MR-J2S Renewal Tool for Mitsubishi General-purpose AC Servo

Manual for Replacement from MELSERVO-J2S Series Using MR-J2S Renewal Tool

Thank you for purchasing Mitsubishi MR-J2S Renewal Tool (hereinafter, referred to as the renewal tool).
To use the renewal tool correctly and safely, please read this document well before use, and sufficiently understand its functions and performance.

Notes

1. All rights reserved.
2. The information in this document is subject to change without notice.
3. In some cases where this renewal tool is used, all functions may not be compatible with those of MR-J2S Servo.
4. If the positioning module (Model A1SD75P), high-speed counter (Model A1SD61) or servo system controller is used, it may be required to change the existing wiring to prevent noise depending on the existing situation.
5. When using the renewal tool, you must read this document and "Guide for Replacing MR-J2S/J2M Series with J4 Series L(NA)03093" issued by Mitsubishi Electric Corporation. Prepare the manual in advance.

MITSUBISHI ELECTRIC SYSTEM & SERVICE CO., LTD.

● Safety Instructions ●

Please read the instructions carefully before using the equipment.

To ensure correct usage of the equipment, make sure to read through this Replacement Manual, the Instruction Manual, the installation guide, and the appended documents carefully before attempting to install, operate, maintain, or inspect the equipment. Do not use the equipment until you have a full knowledge of the equipment, safety information and instructions.
In this Replacement Manual, the safety instruction levels are classified under "WARNING" and "CAUTION".

⚠ WARNING	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
⚠ CAUTION	Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight injury to personnel or may cause physical damage.

Note that the ⚠ CAUTION level may lead to a serious consequence according to conditions.
Please follow the instructions of both levels because they are important to personnel safety.
What must not be done and what must be done are indicated by the following diagrammatic symbols.

⃠	Indicates prohibition (what must not be done). For example, "No Fire" is indicated by  .
●	Indicates obligation (what must be done). For example, grounding is indicated by  .

In this Replacement Manual, instructions of a lower level than the above, such as those that do not cause physical damage or instructions for other functions, are classified under "POINT".
After reading this Instruction Manual, keep it accessible to the operator.

1. To prevent electric shock, note the following

⚠ WARNING

- ●Before wiring or inspection, turn off the power and wait for 15 minutes or more until the charge lamp turns off. Then, confirm that the voltage between P+ and N- is safe with a voltage tester and others. Otherwise, an electric shock may occur. In addition, when confirming whether the charge lamp is off or not, always confirm it from the front of the servo amplifier.
- ●Ground the servo amplifier and servo motor securely.
- ●Any person who is involved in wiring and inspection should be fully competent to do the work.
- ●Do not attempt to wire the servo amplifier and servo motor until they have been installed. Otherwise, it may cause an electric shock.
- ●Do not operate switches with wet hands. Otherwise, it may cause an electric shock.
- ●The cables should not be damaged, stressed, loaded, or pinched. Otherwise, it may cause an electric shock.
- ●During power-on or operation, do not open the front cover of the servo amplifier. Otherwise, it may cause an electric shock.
- ●Do not operate the servo amplifier with the front cover removed. High-voltage terminals and charging area are exposed and you may get an electric shock.
- ●Except for wiring and periodic inspection, do not remove the front cover of the servo amplifier even if the power is off. The servo amplifier is charged and you may get an electric shock.
- ●To prevent electric shock, always connect the protective earth (PE) terminal (marked ⏚) of the servo amplifier to the protective earth (PE) of the cabinet.
- ●When using a residual current device (RCD), select the type B.
- ●To avoid an electric shock, insulate the connections of the power supply terminals.

2. To prevent fire, note the following

⚠ CAUTION

- ●Install the servo amplifier, servo motor, and regenerative resistor on incombustible material. Installing them directly or close to combustibles will lead to a fire.
- ●Always connect a magnetic contactor between the power supply and the main circuit power supply (L1/L2/L3) of the servo amplifier in order to configure a power supply shut-off on the side of the servo amplifier's power supply. If a magnetic contactor is not connected, continuous flow of a large current may cause a fire when the servo amplifier malfunctions.
- ●When using the regenerative resistor, switch power off with the alarm signal. Not doing so may cause a fire when a regenerative transistor malfunctions or the like may overheat the regenerative resistor.
- ●Provide adequate protection to prevent screws and other conductive matter, oil and other combustible matter from entering the servo amplifier and servo motor.
- ●Always connect a molded-case circuit breaker to the power supply of the servo amplifier.

3. To prevent injury, note the following

⚠ CAUTION

- ●Only the voltage specified in the Instruction Manual should be applied to each terminal. Otherwise, a burst, damage, etc. may occur.
- ●Connect cables to the correct terminals. Otherwise, a burst, damage, etc. may occur.
- ●Ensure that the polarity (+/-) is correct. Otherwise, a burst, damage, etc. may occur.
- ●The servo amplifier heat sink, regenerative resistor, servo motor, etc. may be hot while power is on or for some time after power-off. Take safety measures, e.g. provide covers, to avoid accidentally touching the parts (cables, etc.) by hand.)

4. Additional instructions

The following instructions should also be fully noted. Incorrect handling may cause a malfunction, injury, electric shock, etc.

(1) Transportation and installation

⚠ CAUTION

- ●Transport the products correctly according to their mass.
- ●Stacking in excess of the specified number of product packages is not allowed.
- ●Do not hold the front cover when transporting the servo amplifier. Otherwise, it may drop.
- ●Install the servo amplifier and the servo motor in a load-bearing place in accordance with the Instruction Manual.
- ●Do not get on or put heavy load on the equipment.
- ●The equipment must be installed in the specified direction.
- ●Secure the prescribed distance between the servo amplifier and the inner surface of the cabinet or other devices.
- ●Do not install or operate the servo amplifier and servo motor which have been damaged or have any parts missing.
- ●Do not block the intake and exhaust areas of the servo amplifier. Otherwise, it may cause a malfunction.
- ●Do not drop or strike the servo amplifier and servo motor. Isolate them from all impact loads.
- ●When you keep or use the equipment, please fulfill the following environment.

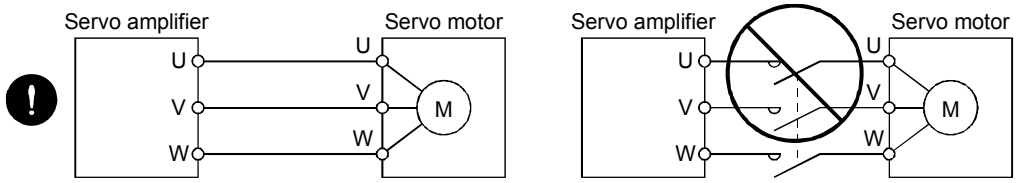
Item		Environment
Ambient temperature	Operation	0 ˚C to 55 ˚C (non-freezing)
	Storage	-20 ˚C to 65 ˚C (non-freezing)
Ambient humidity	Operation	90 %RH or less (non-condensing)
	Storage	
Ambience		Indoors (no direct sunlight) and free from corrosive gas, flammable gas, oil mist, dust, and dirt
Altitude		1000 m or less above sea level
Vibration resistance		5.9 m/s^2, 10 to 55 Hz (Each direction of X, Y, and Z)

- ●Contact your local sales office if the product has been stored for an extended period of time.
- ●When handling the servo amplifier, be careful about the edged parts such as corners of the servo amplifier.
- ●The servo amplifier must be installed in a metal cabinet.
- ●Take sterilization and insecticide measures other than fumigation for the wood packing material. If a servo amplifier is packed with wood packing material that has been smoked or fumigated, halogenated material contained in the fumigant (such as fluorine, chlorine, bromine, and iodine) may cause the servo amplifier to malfunction.
- ●Therefore, because a malfunction may occur, avoid using the servo amplifier in an environment where the servo amplifier coexists with parts containing halogenated flame retardants (such as bromine).

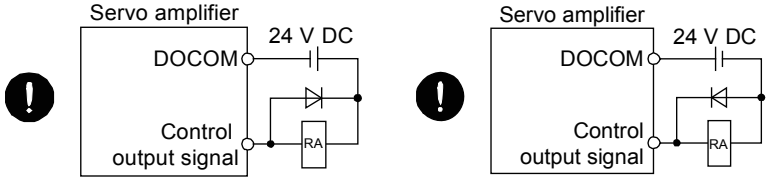
(2) Wiring

⚠ CAUTION

●Wire the equipment correctly and securely. Otherwise, the servo motor may operate unexpectedly.
●Do not install a power capacitor, surge killer, or radio noise filter (optional FR-BIF) on the output side of the servo amplifier.
●Because installation of these items may cause the servo motor to malfunction, connect the wires to the correct phase terminals (U/V/W) of the servo amplifier and servo motor power supply.
●Directly connect the servo amplifier power output (U/V/W) to the servo motor power input (U/V/W). Do not let a magnetic contactor, etc. intervene. Otherwise, it may cause a malfunction.



●The surge absorbing diode installed to the DC relay for control output should be fitted in the specified direction. Otherwise, the emergency stop and other protective circuits may not operate.



For sink output interface　　For source output interfaces

●When the cable is not tightened enough to the terminal block, the cable or terminal block may generate heat because of the poor contact. Be sure to tighten the cable with specified torque.
●To avoid a malfunction, do not connect the U, V, W, and CN2 phase terminals of the servo amplifier to the servo motor of an incorrect axis.

(3) Test run and adjustment

⚠ CAUTION

●Before operation, check the parameter settings. Improper settings may cause some machines to operate unexpectedly.
●Never perform extreme adjustment or changes to the parameters; otherwise, the operation may become unstable.
●Do not close to moving parts at servo-on status.

(4) Usage

⚠ CAUTION

●Provide an external emergency stop circuit to ensure that operation can be stopped and power switched off immediately.
●Do not disassemble, repair, or modify the equipment.

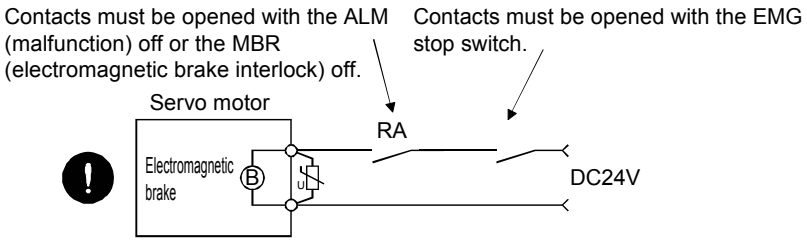
⚠ CAUTION

●Before resetting an alarm, make sure that the run signal of the servo amplifier is off in order to prevent a sudden restart. Otherwise, it may cause an accident.
●Use a noise filter, etc. to minimize the influence of electromagnetic interference. Electromagnetic interference may be given to the electronic equipment used near the servo amplifier.
●Burning or breaking a servo amplifier may cause a toxic gas. Do not burn or break it.
●Use the servo amplifier with the specified servo motor.
●The electromagnetic brake on the servo motor is designed to hold the motor shaft and should not be used for ordinary braking.
●For such reasons as service life and mechanical structure (e.g. where a ball screw and the servo motor are coupled via a timing belt), the electromagnetic brake may not hold the motor shaft. To ensure safety, install a stopper on the machine side.

(5) Corrective actions

⚠ CAUTION

●When it is assumed that a hazardous condition may occur due to a power failure or product malfunction, use a servo motor with an electromagnetic brake or external brake to prevent the condition.
●Configure an electromagnetic brake circuit so that it is activated also by an external EMG stop switch.



●When any alarm has occurred, eliminate its cause, ensure safety, and deactivate the alarm before restarting operation.
●Provide an adequate protection to prevent unexpected restart after an instantaneous power failure.

(6) Maintenance, inspection and parts replacement

⚠ CAUTION

●With age, the electrolytic capacitor of the servo amplifier will deteriorate. To prevent a secondary accident due to a malfunction, it is recommend that the electrolytic capacitor be replaced every 10 years when it is used in general environment. Please contact your local sales office.

(7) General instruction

●To illustrate details, the equipment in the diagrams of this Replacement Manual may have been drawn without covers and safety guards. When the equipment is operated, the covers and safety guards must be installed as specified. Operation must be performed in accordance with Instruction Manual.

● Disposal of Waste ●

Please dispose a servo amplifier, battery (primary battery) and other options according to your local laws and regulations.

⚠ EEP-ROM life

The number of write times to the EEP-ROM, which stores parameter settings, etc., is limited to 100,000. If the total number of the following operations exceeds 100,000, the servo amplifier may malfunction when the EEP-ROM reaches the end of its useful life.

- Write to the EEP-ROM due to parameter setting changes
- Write to the EEP-ROM due to device changes

STO function of the servo amplifier

See the applicable "Servo Amplifier Instruction Manual" when using the STO function of the servo amplifier.

COMPLIANCE WITH CE MARKING

For compliance with CE marking, refer to "MELSERVO-J4 Series Instructions and Cautions for Safe Use of AC Servos" (IB(NA)0300175) which packed with the servo amplifier.

COMPLIANCE WITH UL/CSA STANDARD

For conformity of UL/CSA standard, refer to "MELSERVO-J4 Series Instructions and Cautions for Safe Use of AC Servos" (IB(NA)0300175) which packed with the servo amplifier.

COMPLIANCE WITH KC MARK

For compliance with KC mark, refer to "MELSERVO-J4 Series Instructions and Cautions for Safe Use of AC Servos" (IB(NA)0300175) which packed with the servo amplifier.

«About the manual»

Information given in this manual and in the servo amplifier technical reference material issued by Mitsubishi Electric Corporation is required when using the MR-J2S Renewal Tool for the first time. Please do not attempt to use the MR-J2S Renewal Tool until this required information has been obtained and referenced.

Relevant manuals

<For general-purpose interface (type A) information>

Manual name	Manual No.
Mitsubishi MELSERVO-J2S Series General-Purpose AC Servo, The General-Purpose Interface, And The MR-J2S-_A Servo Amplifier Technical Reference Material	SH(NA)030000
Mitsubishi MELSERVO-J4 Series General-Purpose AC Servo, The General-Purpose Interface, And The MR-J4-_A Servo Amplifier Technical Reference Material	SH(NA)030103

<For SSCNET interface (Type B) information>

Manual name	Manual No.
Mitsubishi MELSERVO-J2S Series General-Purpose AC Servo, The SSCNET Interface, And The MR-J2S-_B Servo Amplifier Technical Reference Material	SH(NA)030001
Mitsubishi MELSERVO-J4 General-Purpose AC Servo MR-J2S-B SSCNET Conversion Unit Compatibility MR-J4-_-B-RJ020 Servo Amplifier Technical Reference Material MR-J2S-B SSCNET Conversion Unit MR-J4-T20 Technical Reference Material	SH(NA)030124
Mitsubishi MELSERVO-J4 General-Purpose AC Servo MR-J2S-B SSCNET Conversion Unit MR-J4-T20 Operation Manual	IB(NA)0300204

<Common>

Manual name	Manual No.
Mitsubishi General-Purpose AC Servo, And The Servo Motor Technical Reference Material	SH(NA)3180
Mitsubishi General-Purpose AC Servo, And The Servo Motor Technical Reference Material (Part 3)	SH(NA)030099
Mitsubishi MELSERVO-J4 General-Purpose AC Servo, And The MR-J4 Servo Amplifier Technical Reference Material (Troubleshooting Edition)	SH(NA)030108

MEMO

Contents

Section 1　Functions and Configuration

1.1　Outline

The MR-J2S renewal tool is a tool to replace the presently used MR-J2S servo amplifier with the MR-J4 servo amplifier. The company is prepared to provide a renewal kit compatible with the existing mounting dimensions and terminal block cables, and a conversion cable compatible with the existing cables.

1.2　Supported Models

Type	Former model		Replacement model
General-purpose interface (Hereinafter referred to as A type)	MR-J2S-_A (_: 10 to 22K)	→	MR-J4-_A (_: 10 to 22K)
SSCNET Interface (Hereinafter referred to as B type)	MR-J2S-_B (_ : 10 to 22K)		MR-J4-_B-RJ020 (_: 10 to 22K) ＋ MR-J4-T20

1.3　Features

- It is possible to operate the exiting MR-J2S servo motor with the MR-J4 servo amplifier.
- Wiring work can be shortened because the existing cables can be connected as they are.
- The renewal kit can be mounted using the existing mounting holes.
- The existing space can be effectively used by adopting the sliding mechanism for the renewal kit. (For some models)
- By utilizing the renewal tool, it is possible to replace by proceeding in stages from primary replacement to secondary replacement.

