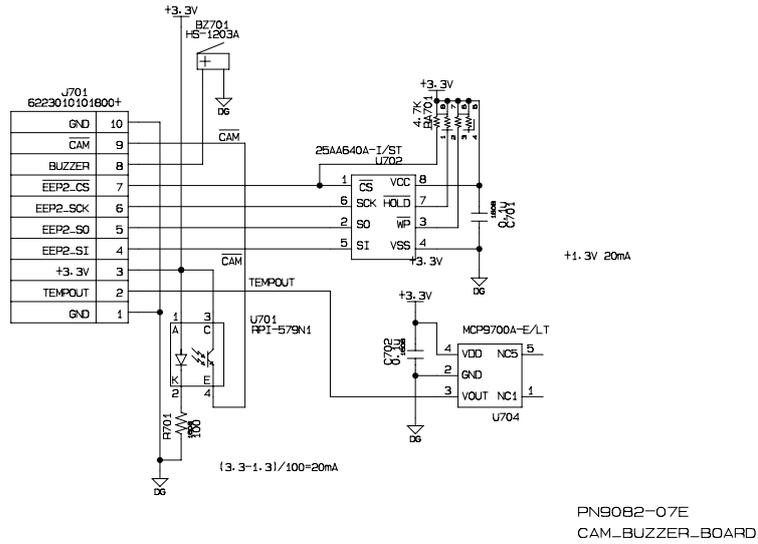
Pen Relay Board (PN9082-05D)



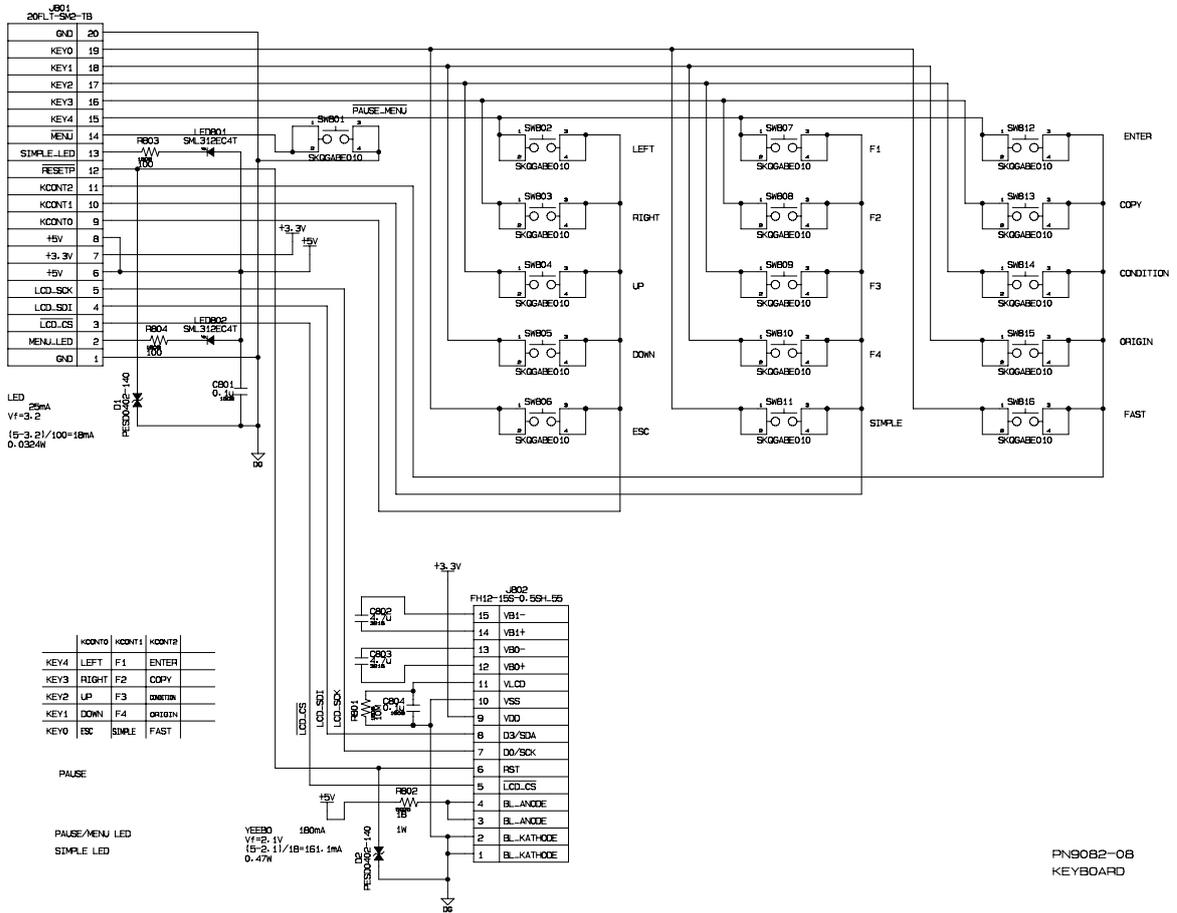
Push Roller Sensor Board (PN9082-06C)



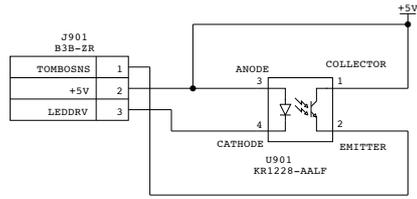
Cam Sensor Buzzer Board (PN9082-07E)



Key Board (PN9082-08E)

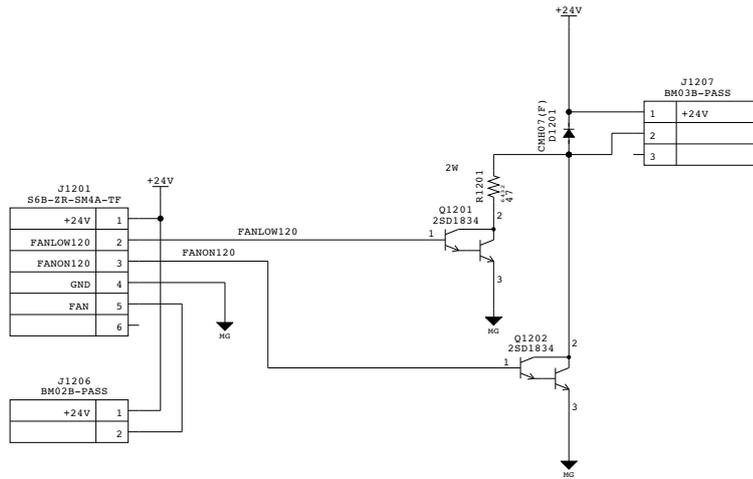


Registration Mark Sensor Board (PN9082-09D)



PN9082-09D
REGISTRATION MARK SENSOR BOARD

Fan Relay Board CE6000-120 (PN9082-12C)



PN9082-12C
120 FAN RELAY BOARD