  Primary replacement: Replace the servo amplifier only.

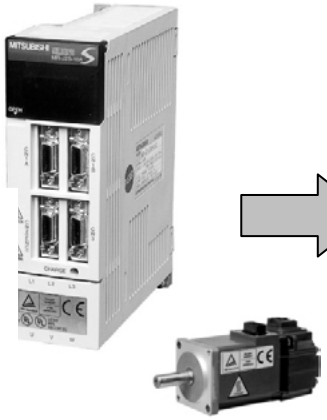
  Secondary replacement: Replace the servo motor after replacement of the servo amplifier.

  Package replacement: Replace the servo amplifier and the servo motor simultaneously.

  * It is not possible to replace the servo motor only.
  * A separate 24 V DC power supply (current capacity: 80 mA or more) for the interface is required when the internal power supply for the interface is used for the MR-J2S servo amplifier. Must be provided by the customer. (Not included with the renewal tool.)

(1) MR-J2S-_A_type renewal tool

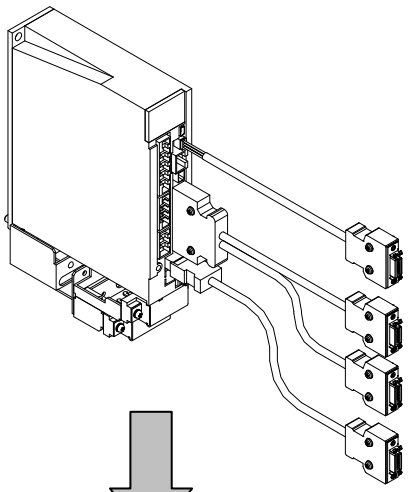
[Before replacement]

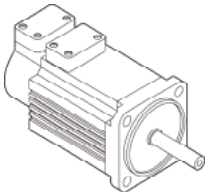


MR-J2S-_A_type servo amplifier
and servo motor for MR-J2S

[After replacement]

<Primary replacement> When replacing the servo amplifier only

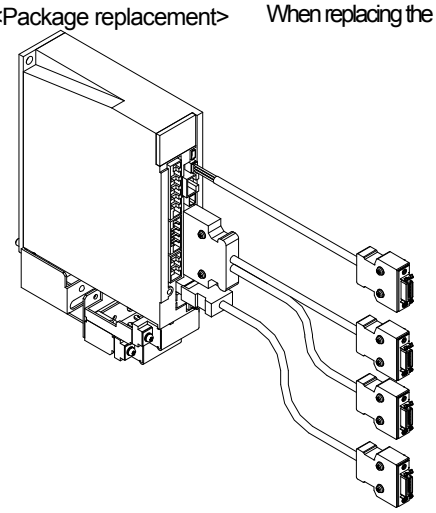


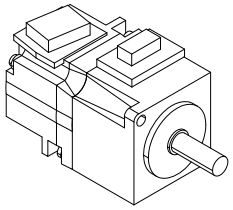


Servo motor for MR-J2S

<Secondary replacement> When replacing the servo motor after replacing the servo amplifier

<Package replacement> When replacing the servo amplifier and the servo motor simultaneously

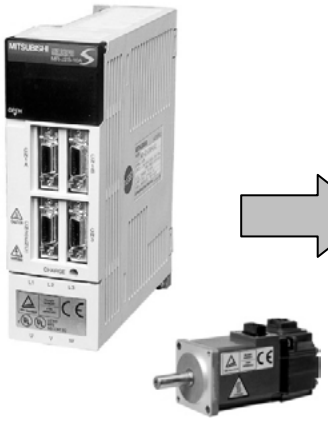




Servo motor for MR-J4

(2) MR-J2S-_B_type renewal tool

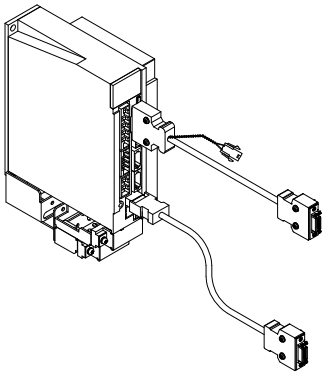
[Before replacement]

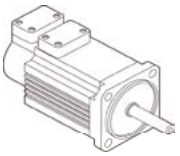


MR-J2S-_B_type servo amplifier
and Servo motor for MR-J2S

[After replacement]

<Primary replacement> When replacing the servo amplifier only

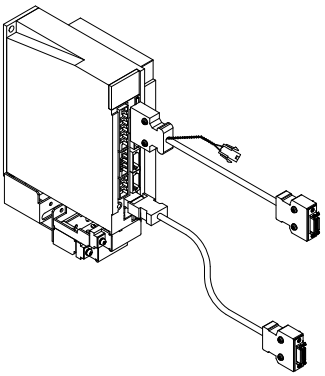


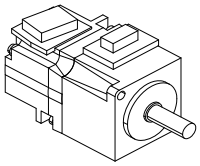


Servo motor for MR-J2S

<Secondary replacement> When replacing the servo motor after replacing the servo amplifier

<Package replacement> When replacing the servo amplifier and the servo motor simultaneously





Servo motor for MR-J4

1．4 Comparison of Functions

MR-J2S / MR-J4 function comparison table

(1) Common items

*When the renewal tool is used.

Item		MR-J2S series	MR-J4 series	Renewal tool usage times	Compatibility (*)	Remarks
Servo amplifier	Capacity range	0.1 to 22 kW (200 V)	0.1 to 22 kW (200 V)	0.1 to 22 kW (200 V)	○	(Note 1)
	Dynamic brakes	Built-in (0.1 kW to 7 kW) External (11 kW to 22 kW)	Built-in (0.1 kW to 7 kW) External (11 kW to 22 kW) * Coasting distance is different.		△	(Note 2)
	Internal regenerative resistor	Built-in (0.2 kW to 7 kW) External (11 kW to 22 kW)	Built-in (0.2 kW to 7 kW) External (11 kW to 22 kW)		△	(Note 3)
	Control circuit power supply	Single-phase 200 V AC to 230 V AC	Single-phase 200 V AC to 240V AC		○	
	Main circuit power	Single-phase/3-phase 200 V AC to 230 V AC	Single-phase/3-phase 200 V AC to 240 V AC		○	
	Interface 24 V DC power supply	Built-in	External supply required	External supply required	×	(Note 4)
	Control circuit power/ regenerative resistor terminal connection method	0.1 to 1 kW: Plug-in type connector 2 kW or more: Terminal block	0.1 to 3.5 kW: Plug-in type connector 5 kW or more: Terminal block	With terminal block conversion	○	
	Main circuit power terminal connection method	Terminal block	0.1 to 3.5 kW: Plug-in type connector 5 kW or more: Terminal block	With terminal block conversion (excluding 5 kW)	○	
	Auto tuning	Real-time auto Tuning:15 grades	Real-time auto Tuning: 40 grades One-touch tuning		○	
	Advanced vibration suppression control II	Unprovided	Provided		○	
	Adaptive filter	Provided (I)	Provided (II: with improved function)		○	
	Notch filter	Provided (2 pcs.)	Provided (5 pcs.)		○	
	Tough drive	Unprovided	Provided		○	
	Drive recorder	Unprovided	Provided		○	
	Restart after instantaneous power failure	Supported	None		×	(Note 5)
	Cooling method	Self cooling (0.1 to 1 kW) Strong cooling (2 to 22 kW)	Self cooling (0.1 to 0.6 kW) Strong cooling (0.7 to 22 kW)		○	(Note 6)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(2) A type

*When the renewal tool is used.

Item		MR-J2S series		MR-J4 series	Renewal tool usage times	Compatibility (*)	Remarks
Servo amplifier	Control mode	• Position control mode (pulse command) • Speed control mode (analog command) • Torque control mode (analog command)		• Position control mode (pulse command) • Speed control mode (analog command) • Torque control mode (analog command)		○	
	Control signal/ encoder signal/ Monitor signal Connector	7 kW or less	Control signal (CN1A, CN1B) 2 pcs. Encoder signal (CN2), 1 unit Monitor signal (CN3), 1 unit	Control signal (CN1), 1 unit Encoder signal (CN2), 1 unit Monitor signal (CN6), 1 unit ***Different connector shape**	With conversion cable	○	
		11 to 22 kW	Control signal (CN1A, CN1B) 2 pcs. Encoder signal (CN2), 1 unit Communication connector (CN3) 1 pc. Monitor signal (CN4), 1 unit				
	Maximum input pulses	Differential pulse 500 kpps Open-collector 200 kpps Command pulse: Sink		Differential pulse 4 Mpps Open-collector 200 kpps Command pulse: Sink		○	
	Command pulse logic setting	Forward/reverse rotation pulse train Signed pulse train A-phase/B-phase pulse train		Forward/reverse rotation pulse train Signed pulse train A-phase/B-phase pulse train		○	(Note 7)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

See page 1-7 for important points to note.

Continued from previous page

*When the renewal tool is used.

Item		MR-J2S series	MR-J4 series	Renewal tool usage times	Compatibility (*)	Remarks
Servo amplifier	DI signal	8 points	9 points		○	
		SON reception time After power-up, 2 s at maximum	SON reception time After power-up, 3.5 s at maximum		△	(Note 8)
		Forced stop: EM1 (DB stop)	Forced stop: EM1(DB stop)/ Possible to select EM2 (deceleration stop)		○	(Note 9)
	DO signal	6 points	6 points		○	
		ALM: After power-up, the output is on in 1 s at most	ALM: ALM: After power-up, the output is on in 3.5 s at most		△	(Note 10)
		Alarm code output ACD0 (Pin CN1A-19), 1st digit ACD1 (Pin CN1A-18), 2nd digit ACD2 (Pin CN1B-19) 3rd digit	Alarm code output ACD0 (Pin CN1-24), 1st digit ACD1 (Pin CN1-23), 2nd digit ACD2 (Pin CN1-22), 3rd digit	Unsupported	×	(Note 11)
	DIO Interface	Input: Sink/source Output: Sink	Input/Output: Sink/source		○	
	Encoder Pulse output	ABZ-phase (differential) Z-phase (open-collector)	ABZ-phase (differential) Z-phase (open-collector)		○	(Note 12)
	Absolute position detection system	PC → ABS transfer mode TL → ABS request	PC → ABS transfer mode TL → ABS request		○	
	Parameter Setting method	MR Configurator (SETUP161E) Communication method: RS-232 Push-button	MR Configurator2 Communication method: USB Push-button		△	(Note 13)
	RS-422/232 Communication function	RS-422/232 serial communication function	RS-422 serial communication function	Unsupported	×	(Note 14)
	Analog monitor input	Input: 2 ch; 10-bit torque; 14-bit speed or equivalent	Input: 2 ch; 10-bit torque; 14-bit speed or equivalent		○	
	Analog monitor output	2 ch (0 to ±10 V); 10-bit resolution or equivalent [Monitor signal] • Servo motor speed (±8/max. speed) • Torque (±8/max. torque) • Current command (±8/max. current command) • Command pulse frequency (±10 V/500 kpps) • Droop pulses (±10 V / 128 pulses) • Droop pulses (±10 V / 2048 pulses) • Droop pulses (±10 V / 8192 pulses) • Droop pulses (±10 V / 32768 pulses) • Droop pulses (±10 V / 131072 pulses) • Bus voltage (+8 V/400 V)	2 ch (0 to ±10 V); 10-bit resolution or equivalent [Monitor signal] • Servo motor speed (±8/max. speed) • Torque (±8/max. torque) • Current command (±8/max. current command) • Command pulse frequency (±10 V/4 Mpps) • Droop pulses (±10 V / 100 pulses) • Droop pulses (±10 V / 1000 pulses) • Droop pulses (±10 V / 10000 pulses) • Droop pulses (±10 V / 100000 pulses) • Feedback position (±10 V/1 Mpulse) • Feedback position (±10 V/10 Mpulse) • Feedback position (±10 V/100 Mpulse) • Bus voltage (+8 V/400 V) • Speed command 2 (±8 V/max. speed) • Encoder inside temperature (±10 V/128°C)		×	(Note 15) (Note 16)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

See page 1-7 for important points to note.

(3) B type *When the renewal tool is used.

	Item	MR-J2S series		MR-J4 series	Renewal tool usage times	Compatibility (*)	Remarks
Servo amplifier	Control mode	• Position control mode • Speed control mode		• Position control mode • Speed control mode • Torque control mode		○	
	Network	SSCNET		SSCNET (When the MR-J4-T20 SSCNET conversion unit is used.)		○	
	Control signal/ encoder signal/ Monitor signal Connector	7 kW or less	For SSCNET (CN1A, CN1B) 2 pcs. Encoder signal (CN2), 1 unit Monitor signal (CN3), 1 unit	MR-J4-_B-RJ020 amplifier • Encoder signal (CN2), 1 unit • Monitor signal (CN3), 1 unit MR-J4-T20 unit • For SSCNET (CN10A, CN10B) 2 pcs. ***Different connector shape**	With conversion cable	○	
		11 to 22 kW	For SSCNET (CN1A, CN1B) 2 pcs. Encoder signal (CN2), 1 unit Communication connector (CN3) 1 pc. Monitor signal (CN4), 1 unit Control signal (CON2), 1 unit				
	DI signal	0 points		3 points		○	
		SON reception time After power-up, 3 s at maximum		SON reception time After power-up, 4 s at maximum		△	(Note 8)
		Forced stop: EM1 (DB stop)		Forced stop: EM1 (DB stop) / Possible to select EM2 (deceleration stop)		○	(Note 9)
	DO signal	2 points		3 points		○	
	DIO Interface	Input: Sink/source Output: Sink		Input/Output: Sink/source		○	
	Encoder Pulse output	ABZ-phase (differential)		ABZ-phase (differential)		○	(Note 12)
	Parameter Each/ common	MR Configurator (SETUP161E) Communication method: RS-232		MR Configurator (SETUP161E) Communication method: RS-232 (When the MR-J4-T20 SSCNET conversion unit is used.) *A separate junction cable is necessary.		○	(Note 17)
	Analog monitor output	2 ch (0 to ±10 V); 10-bit resolution or equivalent [Monitor signal] • Servo motor speed (±8/max. speed) • Torque (±8/max. torque) • Current command (±8/max. current command) • Speed command (±8/max. speed) • Droop pulses (±10 V / 128 pulses) • Droop pulses (±10 V / 2048 pulses) • Droop pulses (±10 V / 8192 pulses) • Droop pulses (±10 V / 32768 pulses) • Droop pulses (±10 V / 131072 pulses) • Bus voltage (+8 V/400 V)		2 ch (0 to ±10 V); 10-bit resolution or equivalent [Monitor signal] • Servo motor speed (±8/max. speed) • Torque (±8/max. torque) • Current command (±8/max. current command) • Speed command (±8/max. speed) • Droop pulses (±10 V / 128 pulses) • Droop pulses (±10 V / 2048 pulses) • Droop pulses (±10 V / 8192 pulses) • Droop pulses (±10 V / 32768 pulses) • Droop pulses (±10 V / 131072 pulses) • Bus voltage (+8 V/400 V)		×	(Note 15) (Note 16)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

See page 1-7 for important points to note.

<Precautions>

Note 1. The renewal tool is compatible with 0.1 to 22 kW (200 V).
2. Note that the coasting distance is different between the MR-J2S servo amplifier and the MR-J4 servo amplifier.
When DB assignment function is used for a servo amplifier of 11 kW or more,set the parameter as follows.
For A types, set PD27 as "0006".
For B types, set PD08 as "0006".
3. When replacing, some models cannot use the existing regenerative option. Provide regenerative options as necessary by reselecting the capacity, including calculating the regenerative ability again. For details, refer to **Part 7 of the "Guide for Replacing MR-J2S / J2M L (NA) 03092" issued by Mitsubishi Electric Corporation.**
4. **A separate 24 V DC power supply (current capacity: 80 mA or more) for the interface is required** when the internal power supply for the interface is used for the MR-J2S servo amplifier. **Must be provided by the customer. (Not included with the renewal tool.)**
5. There is no restart function in the MR-J4 servo amplifier during momentary power interruption. When replacing, if undervoltage (AL 10.1 or AL 10.2) is generated by instantaneous power failure, reset the alarm (turn off the power once) and restart.
6. If the renewal kit is used, it is necessary to remove the renewal kit when replacing the servo amplifier cooling fan. Take care.
7. When replacing, it is necessary to adjust the command pulse train logic setting between the positioning module and the servo amplifier. For details, see section 2.6.6.
8. This is the time between power-on and servo-on reception. Due to different reception times, sometimes review of the external sequence is necessary upon replacement. For details, see section 2.6.4.
9. When replacing to the MR-J2S servo amplifier, it is necessary to set the parameters to EM1 (DB stop) (at the time of shipment of the MR-J4 servo, the parameter is set to EM2 (deceleration stop)). For information regarding detailed parameter settings, **refer to the "Guide for Replacing MR-J2S / J2M L (NA) 03092" issued by Mitsubishi Electric Corporation.**
・For A Type: Part 2, Section 3.5
・For B Type: Part 3, Section 3.7
10. This is the time until alarm signal output. Due to different reception times, sometimes review of the external sequence is necessary upon replacement. For details, see section 2.6.4.
11. Note that the renewal tool **is not compatible with alarm code output.**
12. Upon replacement, it is necessary to set the parameter for the encoder output pulses.
For information regarding detailed parameter settings, **refer to the "Guide for Replacing MR-J2S / J2M L (NA) 03092" issued by Mitsubishi Electric Corporation.**
・For A Type: Part 2, Section 3.5
・For B Type: Part 3, Section 3.7
13. Due to differences in motor maximum speed, for secondary and package replacement the output value of the monitor (motor speed) is differentfrom that of the existing amplifier.
Note that it is required to change the program when using monitor output with existing equipment.
14. In order to connect between the SSCNET conversion unit (model: MR-J4-T20) and the personal computer, both the existing communication cable (model:MR-CPCATCBL3M)and the junction cable for RS232C (model: MR-J4T20CH00) are required. Please purchase the Mitsubishi Electric Corporation item.
15. Please note that the command pulse frequency and the droop pulse output unit are different.
16. When replacing, a separate communication cable (USB cable: MR-J3USBCBL3M) is required to connect between the servo amplifier and the personal computer. Please purchase the Mitsubishi Electric Corporation item.
17. The renewal tool **is not compatible with RS-422/232 serial communication functions.**

(4) Encoder *When the renewal tool is used.

Item		MR-J2S series	MR-J4 series	Renewal tool usage times	Com-patibility (*)	Re-marks
Encoder	Connector	1 pcs.	1 pc, different connector shape	With conversion cable	○	
	Communication method	Serial communication	Serial communication		○	
	Resolution	131072 pulses/rev	4194304 pulses/rev		△	(Note 1)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

<Precautions>

Note 1. Similar operation is possible using parameter settings.
For information regarding detailed parameter settings, **refer to the "Guide for Replacing MR-J2S / J2M L (NA) 03092" issued by Mitsubishi Electric Corporation.**
・For A Type: Part 2, Section 3.5
・For B Type: Part 3, Section 3.7
For the MR-J4-_B-RJ020 servo amplifier, if the HG series servo motor is used, the encoder resolution per rotation of the servo motor is not 4194304 pulses/rev but becomes 131072 pulses/rev.

(5) Servo motor *When the renewal tool is used.

Item		MR-J2S series (Note 1)		MR-J4 series		Renewal tool usage times	Compatibility (*)	Remarks
Servo motor	Installation	HC-KFS	HC-KFS(B)	HG-KR	HG-KR(B)		○	
			HC-KFS(B)G1▲		HG-KR(B)G1▲		△	(Note 2)
			HC-KFS(B)G2▲		HG-KR(B)G7▲		×	(Note 3)
			HC-KFS(B)G5▲		HG-KR(B)G5▲		○	
			HC-KFS(B)G7▲		HG-KR(B)G7▲		○	
		HC-MFS	HC-MFS(B)	HG-MR	HG-MR(B)		○	
			HC-MFS(B)G1▲	HG-KR	HG-KR(B)G1▲		×	(Note 2) (Note 3)
			HC-MFS(B)G2▲		HG-KR(B)G7▲		×	(Note 3)
			HC-MFS(B)G5▲		HG-KR(B)G5▲		×	
			HC-MFS(B)G7▲		HG-KR(B)G7▲		×	
		HC-SFS	HC-SFS(B)	HG-SR	HG-SR(B)		○	
			HC-SFS(B)G1(H)▲		HG-SR(B)G1(H)▲		○	
			HC-SFS(B)G2▲		HG-SR(B)G7▲		×	(Note 3)
			HC-SFS(B)G5▲		HG-SR(B)G5▲		○	
			HC-SFS(B)G7▲		HG-SR(B)G7▲		○	
		HC-RFS	HC-RFS(B)	HG-RR	HG-RR(B)		○	
			HC-RFS(B)G2▲	HG-SR	HG-SR(B)G7▲		×	(Note 3)
			HC-RFS(B)G5▲		HG-SR(B)G5▲		×	
			HC-RFS(B)G7▲		HG-SR(B)G7▲		×	
		HC-LFS	HC-LFS(B)	HG-JR	HG-JR(B)		×	
		HC-UFS	HC-UFS(B)2000r/min	HG-UR	HG-UR(B)		○	
			HC-UFS(B)3000r/min	HG-KR	HG-KR(B)		×	
		HA-LFS (7kW or less)	HA-LFS	HG-SR	HG-SR		×	(Note 3)
		HA-LFS (11kW or more)	HA-LFS(B)	HG-JR	HG-JR(B)		×	
	Moment of inertia	HC-KFS		HG-KR			△	(Note 4)
		HC-MFS		HG-MR			○	
		HC-SFS		HG-SR			△	(Note 4)
		HC-RFS		HG-RR			○	
		HC-LFS		HG-JR			△	(Note 4)
		HC-UFS(B)2000r/min		HG-UR			○	
		HC-UFS(B)3000r/min		HG-KR			△	(Note 4)
		HA-LFS (7 kW or less)		HG-SR			△	
		HA-LFS (11 kW or more)		HG-JR			△	
	Connector (power supply/brake)	HC-KFS		HG-KR (different connector shape)		With conversion cable	○	
		HC-MFS		HG-MR (different connector shape)			○	
		HC-SFS		HG-SR (different connector shape)			△	(Note 5)
		HC-RFS		HG-RR			○	
		HC-LFS		HG-JR (different connector shape)			△	(Note 5)
		HC-UFS (B) 2000 r/min		HG-UR			○	
		HC-UFS (B) 3000 r/min		HG-KR (different connector shape)			○	
		HA-LFS (7 kW or less)		HG-SR (different connector shape)			○	
		HA-LFS (11 kW or more)		HG-JR (different connector shape)			△	(Note 8) (Note 9)

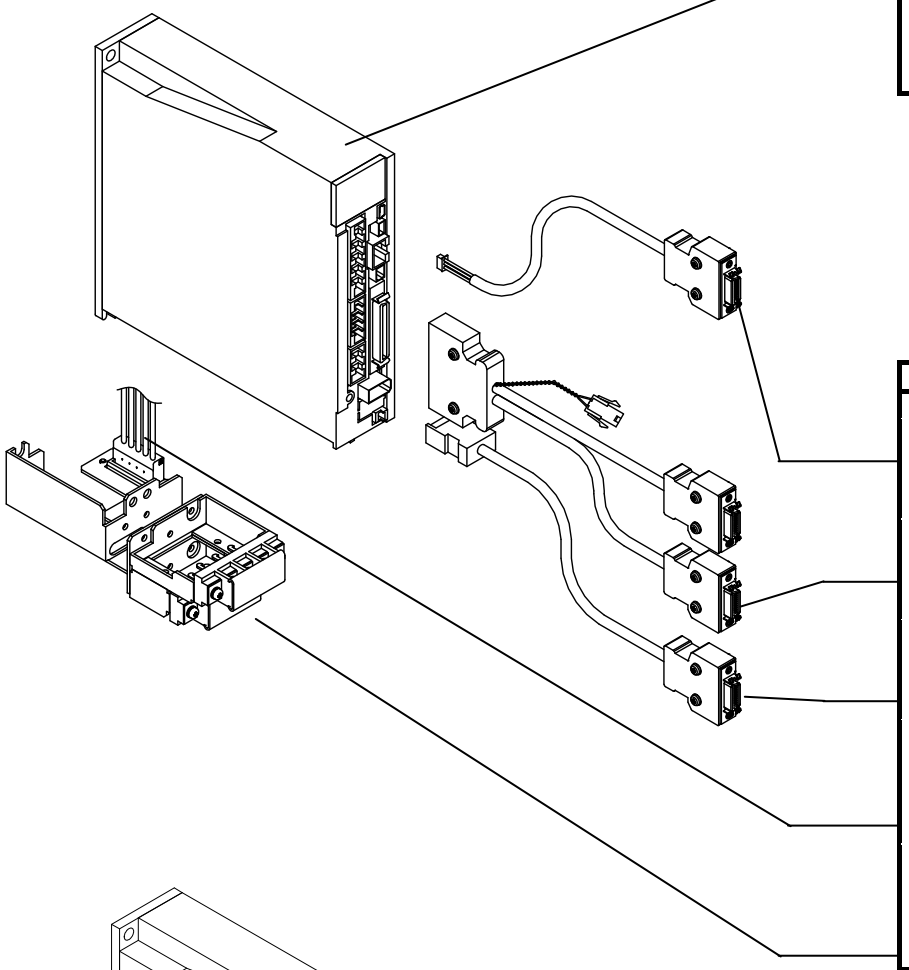
<Precautions>

Note
1. If the gain of the existing servo amplifier is extremely high, the characteristics may vary slightly after primary replacement. Be sure to specify a new gain setting.
2. Replacing the motor may change the actual reduction ratio. After verifying the motor's actual reduction ratio, be sure to adjust the electronic gear. For the motor specifications, refer to **Part 6 of the " Guide for Replacing MR-J2S / J2M　L (NA) 03092" issued by Mitsubishi Electric Corporation.**
3. When replacing the motor, note that the flange and shaft-end dimensions are not compatible. Therefore, the mounting area and the parts (coupling, pulley, etc.) which are connected to the servo motor shaft must be changed.
4. When replacing the motor, the new motor will have a different moment of inertia. Therefore use care with regard to the load inertia moment ratio. Depending on the existing system, it may be necessary to change the operation pattern. For the motor specifications, refer to **Part 6 of the "Guide for Replacing MR-J2S / J2M　L (NA) 03092" issued by Mitsubishi Electric Corporation.**
5. Laying a new electromagnetic brake cable is required when performing a secondary replacement or package replacement of a motor with brake.
6. Replacing an HC-KFS motor with an HG-KR motor will increase the maximum torque, possibly resulting in an excessive torque. To prevent this, be sure to check the torque command and the limit value, etc., and change them if necessary.
7. Replacing an HA-LFS11K, 15K motor with an HG-JR11K, 15K motor will render the existing thermal cable unnecessary. Terminal treatment work is therefore required.
8. If the HA-LFS22K1M motor is replaced with the HG-JR22K1M motor, it is necessary to change the crimp terminal of the existing power supply cable.
   (Screw size, UVW terminal: M8 → M10; grounding terminal: M6 → M10; thermistor terminal: M4 → M3.5)
9. If the existing motor is replaced with the HG-JR11K1M motor or JR15K1M motor, the replacement motor will not have a cooling fan and thermal terminal block. Because the existing wiring will become unnecessary, terminate the cables.

1．5　Renewal Tool Product Names

(1) For A types

(Example) Primary replacement (SC-J2SJ4KT02K)

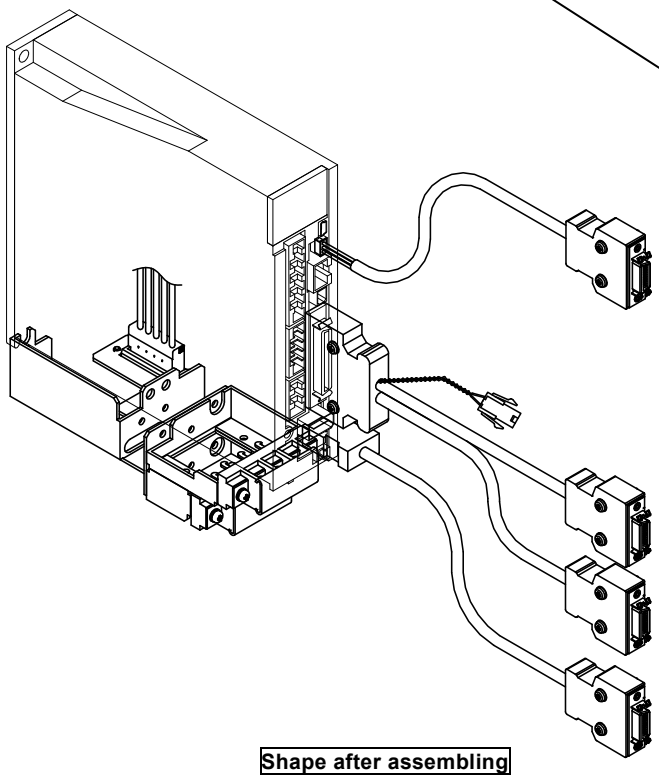


Name
Servo amplifier (MR-J4-_A_) Purchase from Mitsubishi Electric. **(Note 1)**

Name	
Renewal kit (SC-J2SJ4KT_K)	
	Monitor conversion cable **(Note2)** The MR-J2S-_A_ monitor signal is changed for MR-J4-_A.
	Control signal conversion cable The MR-J2S-_A_ control signal is changed for MR-J4-_A.
	Encoder conversion cable The MR-J2S-_A_ encoder signal is changed for MR-J4-_A_.
	Control power supply conversion terminal block Connect to the existing control power supply and regenerative option.
	Main circuit power supply conversion terminal block Connect to the existing main circuit power supply and servo motor power supply.

Note 1. For primary replacement, the software version of the amplifier differs depending on the corresponding motor. Contact Mitsubishi Electric for assistance.

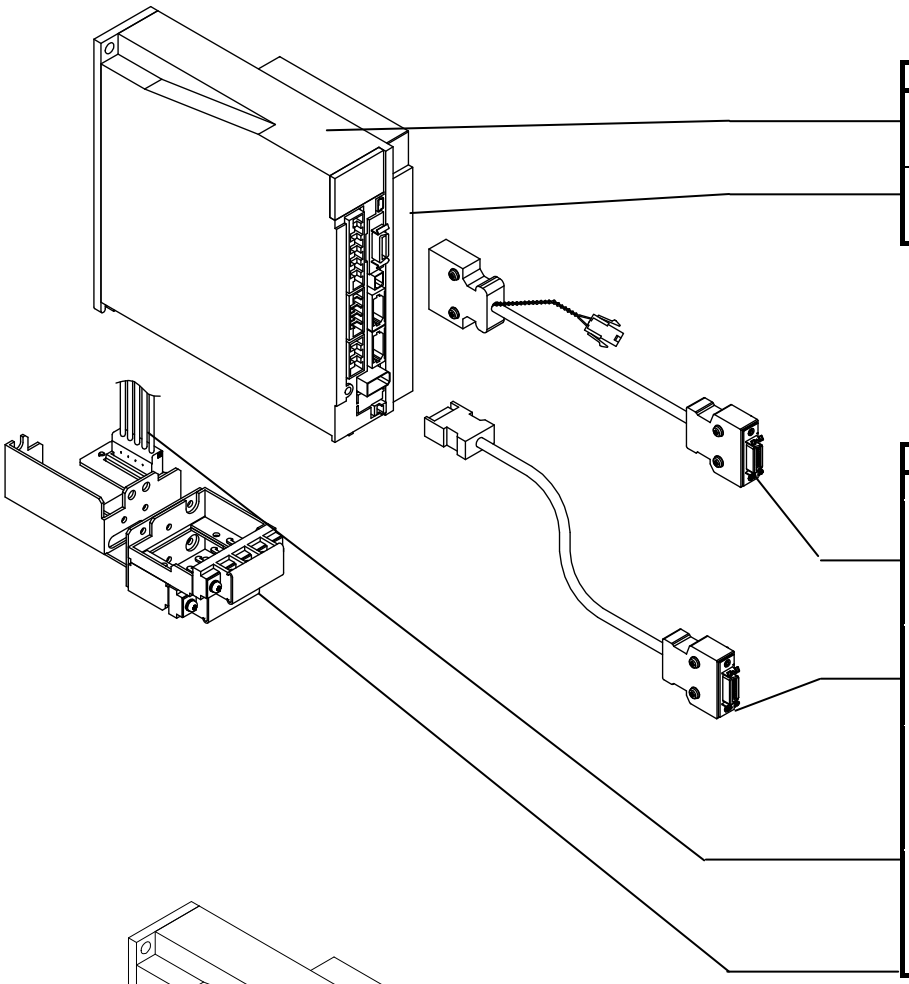
Note 2. The monitor conversion cable compatible with an amplifier capacity of 11 to 22 kW has a different shape.



Shape after assembling

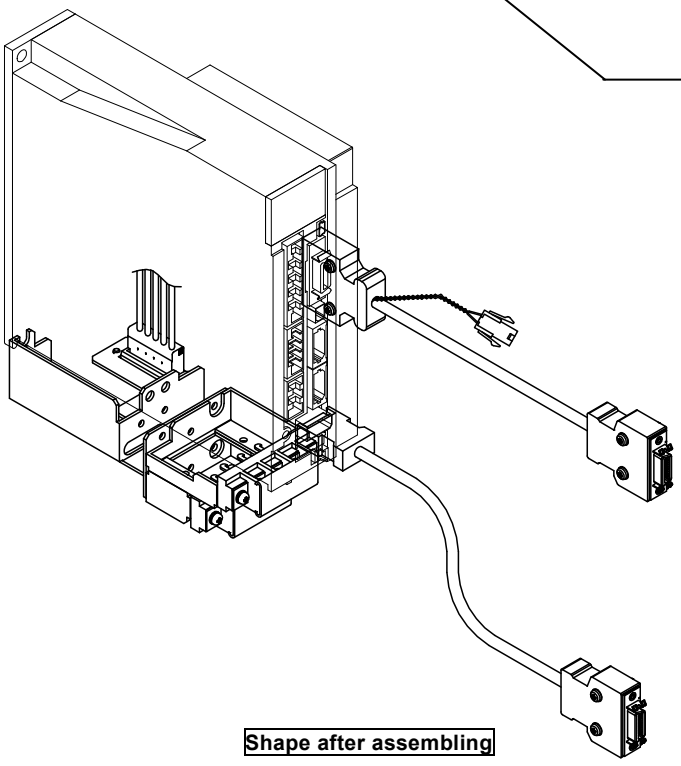
(2) For B types

(Example) Primary replacement (SC-J2SBJ4KT02K)



Name
Servo amplifier (MR-J4-_B-RJ020) Purchase from Mitsubishi Electric. **(Note 1)**
SSCNET conversion unit (MR-J4-T20) Purchase from Mitsubishi Electric.

Name	
Renewal kit (SC-J2SBJ4KT_K)	
	Control signal conversion cable **(Note 2)** The MR-J2S-_B_ control signal is changed for MR-J4-_B-RJ020.
	Encoder conversion cable The MR-J2S-_B_ encoder signal is changed for MR-J4-_B-RJ020.
	Control power supply conversion terminal block Connects to the existing control power supply and regenerative option.
	Main circuit power supply conversion terminal block Connects to the existing main circuit power supply and servo motor power supply.



Shape after assembling

Note 1. For primary replacement, the software version of the amplifier differs depending on the corresponding motor. Contact Mitsubishi Electric for assistance.

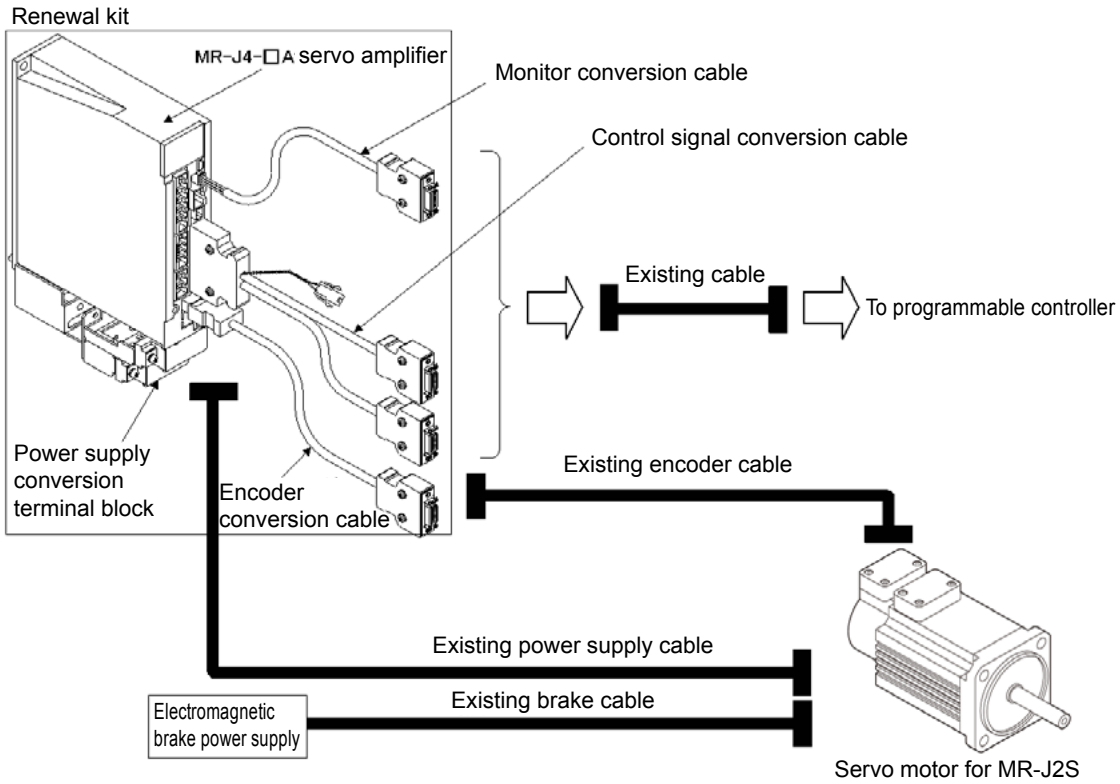
Note 2. The shape of the control signal conversion cable compatible with the 11 to 22 kW capacity amplifier varies.

1．6　Renewal Tool Configuration

(1) For A types

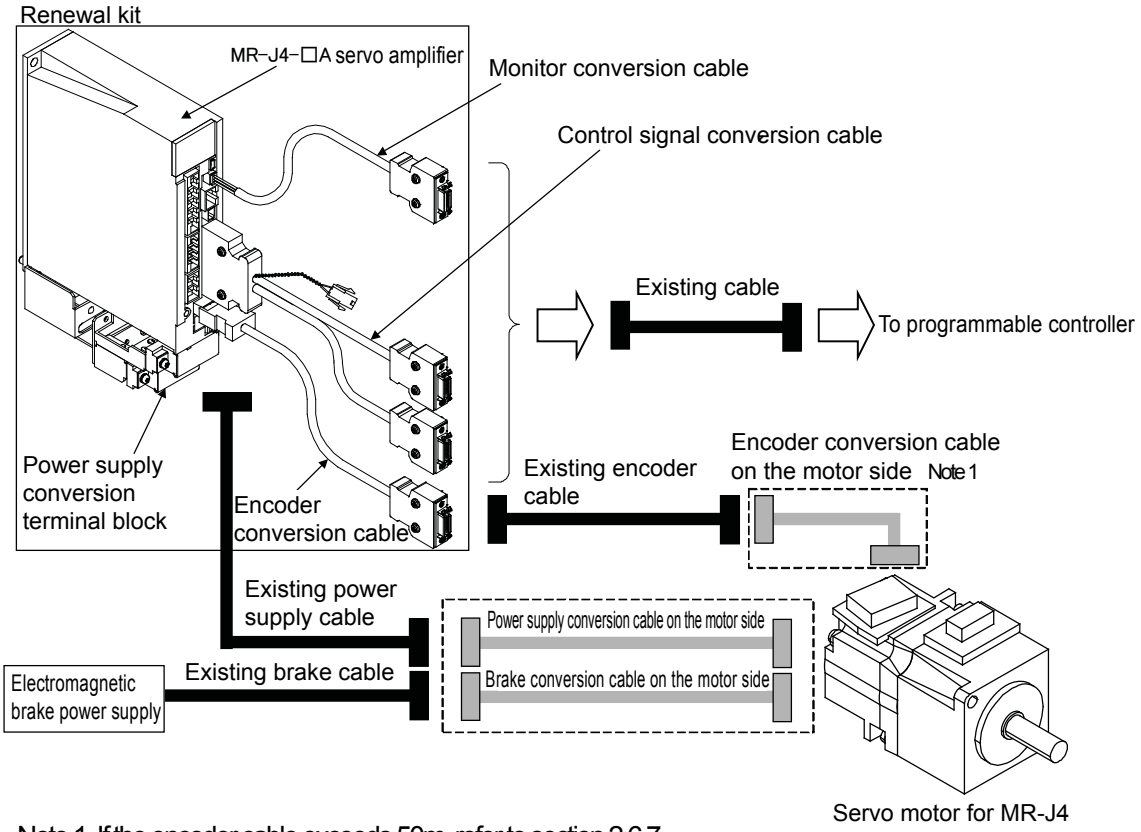
1) Primary replacement:

When replacing the servo amplifier only



2) Secondary replacement: When replacing the servo motor after replacing the servo amplifier

Package replacement: When replacing the servo amplifier and the servo motor simultaneously

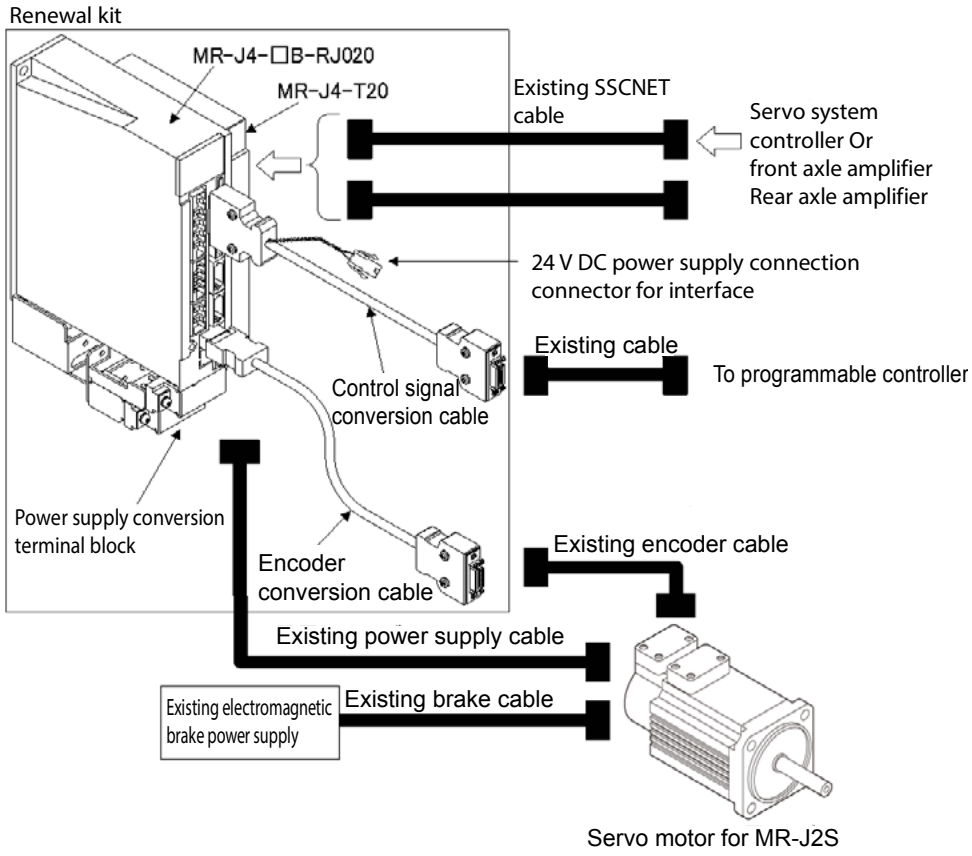


Note 1 If the encoder cable exceeds 50m, refer to section 2.6.7.

(2) For B types

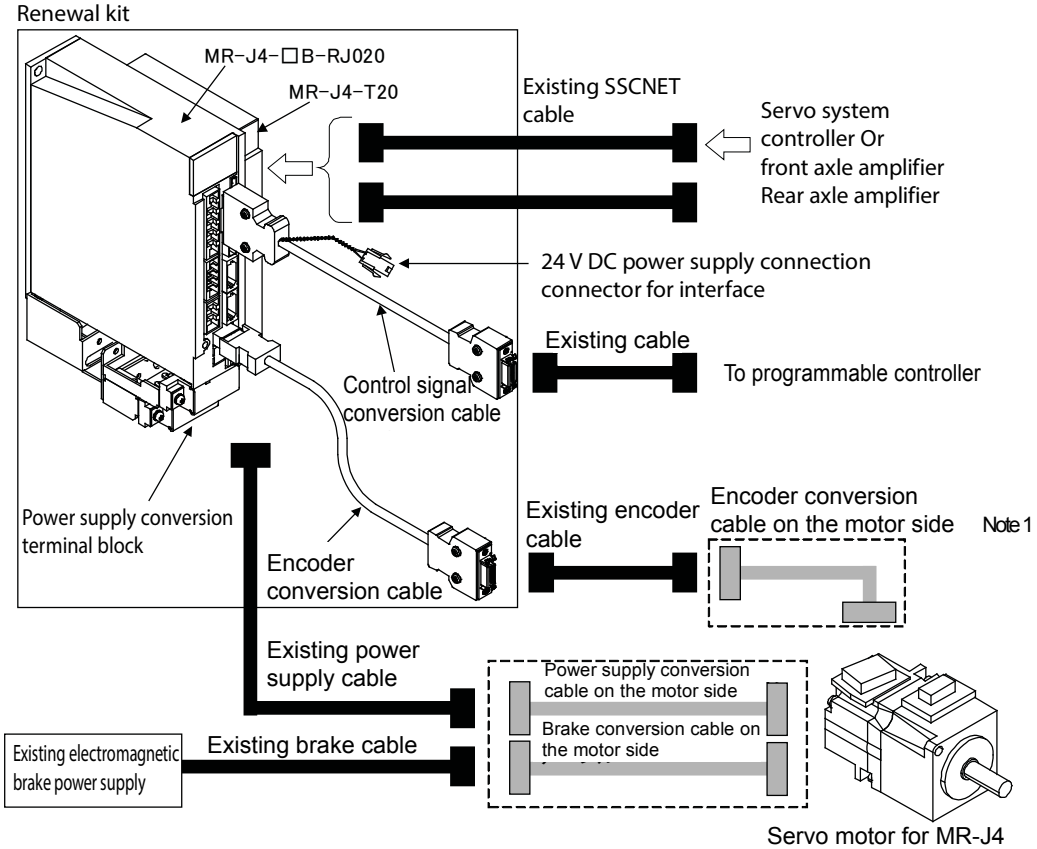
1) Primary replacement:

When replacing the servo amplifier only



2) Secondary replacement: When replacing the servo motor after replacing the servo amplifier

Package replacement: When replacing the servo amplifier and the servo motor simultaneously



Note 1 If the encoder cable exceeds 50m, refer to section 2.6.7.

1.7 List of Renewal Tool products

(1) For A types

No.	Product name	Model	Application	Replacement method
1	Renewal kit	SC-J2SJ4KT02K	MR-J4-_A servo amplifier capacity: For 100 W, 200 W	Used for primary replacement and package replacement.
2		SC-J2SJ4KT06K	MR-J4-_A servo amplifier capacity: For 400 W, 600 W	
3		SC-J2SJ4KT1K	MR-J4-_A servo amplifier capacity: For 700 W, 1 kW	
4		SC-J2SJ4KT3K	MR-J4-_A servo amplifier capacity: For 2 kW, 3.5 kW	
5		SC-J2SJ4KT5K	MR-J4-_A servo amplifier capacity: For 5 kW	
6		SC-J2SJ4KT7K	MR-J4-_A servo amplifier capacity: For 7 kW	
7		SC-J2SJ4KT15K	MR-J4-_A servo amplifier capacity: For 11 kW, 15 kW	
8		SC-J2SJ4KT22K	MR-J4-_A servo amplifier capacity: For 22 kW	
9	Amplifier side conversion cable set	SC-J2SJ4CSET-01 (for 7 kW or less)	Control signal conversion cable (SC-J2SJ4CTC03M)	
			Encoder conversion cable (SC-J2SJ4ENC03M)	
			Monitor conversion cable (SC-J2SJ4MOC03M)	
			24 V DC connector cable (SC-J2SJ4CTPWC5M)	
10		SC-J2SJ4CSET-02 (for 11 kW or more)	Control signal conversion cable (SC-J2SJ4CTC03M)	
			Encoder conversion cable (SC-J2SJ4ENC03M)	
			Monitor conversion cable (SC-J2SJ4MO2C03M)	
			24 V DC connector cable (SC-J2SJ4CTPWC5M)	

(2) For B types

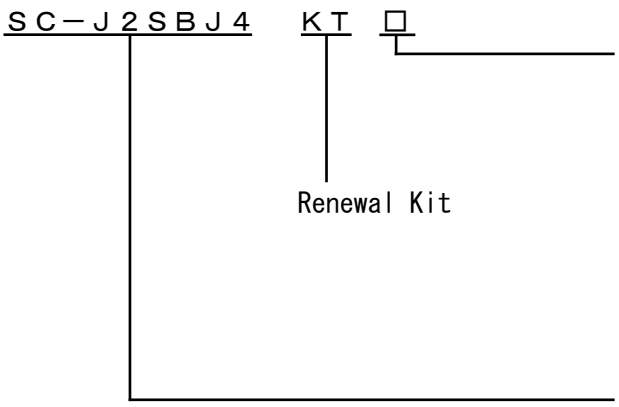
No.	Product name	Model	Application	Replacement method
1	Renewal kit	SC-J2SBJ4KT02K	MR-J4-_A servo amplifier capacity: For 100 W, 200 W	Used for primary replacement and package replacement.
2		SC-J2SBJ4KT06K	MR-J4-_A servo amplifier capacity: For 400 W, 600 W	
3		SC-J2SBJ4KT1K	MR-J4-_A servo amplifier capacity: For 700 W, 1 kW	
4		SC-J2SBJ4KT3K	MR-J4-_A servo amplifier capacity: For 2 kW, 3.5 kW	
5		SC-J2SBJ4KT5K	MR-J4-_A servo amplifier capacity: For 5 kW	
6		SC-J2SBJ4KT7K	MR-J4-_A servo amplifier capacity: For 7 kW	
7		SC-J2SBJ4KT15K	MR-J4-_A servo amplifier capacity: For 11 kW, 15 kW	
8		SC-J2SBJ4KT22K	MR-J4-_A servo amplifier capacity: For 22 kW	
9	Amplifier side conversion cable set	SC-J2SBJ4CSET-01 (for 7 kW or less)	Control signal conversion cable (SC-J2SBJ4CTC03M)	
			Encoder conversion cable (SC-J2SBJ4ENC03M)	
			24 V DC connector cable (SC-J2SBJ4CTPWC5M)	
10		SC-J2SBJ4CSET-02 (for 11 kW or more)	Control signal conversion cable (SC-J2SBJ4CTC03M)	
			Encoder conversion cable (SC-J2SBJ4ENC03M)	
			24 V DC connector cable (SC-J2SBJ4CTPWC5M)	

(3) Common (Motor side conversion cable)

No.	Product name	Model	Application	Replacement method
1	Power supply conversion Cable	SC-J2SJ4PW1C03M-A1	For HC-KFS, HC-MFS → HG-KR, HG-MR, Load-side	Used for secondary replacement and package replacement.
2		SC-J2SJ4PW1C03M-A2	For HC-KFS, HC-MFS → HG-KR, HG-MR, Anti-load side	
3		SC-J2SJ4PWBK1C03M-A1	For HC-KFS, HC-MFS → HG-KR, HG-MR, Load-side (With brake)	
4		SC-J2SJ4PWBK1C03M-A2	For HC-KFS, HC-MFS → HG-KR, HG-MR, Anti-load side (With brake)	
5		SC-SAJ3PW2KC1M-S2	For HC-SFS → HG-SR	
6		SC-HAJ3PW1C1M		
7		SC-J2SJ4PW2C1M	For HC-RFS203 with reducer → HG-SR202 with reducer	
8		SC-J2SJ4PW3C1M-■	For HA-LFS11K1M/15K1M → HG-JR11K1M/15K1M	
9	Encoder conversion cable	SC-HAJ3ENM1C03M-A1	For HC-KFS, HC-MFS → HG-KR, HG-MR, Anti-load-side	
10		SC-HAJ3ENM1C03M-A2	For HC-KFS, HC-MFS → HG-KR, HG-MR, Anti-load side	
11		SC-HAJ3ENM3C1M	For HC-SFS → HG-SR	
12	Brake conversion Cable	SC-BKC1CBL1M-L	For HC-SFS → HG-SR	
13	Cooling fan conversion cable	SC-J2SJ4FAN1C1M	For HA-LFS22K1M → HG-JR22K1M	

Configuration of Renewal Tool

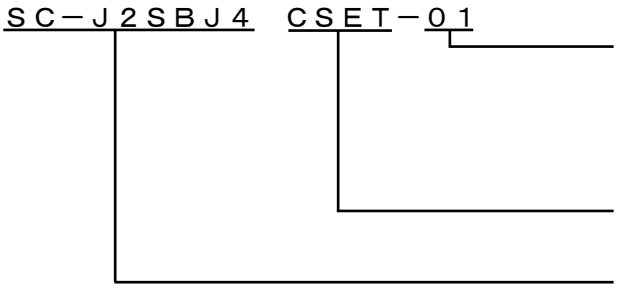
<Type Name of Renewal Kit>



Code	Capacity of Servo Amplifier MR-J4-□A
02K	100W、200W
06K	400W、600W
1K	700W、1kW
3K	2kW、3.5kW
5K	5kW
7K	7kW
15K	11kW、15kW
22K	22kW

Code	Compatibility
J2SJ4	For Multi-purpose interface (Type A)
J2SBJ4	For SSCNET interface (Type B)

<Type Name of Conversion Cable Set on Amplifier Side>



Code	Classification of Power Control
01	For 7kW or lower
02	For 11kW or higher

Code	Classification of Use
CSET	Cable set

Code	Compatibility
J2SJ4	For Multi-purpose interface (Type A)
J2SBJ4	For SSCNET interface (Type B)

<Type Name of Conversion Cable on Motor Side>

・Power conversion cable on motor side

・Encoder conversion cable on motor side

・Brake conversion cable on motor side

ＳＣ－Ｊ２ＳＪ４ＥＮＭ１　Ｃ □Ｍ　－■

Code	Classification of Connection Side
A1	On load side
A2	On non-load side

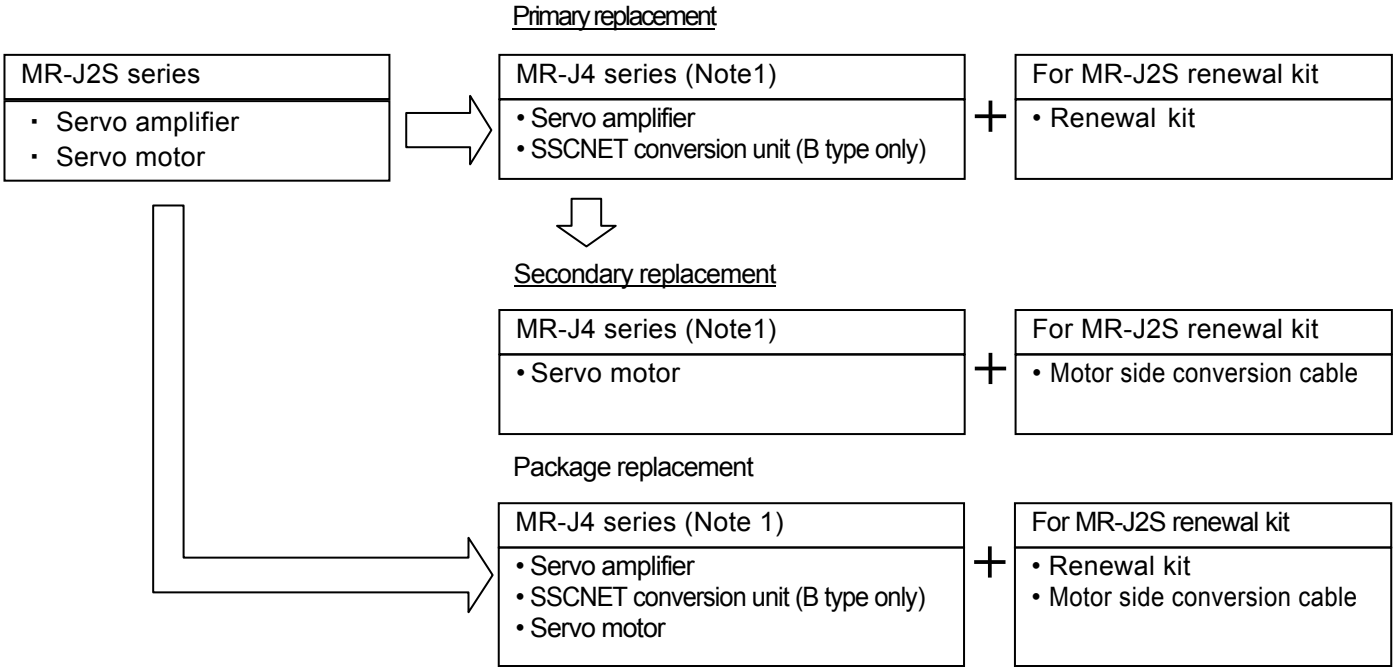
Code	Cable Length [m]
03M	0.3
05M	0.5
1M	1.0

Code	Classification by Connection
Power Conversion Cable on Motor Side	
J2SJ4PW1	For HC-KFS, HC-MFS to HG-KR, HG-MR
J2SJ4PWBK1	For HC-KFS, HC-MFS to HG-KR, HG-MR (with brake)
SAJ3PW2K	For HC-SFS to HG-SR
HAJ3PW1	
J2SJ4PW2	For HC-RFS203 with decelerator to HG-SR202 with decelerator
J2SJ4PW3	For HA-LFS11K1M/15K1M to HG-JR11K1M/15K1M
Encoder Conversion Cable on Motor Side	
HAJ3ENM1	For HC-KFS, HC-MFS to HG-KR, HG-MR
HAJ3ENM3	For HC-SFS to HG-SR
Brake Conversion Cable on Motor Side	
BKC1CBL	For HC-SFS to HG-SR
Cooling Fan Conversion Cable on Motor Side	
J2SJ4FAN1	For HA-LFS22K1M to HG-JR22K1M

Section 2　Selecting the MR-J2S Renewal Tool

2.1　Basic Configuration

[Before replacement]



Note 1.　Please purchase the Mitsubishi Electric Corporation MR-J4 series servo amplifier and servo motor.

2.2　Precautions for Replacement

(1) Please note that replacement may not be possible when multiple units are set in a line due to the clearance between the servo amplifiers, the model, and the number of units. (See Chapter 7 of this Appendix regarding the dimensions)
(2) Depending on the condition of the existing setup, sometimes noise reduction techniques are necessary when replacing. Check Section 6.2 regarding noise reduction techniques.
(3) When using the existing cables, please consider the remaining life of the cables. If deterioration is significant, replacing with a new cable is recommended.
(4) Because the conversion cable does not have a long bending life, fix the cable when using.
(5) Contact us if using an encoder cable longer than 50 m with long distance wiring. (For secondary and package replacement) Contact us when replacing with an HG-KR or MR motor if the existing encoder cable is longer than 30 m.
(6) No oil seal is attached to the standard type MR-J4 servo motor. Take care when selecting if the existing MR-J2S servo motor has an attached oil seal. Contact a sales representative if a servo motor with an oil seal is required.
(7) Depending on machine conditions (inertia, load, etc.), there is a possibility of insufficient servo amplifier capacity after replacement. Carefully consider the capacity in relation to the replacement.
(8) Although use of dynamic brake resistance standardly equipped to the replacement MR-J4 servo amplifier is possible, take care because the coasting distance differs depending on the characteristics of the dynamic brake. In addition, do not use dynamic braking at high frequencies.
(9) Check Section 2.7 of this document for important points to note when using optional or peripheral equipment.
(10) If the existing MR-J2S servo amplifier or servo motor is a special product, contact Mitsubishi Electric Corporation for assistance.
(11) Although the motor model of the MR-J2S-series motor may not be displayed properly with MR Configurator2, this is normal. Do not use the MR Configurator2 advanced functions (machine analyzer, gain search, machine simulation, etc.) because they do not work accurately.

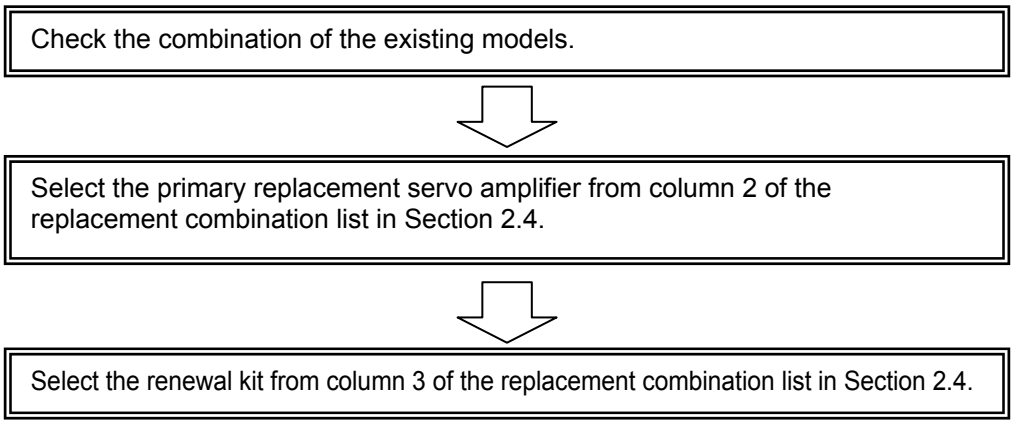
2．3　Selecting the Product

2．3．1　Flow of Selection for Replacement

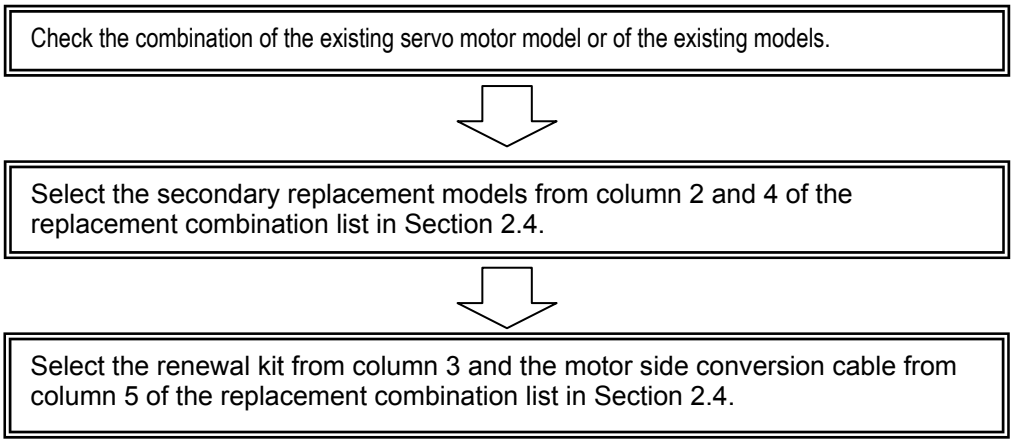
> ⚠CAUTION
>
> ● Because some existing HC-KFS46, HC-KFS410, HC-RFS, HC-LFS, and HA-LFS series motors differ in primary replacement amplifiers and secondary/package replacement amplifiers, the selection method may differ from the following flow. For details, see section 2.3.1, item 2.

(1) Replacement selection flow (For existing motors other than HC-KFS46, HC-KFS410, HC-RFS, HC-LFS, and HA-LFS series)

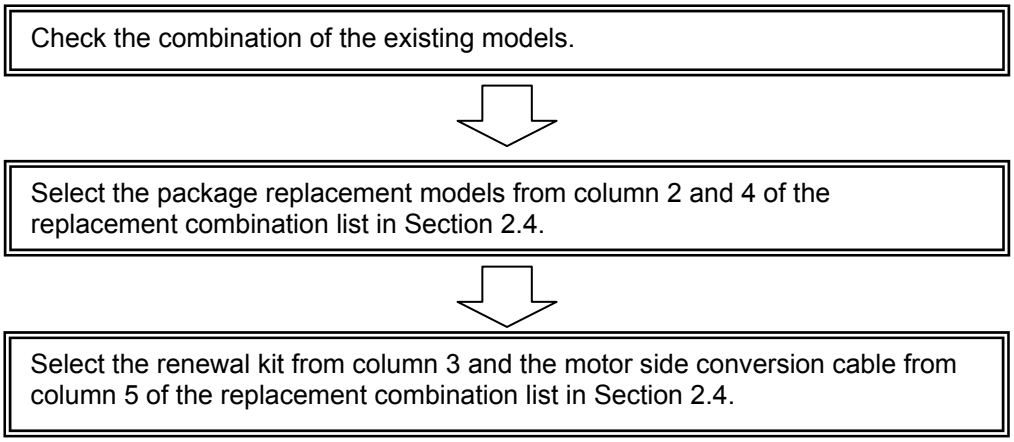
1) Primary replacement menu



2) Secondary replacement menu

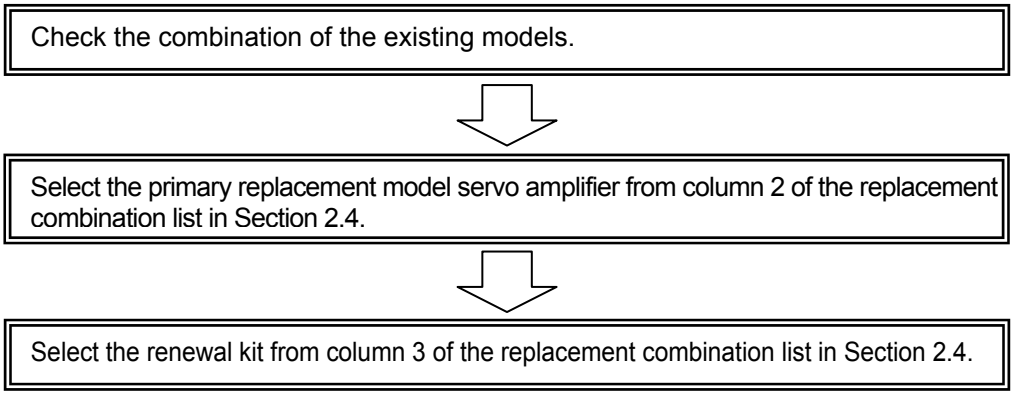


3) Package replacement menu

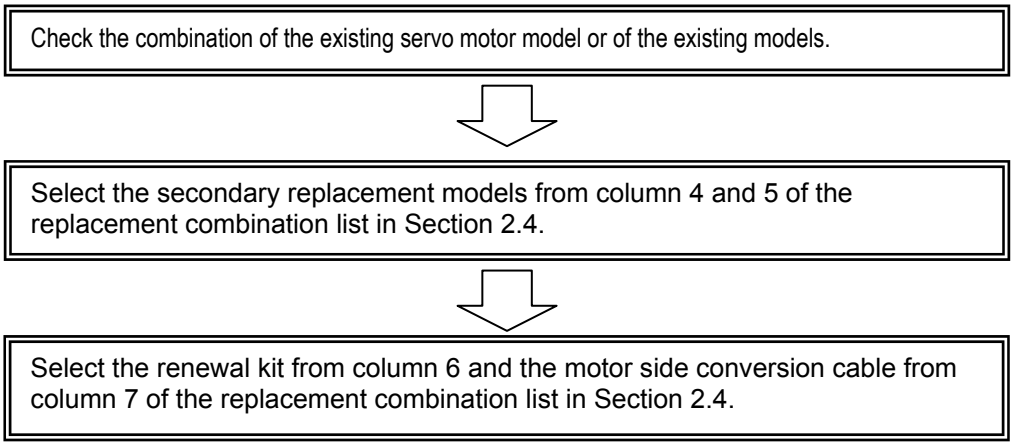


(2) Replacement selection flow (For existing HC-KFS46, HC-KFS410, HC-RFS, HC-LFS, and HA-LFS series motors)

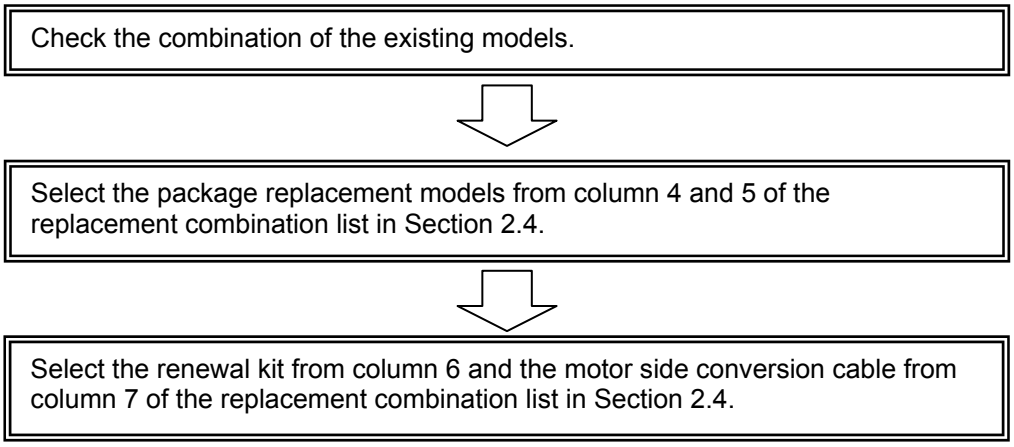
1) Primary replacement menu



2) Secondary replacement menu



3) Package replacement menu



2．4 Table of Replacement Combinations

2．4．1 A Type Replacement Combination Table

(1) Existing HC-KFS motor series (standard/with brake, G1, G2 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)	(3)	(4)		(5)		
Existing model (Note 13)		Primary/secondary/Package replacement models (Note 5, 14)		Secondary replacement/Package replacement models				
Servo amplifier model	Servo motor Model	Servo amplifier model (Note 1, 12)	Renewal kit model	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model: Power supply conversion cable	Motor side conversion cable model: Encoder conversion cable	Motor side conversion cable model: Brake conversion cable
[Small capacity/low inertia HC-KFS series, standard/with brake] ((B) represents models with brake)								
MR-J2S-10A	HC-KFS053 (B)	MR-J4-10A	SC-J2SJ4KT02K	HG-KR053 (B)	△ (Note 4)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-KFS13 (B)			HG-KR13 (B)				
MR-J2S-20A	HC-KFS23 (B)	MR-J4-20A		HG-KR23 (B)				
MR-J2S-40A	HC-KFS43 (B)	MR-J4-40A	SC-J2SJ4KT06K	HG-KR43 (B)				
MR-J2S-70A	HC-KFS73 (B)	MR-J4-70A	SC-J2SJ4KT1K	HG-KR73 (B)				
[Small capacity/low inertia HC-KFS series with general reducer (G1)] ((B) represents models with brake)								
MR-J2S-10A	HC-KFS053 (B) G1 1/5	MR-J4-10A	SC-J2SJ4KT02K	HG-KR053 (B) G1 1/5	△ (Note 4)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-KFS053 (B) G1 1/12			HG-KR053 (B) G1 1/12				
	HC-KFS053 (B) G1 1/20			HG-KR053 (B) G1 1/20				
	HC-KFS13 (B) G1 1/5			HG-KR13 (B) G1 1/5				
	HC-KFS13 (B) G1 1/12			HG-KR13 (B) G1 1/12				
	HC-KFS13 (B) G1 1/20			HG-KR13 (B) G1 1/20				
MR-J2S-20A	HC-KFS23 (B) G1 1/5	MR-J4-20A		HG-KR23 (B) G1 1/5				
	HC-KFS23 (B) G1 1/12			HG-KR23 (B) G1 1/12 (Note 2)				
	HC-KFS23 (B) G1 1/20			HG-KR23 (B) G1 1/20 (Note 2)				
MR-J2S-40A	HC-KFS43 (B) G1 1/5	MR-J4-40A	SC-J2SJ4KT06K	HG-KR43 (B) G1 1/5				
	HC-KFS43 (B) G1 1/12			HG-KR43 (B) G1 1/12 (Note 2)				
	HC-KFS43 (B) G1 1/20			HG-KR43 (B) G1 1/20 (Note 2)				
MR-J2S-70A	HC-KFS73 (B) G1 1/5	MR-J4-70A	SC-J2SJ4KT1K	HG-KR73 (B) G1 1/5				
	HC-KFS73 (B) G1 1/12			HG-KR73 (B) G1 1/12 (Note 2)				
	HC-KFS73 (B) G1 1/20			HG-KR73 (B) G1 1/20				
[Small capacity/low inertia HC-KFS series with high-precision reducer (G2)] ((B) represents models with brake)								
MR-J2S-10A	HC-KFS053 (B) G2 1/5	MR-J4-10A	SC-J2SJ4KT02K	HG-KR053 (B) G7 1/5	× (Note 3)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-KFS053 (B) G2 1/9			HG-KR053 (B) G7 1/11				
	HC-KFS053 (B) G2 1/20			HG-KR053 (B) G7 1/21				
	HC-KFS053 (B) G2 1/29			HG-KR053 (B) G7 1/33				
	HC-KFS13 (B) G2 1/5			HG-KR13 (B) G7 1/5				
	HC-KFS13 (B) G2 1/9			HG-KR13 (B) G7 1/11				
	HC-KFS13 (B) G2 1/20			HG-KR13 (B) G7 1/21				
	HC-KFS13 (B) G2 1/29			HG-KR13 (B) G7 1/33				
MR-J2S-20A	HC-KFS23 (B) G2 1/5	MR-J4-20A		HG-KR23 (B) G7 1/5				
	HC-KFS23 (B) G2 1/9			HG-KR23 (B) G7 1/11				
	HC-KFS23 (B) G2 1/20			HG-KR23 (B) G7 1/21				
	HC-KFS23 (B) G2 1/29			HG-KR23 (B) G7 1/33				
MR-J2S-40A	HC-KFS43 (B) G2 1/5	MR-J4-40A	SC-J2SJ4KT06K	HG-KR43 (B) G7 1/5				
	HC-KFS43 (B) G2 1/9			HG-KR43 (B) G7 1/11				
	HC-KFS43 (B) G2 1/20			HG-KR43 (B) G7 1/21				
	HC-KFS43 (B) G2 1/29			HG-KR43 (B) G7 1/33				
MR-J2S-70A	HC-KFS73 (B) G2 1/5	MR-J4-70A	SC-J2SJ4KT1K	HG-KR73 (B) G7 1/5				
	HC-KFS73 (B) G2 1/9			HG-KR73 (B) G7 1/11				
	HC-KFS73 (B) G2 1/20			HG-KR73 (B) G7 1/21				
	HC-KFS73 (B) G2 1/29			HG-KR73 (B) G7 1/33				

See page 2-26 for important points to note.

(2) Existing HC-KFS motor series (G5, G7 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)	(3)	(4)		(5)		
Existing model (Note 13)		Primary/secondary/Package replacement models (Note 5, 14)		Secondary replacement/Package replacement models				
Servo amplifier model	Servo motor Model	Servo amplifier model (Note 1, 12)	Renewal kit model	Servo motor model (Note 1)	Compatibility	Motor side conversion cable model: Power supply conversion cable	Motor side conversion cable model: Encoder conversion cable	Motor side conversion cable model: Brake conversion cable
[Small capacity/low inertia HC-KFS series with high-precision reducer, flange output type (G5)] ((B) represents models with brake)								
MR-J2S-10A	HC-KFS053 (B) G5 1/5	MR-J4-10A	SC-J2SJ4KT02K	HG-KR053 (B) G5 1/5	△ (Note 4)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-KFS053 (B) G5 1/11			HG-KR053 (B) G5 1/11				
	HC-KFS053 (B) G5 1/21			HG-KR053 (B) G5 1/21				
	HC-KFS053 (B) G5 1/33			HG-KR053 (B) G5 1/33				
	HC-KFS053 (B) G5 1/45			HG-KR053 (B) G5 1/45				
	HC-KFS13 (B) G5 1/5			HG-KR13 (B) G5 1/5				
	HC-KFS13 (B) G5 1/11			HG-KR13 (B) G5 1/11				
	HC-KFS13 (B) G5 1/21			HG-KR13 (B) G5 1/21				
	HC-KFS13 (B) G5 1/33			HG-KR13 (B) G5 1/33				
	HC-KFS13 (B) G5 1/45			HG-KR13 (B) G5 1/45				
MR-J2S-20A	HC-KFS23 (B) G5 1/5	MR-J4-20A		HG-KR23 (B) G5 1/5				
	HC-KFS23 (B) G5 1/11			HG-KR23 (B) G5 1/11				
	HC-KFS23 (B) G5 1/21			HG-KR23 (B) G5 1/21				
	HC-KFS23 (B) G5 1/33			HG-KR23 (B) G5 1/33				
	HC-KFS23 (B) G5 1/45			HG-KR23 (B) G5 1/45				
MR-J2S-40A	HC-KFS43 (B) G5 1/5	MR-J4-40A	SC-J2SJ4KT06K	HG-KR43 (B) G5 1/5				
	HC-KFS43 (B) G5 1/11			HG-KR43 (B) G5 1/11				
	HC-KFS43 (B) G5 1/21			HG-KR43 (B) G5 1/21				
	HC-KFS43 (B) G5 1/33			HG-KR43 (B) G5 1/33				
	HC-KFS43 (B) G5 1/45			HG-KR43 (B) G5 1/45				
MR-J2S-70A	HC-KFS73 (B) G5 1/5	MR-J4-70A	SC-J2SJ4KT1K	HG-KR73 (B) G5 1/5				
	HC-KFS73 (B) G5 1/11			HG-KR73 (B) G5 1/11				
	HC-KFS73 (B) G5 1/21			HG-KR73 (B) G5 1/21				
	HC-KFS73 (B) G5 1/33			HG-KR73 (B) G5 1/33				
	HC-KFS73 (B) G5 1/45			HG-KR73 (B) G5 1/45				
[Small capacity/low inertia HC-KFS series with high-precision reducer, shaft output type (G7)] ((B) represents models with brake)								
MR-J2S-10A	HC-KFS053 (B) G7 1/5	MR-J4-10A	SC-J2SJ4KT02K	HG-KR053 (B) G7 1/5	△ (Note 4)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-KFS053 (B) G7 1/11			HG-KR053 (B) G7 1/11				
	HC-KFS053 (B) G7 1/21			HG-KR053 (B) G7 1/21				
	HC-KFS053 (B) G7 1/33			HG-KR053 (B) G7 1/33				
	HC-KFS053 (B) G7 1/45			HG-KR053 (B) G7 1/45				
	HC-KFS13 (B) G7 1/5			HG-KR13 (B) G7 1/5				
	HC-KFS13 (B) G7 1/11			HG-KR13 (B) G7 1/11				
	HC-KFS13 (B) G7 1/21			HG-KR13 (B) G7 1/21				
	HC-KFS13 (B) G7 1/33			HG-KR13 (B) G7 1/33				
	HC-KFS13 (B) G7 1/45			HG-KR13 (B) G7 1/45				
MR-J2S-20A	HC-KFS23 (B) G7 1/5	MR-J4-20A		HG-KR23 (B) G7 1/5				
	HC-KFS23 (B) G7 1/11			HG-KR23 (B) G7 1/11				
	HC-KFS23 (B) G7 1/21			HG-KR23 (B) G7 1/21				
	HC-KFS23 (B) G7 1/33			HG-KR23 (B) G7 1/33				
	HC-KFS23 (B) G7 1/45			HG-KR23 (B) G7 1/45				
MR-J2S-40A	HC-KFS43 (B) G7 1/5	MR-J4-40A	SC-J2SJ4KT06K	HG-KR43 (B) G7 1/5				
	HC-KFS43 (B) G7 1/11			HG-KR43 (B) G7 1/11				
	HC-KFS43 (B) G7 1/21			HG-KR43 (B) G7 1/21				
	HC-KFS43 (B) G7 1/33			HG-KR43 (B) G7 1/33				
	HC-KFS43 (B) G7 1/45			HG-KR43 (B) G7 1/45				
MR-J2S-70A	HC-KFS73 (B) G7 1/5	MR-J4-70A	SC-J2SJ4KT1K	HG-KR73 (B) G7 1/5				
	HC-KFS73 (B) G7 1/11			HG-KR73 (B) G7 1/11				
	HC-KFS73 (B) G7 1/21			HG-KR73 (B) G7 1/21				
	HC-KFS73 (B) G7 1/33			HG-KR73 (B) G7 1/33				
	HC-KFS73 (B) G7 1/45			HG-KR73 (B) G7 1/45				

See page 2-26 for important points to note.

(3) Existing HC-KFS46, KFS410 motor

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)	(3)	(4)	(5)		(6)	(7)		
Existing model (Note 13)		Primary replacement model (Note 5)		Secondary replacement/Package replacement models						
Servo amplifier model	Servo motor model	Servo amplifier model (Note 1, 12)	Renewal kit model	Servo amplifier model (Note 1)	Servo motor Model (Note 1)	Compatibility	Renewalkit model	Power supply conversion cable	Encoder conversion cable	Brake conversion cable
[Small capacity/low inertia HC-KFS series, standard/with brake] ((B) represents models with brake)										
MR-J2S-70A	HC-KFS46 HC-KFS410	MR-J4-70A (Note 10)	SC-J2SJ4KT1K	MR-J4-40A (Note 10)	HG-KR43	△ (Note 4) (Note 15)	(Note 11)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.

See page 2-26 for important points to note.

(4) Existing HC-MFS motor series (standard/with brake, G1, G2 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)	(3)	(4)		(5)		
Existing model (Note 13)		Primary/secondary/Package replacement models (Note 5, 14)		Secondary replacement/Package replacement models				
Servo amplifier model	Servo motor Model	Servo amplifier model (Note 1, 12)	Renewal kit model	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model: Power supply conversion cable	Motor side conversion cable model: Encoder conversion cable	Motor side conversion cable model: Brake conversion cable
[Small capacity/ultra-low inertia HC-MFS series, standard/with brake] ((B) represents models with brake)								
MR-J2S-10A	HC-MFS053 (B)	MR-J4-10A	SC-J2SJ4KT02K	HG-MR053 (B)	○	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-MFS13 (B)			HG-MR13 (B)				
MR-J2S-20A	HC-MFS23 (B)	MR-J4-20A		HG-MR23 (B)				
MR-J2S-40A	HC-MFS43 (B)	MR-J4-40A	SC-J2SJ4KT06K	HG-MR43 (B)				
MR-J2S-70A	HC-MFS73 (B)	MR-J4-70A	SC-J2SJ4KT1K	HG-MR73 (B)				
[Small capacity/ultra-low inertia HC-MFS series with general reducer (G1)] ((B) represents models with brake)								
MR-J2S-10A	HC-MFS053 (B) G1 1/5	MR-J4-10A	SC-J2SJ4KT02K	HG-KR053 (B) G1 1/5	△ (Note 4)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-MFS053 (B) G1 1/12			HG-KR053 (B) G1 1/12				
	HC-MFS053 (B) G1 1/20			HG-KR053 (B) G1 1/20				
	HC-MFS13 (B) G1 1/5			HG-KR13 (B) G1 1/5				
	HC-MFS13 (B) G1 1/12			HG-KR13 (B) G1 1/12				
	HC-MFS13 (B) G1 1/20			HG-KR13 (B) G1 1/20				
MR-J2S-20A	HC-MFS23 (B) G1 1/5	MR-J4-20A		HG-KR23 (B) G1 1/5				
	HC-MFS23 (B) G1 1/12			HG-KR23 (B) G1 1/12 (Note 2)				
	HC-MFS23 (B) G1 1/20			HG-KR23 (B) G1 1/20 (Note 2)				
MR-J2S-40A	HC-MFS43 (B) G1 1/5	MR-J4-40A	SC-J2SJ4KT06K	HG-KR43 (B) G1 1/5				
	HC-MFS43 (B) G1 1/12			HG-KR43 (B) G1 1/12 (Note 2)				
	HC-MFS43 (B) G1 1/20			HG-KR43 (B) G1 1/20 (Note 2)				
MR-J2S-70A	HC-MFS73 (B) G1 1/5	MR-J4-70A	SC-J2SJ4KT1K	HG-KR73 (B) G1 1/5				
	HC-MFS73 (B) G1 1/12			HG-KR73 (B) G1 1/12 (Note 2)				
	HC-MFS73 (B) G1 1/20			HG-KR73 (B) G1 1/20				
[Small capacity/ultra-low inertia HC-MFS series with high-precision reducer (G2)] ((B) represents models with brake)								
MR-J2S-10A	HC-MFS053 (B) G2 1/5	MR-J4-10A	SC-J2SJ4KT02K	HG-KR053 (B) G7 1/5	× (Note 3) (Note 4)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-MFS053 (B) G2 1/9			HG-KR053 (B) G7 1/11				
	HC-MFS053 (B) G2 1/20			HG-KR053 (B) G7 1/21				
	HC-MFS053 (B) G2 1/29			HG-KR053 (B) G7 1/33				
	HC-MFS13 (B) G2 1/5			HG-KR13 (B) G7 1/5				
	HC-MFS13 (B) G2 1/9			HG-KR13 (B) G7 1/11				
	HC-MFS13 (B) G2 1/20			HG-KR13 (B) G7 1/21				
	HC-MFS13 (B) G2 1/29			HG-KR13 (B) G7 1/33				
MR-J2S-20A	HC-MFS23 (B) G2 1/5	MR-J4-20A		HG-KR23 (B) G7 1/5				
	HC-MFS23 (B) G2 1/9			HG-KR23 (B) G7 1/11				
	HC-MFS23 (B) G2 1/20			HG-KR23 (B) G7 1/21				
	HC-MFS23 (B) G2 1/29			HG-KR23 (B) G7 1/33				
MR-J2S-40A	HC-MFS43 (B) G2 1/5	MR-J4-40A	SC-J2SJ4KT06K	HG-KR43 (B) G7 1/5				
	HC-MFS43 (B) G2 1/9			HG-KR43 (B) G7 1/11				
	HC-MFS43 (B) G2 1/20			HG-KR43 (B) G7 1/21				
	HC-MFS43 (B) G2 1/29			HG-KR43 (B) G7 1/33				
MR-J2S-70A	HC-MFS73 (B) G2 1/5	MR-J4-70A	SC-J2SJ4KT1K	HG-KR73 (B) G7 1/5				
	HC-MFS73 (B) G2 1/9			HG-KR73 (B) G7 1/11				
	HC-MFS73 (B) G2 1/20			HG-KR73 (B) G7 1/21				
	HC-MFS73 (B) G2 1/29			HG-KR73 (B) G7 1/33				

See page 2-26 for important points to note.

(5) Existing HC-MFS motor series (G5, G7 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)	(3)	(4)		(5)		
Existing model (Note 13)		Primary/secondary/Package replacement models (Note 5, 14)		Secondary replacement/Package replacement models				
Servo amplifier model	Servo motor Model	Servo amplifier model (Note 1, 12)	Renewal kit model	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model: Power supply conversion cable	Motor side conversion cable model: Encoder conversion cable	Motor side conversion cable model: Brake conversion cable
[Small capacity/ultra-low inertia HC-MFS series with high-precision reducer, flange output type (G5)] ((B) represents models with brake)								
MR-J2S-10A	HC-MFS053 (B) G5 1/5	MR-J4-10A	SC-J2SJ4KT02K	HG-KR053 (B) G5 1/5	△ (Note 4)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-MFS053 (B) G5 1/11			HG-KR053 (B) G5 1/11				
	HC-MFS053 (B) G5 1/21			HG-KR053 (B) G5 1/21				
	HC-MFS053 (B) G5 1/33			HG-KR053 (B) G5 1/33				
	HC-MFS053 (B) G5 1/45			HG-KR053 (B) G5 1/45				
	HC-MFS13 (B) G5 1/5			HG-KR13 (B) G5 1/5				
	HC-MFS13 (B) G5 1/11			HG-KR13 (B) G5 1/11				
	HC-MFS13 (B) G5 1/21			HG-KR13 (B) G5 1/21				
	HC-MFS13 (B) G5 1/33			HG-KR13 (B) G5 1/33				
	HC-MFS13 (B) G5 1/45			HG-KR13 (B) G5 1/45				
MR-J2S-20A	HC-MFS23 (B) G5 1/5	MR-J4-20A		HG-KR23 (B) G5 1/5				
	HC-MFS23 (B) G5 1/11			HG-KR23 (B) G5 1/11				
	HC-MFS23 (B) G5 1/21			HG-KR23 (B) G5 1/21				
	HC-MFS23 (B) G5 1/33			HG-KR23 (B) G5 1/33				
	HC-MFS23 (B) G5 1/45			HG-KR23 (B) G5 1/45				
MR-J2S-40A	HC-MFS43 (B) G5 1/5	MR-J4-40A	SC-J2SJ4KT06K	HG-KR43 (B) G5 1/5				
	HC-MFS43 (B) G5 1/11			HG-KR43 (B) G5 1/11				
	HC-MFS43 (B) G5 1/21			HG-KR43 (B) G5 1/21				
	HC-MFS43 (B) G5 1/33			HG-KR43 (B) G5 1/33				
	HC-MFS43 (B) G5 1/45			HG-KR43 (B) G5 1/45				
MR-J2S-70A	HC-MFS73 (B) G5 1/5	MR-J4-70A	SC-J2SJ4KT1K	HG-KR73 (B) G5 1/5				
	HC-MFS73 (B) G5 1/11			HG-KR73 (B) G5 1/11				
	HC-MFS73 (B) G5 1/21			HG-KR73 (B) G5 1/21				
	HC-MFS73 (B) G5 1/33			HG-KR73 (B) G5 1/33				
	HC-MFS73 (B) G5 1/45			HG-KR73 (B) G5 1/45				
[Small capacity/low inertia HC-MFS series with high-precision reducer, shaft output type (G7)] ((B) represents models with brake)								
MR-J2S-10A	HC-MFS053 (B) G7 1/5	MR-J4-10A	SC-J2SJ4KT02K	HG-KR053 (B) G7 1/5	△ (Note 4)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-MFS053 (B) G7 1/11			HG-KR053 (B) G7 1/11				
	HC-MFS053 (B) G7 1/21			HG-KR053 (B) G7 1/21				
	HC-MFS053 (B) G7 1/33			HG-KR053 (B) G7 1/33				
	HC-MFS053 (B) G7 1/45			HG-KR053 (B) G7 1/45				
	HC-MFS13 (B) G7 1/5			HG-KR13 (B) G7 1/5				
	HC-MFS13 (B) G7 1/11			HG-KR13 (B) G7 1/11				
	HC-MFS13 (B) G7 1/21			HG-KR13 (B) G7 1/21				
	HC-MFS13 (B) G7 1/33			HG-KR13 (B) G7 1/33				
	HC-MFS13 (B) G7 1/45			HG-KR13 (B) G7 1/45				
MR-J2S-20A	HC-MFS23 (B) G7 1/5	MR-J4-20A		HG-KR23 (B) G7 1/5				
	HC-MFS23 (B) G7 1/11			HG-KR23 (B) G7 1/11				
	HC-MFS23 (B) G7 1/21			HG-KR23 (B) G7 1/21				
	HC-MFS23 (B) G7 1/33			HG-KR23 (B) G7 1/33				
	HC-MFS23 (B) G7 1/45			HG-KR23 (B) G7 1/45				
MR-J2S-40A	HC-MFS43 (B) G7 1/5	MR-J4-40A	SC-J2SJ4KT06K	HG-KR43 (B) G7 1/5				
	HC-MFS43 (B) G7 1/11			HG-KR43 (B) G7 1/11				
	HC-MFS43 (B) G7 1/21			HG-KR43 (B) G7 1/21				
	HC-MFS43 (B) G7 1/33			HG-KR43 (B) G7 1/33				
	HC-MFS43 (B) G7 1/45			HG-KR43 (B) G7 1/45				
MR-J2S-70A	HC-MFS73 (B) G7 1/5	MR-J4-70A	SC-J2SJ4KT1K	HG-KR73 (B) G7 1/5				
	HC-MFS73 (B) G7 1/11			HG-KR73 (B) G7 1/11				
	HC-MFS73 (B) G7 1/21			HG-KR73 (B) G7 1/21				
	HC-MFS73 (B) G7 1/33			HG-KR73 (B) G7 1/33				
	HC-MFS73 (B) G7 1/45			HG-KR73 (B) G7 1/45				

See page 2-26 for important points to note.

(6) Existing HC-SFS motor series (standard/with brake, G2 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)	(3)	(4)		(5)		
Existing model (Note 13)		Primary/secondary/Package replacement models (Note 5, 14)		Secondary replacement/Package replacement models				
Servo amplifier model	Servo motor Model	Servo amplifier model (Note 1, 12)	Renewal kit model	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model: Power supply conversion cable	Motor side conversion cable model: Encoder conversion cable	Motor side conversion cable model: Brake conversion cable
[Medium capacity/medium inertia HC-SFS series, standard/with brake] ((B) represents models with brake)								
MR-J2S-60A	HC-SFS52 (B)	MR-J4-60A	SC-J2SJ4KT06K	HG-SR52 (B)	△ (Note 6)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
	HC-SFS53 (B)							
MR-J2S-100A	HC-SFS81 (B)	MR-J4-100A	SC-J2SJ4KT1K	HG-SR81 (B)				
	HC-SFS102 (B)			HG-SR102 (B)				
	HC-SFS103 (B)							
MR-J2S-200A	HC-SFS121 (B)	MR-J4-200A	SC-J2SJ4KT3K	HG-SR121 (B)		SC-HAJ3PW1C1M		
	HC-SFS152 (B)			HG-SR152 (B)		SC-SAJ3PW2KC1M-S2		
	HC-SFS153 (B)							
	HC-SFS201 (B)			HG-SR201 (B)		SC-HAJ3PW1C1M		
	HC-SFS202 (B)			HG-SR202 (B)				
	HC-SFS203 (B)							
MR-J2S-350A	HC-SFS301 (B)	MR-J4-350A		HG-SR301 (B)				
	HC-SFS352 (B)			HG-SR352 (B)				
	HC-SFS353 (B)							
MR-J2S-500A	HC-SFS502 (B)	MR-J4-500A	SC-J2SJ4KT5K	HG-SR502 (B)				
MR-J2S-700A	HC-SFS702 (B)	MR-J4-700A	SC-J2SJ4KT7K	HG-SR702 (B)		Existing cable can be used.		
[Medium capacity/medium inertia HC-SFS series with high-precision reducer (G2)] ((B) represents models with brake)								
MR-J2S-60A	HC-SFS52 (B) G2 1/5	MR-J4-60A	SC-J2SJ4KT06K	HG-SR52 (B) G7 1/5	× (Note 3) (Note 6)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
	HC-SFS52 (B) G2 1/9			HG-SR52 (B) G7 1/11				
	HC-SFS52 (B) G2 1/20			HG-SR52 (B) G7 1/21				
	HC-SFS52 (B) G2 1/29			HG-SR52 (B) G7 1/33				
	HC-SFS52 (B) G2 1/45			HG-SR52 (B) G7 1/45				
MR-J2S-100A	HC-SFS102 (B) G2 1/5	MR-J4-100A	SC-J2SJ4KT1K	HG-SR102 (B) G7 1/5				
	HC-SFS102 (B) G2 1/9			HG-SR102 (B) G7 1/11				
	HC-SFS102 (B) G2 1/20			HG-SR102 (B) G7 1/21				
	HC-SFS102 (B) G2 1/29			HG-SR102 (B) G7 1/33				
	HC-SFS102 (B) G2 1/45			HG-SR102 (B) G7 1/45				
MR-J2S-200A	HC-SFS152 (B) G2 1/5	MR-J4-200A	SC-J2SJ4KT3K	HG-SR152 (B) G7 1/5				
	HC-SFS152 (B) G2 1/9			HG-SR152 (B) G7 1/11				
	HC-SFS152 (B) G2 1/20			HG-SR152 (B) G7 1/21				
	HC-SFS152 (B) G2 1/29			HG-SR152 (B) G7 1/33				
	HC-SFS152 (B) G2 1/45			HG-SR152 (B) G7 1/45				
	HC-SFS202 (B) G2 1/5			HG-SR202 (B) G7 1/5		SC-HAJ3PW1C1M		
	HC-SFS202 (B) G2 1/9			HG-SR202 (B) G7 1/11				
	HC-SFS202 (B) G2 1/20			HG-SR202 (B) G7 1/21				
	HC-SFS202 (B) G2 1/29			HG-SR202 (B) G7 1/33				
	HC-SFS202 (B) G2 1/45			HG-SR202 (B) G7 1/45				
MR-J2S-350A	HC-SFS352 (B) G2 1/5	MR-J4-350A		HG-SR352 (B) G7 1/5				
	HC-SFS352 (B) G2 1/9			HG-SR352 (B) G7 1/11				
	HC-SFS352 (B) G2 1/20			HG-SR352 (B) G7 1/21				
MR-J2S-500A	HC-SFS502 (B) G2 1/5	MR-J4-500A	SC-J2SJ4KT5K	HG-SR502 (B) G7 1/5				
	HC-SFS502 (B) G2 1/9			HG-SR502 (B) G7 1/11				
MR-J2S-700A	HC-SFS702 (B) G2 1/5	MR-J4-700A	SC-J2SJ4KT7K	HG-SR702 (B) G7 1/5		Existing cable can be used.		

See page 2-26 for important points to note.

(7) Existing HC-SFS motor series (G1 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)	(3)	(4)		(5)		
Existing model (Note 13)		Primary/secondary/Package replacement models (Note 5, 14)		Secondary replacement/Package replacement models				
Servo amplifier model	Servo motor Model	Servo amplifier model (Note 1, 12)	Renewal kit model	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model: Power supply conversion cable	Motor side conversion cable model: Encoder conversion cable	Motor side conversion cable model: Brake conversion cable
[Medium capacity/medium inertia HC-SFS series with general reducer (G1)] ((B) represents models with brake, (H) represents foot-mounting)								
MR-J2S-60A	HC-SFS52(B)G1(H)1/6	MR-J4-60A	SC-J2SJ4KT06K	HG-SR52(B)G1(H)1/6	△ (Note 6)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
	HC-SFS52(B)G1(H)1/11			HG-SR52(B)G1(H)1/11				
	HC-SFS52(B)G1(H)1/17			HG-SR52(B)G1(H)1/17				
	HC-SFS52(B)G1(H)1/29			HG-SR52(B)G1(H)1/29				
	HC-SFS52(B)G1(H)1/35			HG-SR52(B)G1(H)1/35				
	HC-SFS52(B)G1(H)1/43			HG-SR52(B)G1(H)1/43				
	HC-SFS52(B)G1(H)1/59			HG-SR52(B)G1(H)1/59				
MR-J2S-100A	HC-SFS102(B)G1(H)1/6	MR-J4-100A	SC-J2SJ4KT1K	HG-SR102(B)G1(H)1/6				
	HC-SFS102(B)G1(H)1/11			HG-SR102(B)G1(H)1/11				
	HC-SFS102(B)G1(H)1/17			HG-SR102(B)G1(H)1/17				
	HC-SFS102(B)G1(H)1/29			HG-SR102(B)G1(H)1/29				
	HC-SFS102(B)G1(H)1/35			HG-SR102(B)G1(H)1/35				
	HC-SFS102(B)G1(H)1/43			HG-SR102(B)G1(H)1/43				
	HC-SFS102(B)G1(H)1/59			HG-SR102(B)G1(H)1/59				
MR-J2S-200A	HC-SFS152(B)G1(H)1/6	MR-J4-200A	SC-J2SJ4KT3K	HG-SR152(B)G1(H)1/6				
	HC-SFS152(B)G1(H)1/11			HG-SR152(B)G1(H)1/11				
	HC-SFS152(B)G1(H)1/17			HG-SR152(B)G1(H)1/17				
	HC-SFS152(B)G1(H)1/29			HG-SR152(B)G1(H)1/29				
	HC-SFS152(B)G1(H)1/35			HG-SR152(B)G1(H)1/35				
	HC-SFS152(B)G1(H)1/43			HG-SR152(B)G1(H)1/43				
	HC-SFS152(B)G1(H)1/59			HG-SR152(B)G1(H)1/59				
	HC-SFS202(B)G1(H)1/6			HG-SR202(B)G1(H)1/6		SC-HAJ3PW1C1M		
	HC-SFS202(B)G1(H)1/11			HG-SR202(B)G1(H)1/11				
	HC-SFS202(B)G1(H)1/17			HG-SR202(B)G1(H)1/17				
	HC-SFS202(B)G1(H)1/29			HG-SR202(B)G1(H)1/29				
	HC-SFS202(B)G1(H)1/35			HG-SR202(B)G1(H)1/35				
	HC-SFS202(B)G1(H)1/43			HG-SR202(B)G1(H)1/43				
	HC-SFS202(B)G1(H)1/59			HG-SR202(B)G1(H)1/59				
MR-J2S-350A	HC-SFS352(B)G1(H)1/6	MR-J4-350A		HG-SR352(B)G1(H)1/6				
	HC-SFS352(B)G1(H)1/11			HG-SR352(B)G1(H)1/11				
	HC-SFS352(B)G1(H)1/17			HG-SR352(B)G1(H)1/17				
	HC-SFS352(B)G1(H)1/29			HG-SR352(B)G1(H)1/29				
	HC-SFS352(B)G1(H)1/35			HG-SR352(B)G1(H)1/35				
	HC-SFS352(B)G1(H)1/43			HG-SR352(B)G1(H)1/43				
	HC-SFS352(B)G1(H)1/59			HG-SR352(B)G1(H)1/59				
MR-J2S-500A	HC-SFS502(B)G1(H)1/6	MR-J4-500A	SC-J2SJ4KT5K	HG-SR502(B)G1(H)1/6				
	HC-SFS502(B)G1(H)1/11			HG-SR502(B)G1(H)1/11				
	HC-SFS502(B)G1(H)1/17			HG-SR502(B)G1(H)1/17				
	HC-SFS502(B)G1(H)1/29			HG-SR502(B)G1(H)1/29				
	HC-SFS502(B)G1(H)1/35			HG-SR502(B)G1(H)1/35				
	HC-SFS502(B)G1(H)1/43			HG-SR502(B)G1(H)1/43				
	HC-SFS502(B)G1(H)1/59			HG-SR502(B)G1(H)1/59				
MR-J2S-700A	HC-SFS702(B)G1(H)1/6	MR-J4-700A	SC-J2SJ4KT7K	HG-SR702(B)G1(H)1/6		Existing cable can be used.		
	HC-SFS702(B)G1(H)1/11			HG-SR702(B)G1(H)1/11				
	HC-SFS702(B)G1(H)1/17			HG-SR702(B)G1(H)1/17				
	HC-SFS702(B)G1(H)1/29			HG-SR702(B)G1(H)1/29				
	HC-SFS702(B)G1(H)1/35			HG-SR702(B)G1(H)1/35				
	HC-SFS702(B)G1(H)1/43			HG-SR702(B)G1(H)1/43				
	HC-SFS702(B)G1(H)1/59			HG-SR702(B)G1(H)1/59				

See page 2-26 for important points to note.

(8) Existing HC-SFS motor series (G5, G7 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)	(3)	(4)		(5)		
Existing model (Note 13)		Primary/secondary/Package replacement models (Note 5, 14)		Secondary replacement/Package replacement models				
Servo amplifier model	Servo motor Model	Servo amplifier model (Note 1, 12)	Renewal kit model	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model: Power supply conversion cable	Motor side conversion cable model: Encoder conversion cable	Motor side conversion cable model: Brake conversion cable
[Medium capacity/medium inertia HC-SFS series with high-precision reducer, flange output type (G5)] ((B) represents models with brake)								
MR-J2S-60A	HC-SFS52 (B) G5 1/5	MR-J4-60A	SC-J2SJ4KT06K	HG-SR52 (B) G5 1/5	△ (Note 6)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
	HC-SFS52 (B) G5 1/11			HG-SR52 (B) G5 1/11				
	HC-SFS52 (B) G5 1/21			HG-SR52 (B) G5 1/21				
	HC-SFS52 (B) G5 1/33			HG-SR52 (B) G5 1/33				
	HC-SFS52 (B) G5 1/45			HG-SR52 (B) G5 1/45				
MR-J2S-100A	HC-SFS102 (B) G5 1/5	MR-J4-100A	SC-J2SJ4KT1K	HG-SR102 (B) G5 1/5				
	HC-SFS102 (B) G5 1/11			HG-SR102 (B) G5 1/11				
	HC-SFS102 (B) G5 1/21			HG-SR102 (B) G5 1/21				
	HC-SFS102 (B) G5 1/33			HG-SR102 (B) G5 1/33				
	HC-SFS102 (B) G5 1/45			HG-SR102 (B) G5 1/45				
MR-J2S-200A	HC-SFS152 (B) G5 1/5	MR-J4-200A	SC-J2SJ4KT3K	HG-SR152 (B) G5 1/5				
	HC-SFS152 (B) G5 1/11			HG-SR152 (B) G5 1/11				
	HC-SFS152 (B) G5 1/21			HG-SR152 (B) G5 1/21				
	HC-SFS152 (B) G5 1/33			HG-SR152 (B) G5 1/33				
	HC-SFS152 (B) G5 1/45			HG-SR152 (B) G5 1/45				
	HC-SFS202 (B) G5 1/5			HG-SR202 (B) G5 1/5		SC-HAJ3PW1C1M		
	HC-SFS202 (B) G5 1/11			HG-SR202 (B) G5 1/11				
	HC-SFS202 (B) G5 1/21			HG-SR202 (B) G5 1/21				
	HC-SFS202 (B) G5 1/33			HG-SR202 (B) G5 1/33				
	HC-SFS202 (B) G5 1/45			HG-SR202 (B) G5 1/45				
MR-J2S-350A	HC-SFS352 (B) G5 1/5	MR-J4-350A		HG-SR352 (B) G5 1/5				
	HC-SFS352 (B) G5 1/11			HG-SR352 (B) G5 1/11				
	HC-SFS352 (B) G5 1/21			HG-SR352 (B) G5 1/21				
MR-J2S-500A	HC-SFS502 (B) G5 1/5	MR-J4-500A	SC-J2SJ4KT5K	HG-SR502 (B) G5 1/5				
	HC-SFS502 (B) G5 1/11			HG-SR502 (B) G5 1/11				
MR-J2S-700A	HC-SFS702 (B) G5 1/5	MR-J4-700A	SC-J2SJ4KT7K	HG-SR702 (B) G5 1/5		Existing cable can be used.		
[Medium capacity/medium inertia HC-SFS series with high-precision reducer, shaft output type (G7)] ((B) represents models with brake)								
MR-J2S-60A	HC-SFS52 (B) G7 1/5	MR-J4-60A	SC-J2SJ4KT06K	HG-SR52 (B) G7 1/5	△ (Note 6)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
	HC-SFS52 (B) G7 1/11			HG-SR52 (B) G7 1/11				
	HC-SFS52 (B) G7 1/21			HG-SR52 (B) G7 1/21				
	HC-SFS52 (B) G7 1/33			HG-SR52 (B) G7 1/33				
	HC-SFS52 (B) G7 1/45			HG-SR52 (B) G7 1/45				
MR-J2S-100A	HC-SFS102 (B) G7 1/5	MR-J4-100A	SC-J2SJ4KT1K	HG-SR102 (B) G7 1/5				
	HC-SFS102 (B) G7 1/11			HG-SR102 (B) G7 1/11				
	HC-SFS102 (B) G7 1/21			HG-SR102 (B) G7 1/21				
	HC-SFS102 (B) G7 1/33			HG-SR102 (B) G7 1/33				
	HC-SFS102 (B) G7 1/45			HG-SR102 (B) G7 1/45				
MR-J2S-200A	HC-SFS152 (B) G7 1/5	MR-J4-200A	SC-J2SJ4KT3K	HG-SR152 (B) G7 1/5				
	HC-SFS152 (B) G7 1/11			HG-SR152 (B) G7 1/11				
	HC-SFS152 (B) G7 1/21			HG-SR152 (B) G7 1/21				
	HC-SFS152 (B) G7 1/33			HG-SR152 (B) G7 1/33				
	HC-SFS152 (B) G7 1/45			HG-SR152 (B) G7 1/45				
	HC-SFS202 (B) G7 1/5			HG-SR202 (B) G7 1/5		SC-HAJ3PW1C1M		
	HC-SFS202 (B) G7 1/11			HG-SR202 (B) G7 1/11				
	HC-SFS202 (B) G7 1/21			HG-SR202 (B) G7 1/21				
	HC-SFS202 (B) G7 1/33			HG-SR202 (B) G7 1/33				
	HC-SFS202 (B) G7 1/45			HG-SR202 (B) G7 1/45				
MR-J2S-350A	HC-SFS352 (B) G7 1/5	MR-J4-350A		HG-SR352 (B) G7 1/5				
	HC-SFS352 (B) G7 1/11			HG-SR352 (B) G7 1/11				
	HC-SFS352 (B) G7 1/21			HG-SR352 (B) G7 1/21				
MR-J2S-500A	HC-SFS502 (B) G7 1/5	MR-J4-500A	SC-J2SJ4KT5K	HG-SR502 (B) G7 1/5				
	HC-SFS502 (B) G7 1/11			HG-SR502 (B) G7 1/11				
MR-J2S-700A	HC-SFS702 (B) G7 1/5	MR-J4-700A	SC-J2SJ4KT7K	HG-SR702 (B) G7 1/5		Existing cable can be used.		

See page 2-26 for important points to note.

(9) Existing HC-RFS motor series (standard/with brake, G2 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)	(3)	(4)	(5)		(6)	(7)		
Existing model (Note 13)		Primary replacement model (Note 5)		Secondary replacement/Package replacement models						
Servo amplifier model	Servo motor Model	Servo amplifier model (Note 1, 12)	Renewal kit model	Servo amplifier model (Note 1)	Servo motor Model (Note 1)	Com-patibility	Renewal kit model	Motor side conversion cable		
								Power supply conversion cable	Encoder conversion cable	Brake conversion cable
[Medium capacity/ultra-low inertia HC-RFS series, standard/with brake] ((B) represents models with brake)										
MR-J2S-200A	HC-RFS103 (B)	MR-J4-200A	SC-J2SJ4KT3K	MR-J4-200A	HG-RR103 (B)	○	SC-J2SJ4KT3K	Existing cable can be used.	SC-HAJ3ENM3C1M	Existing cable can be used.
	HC-RFS153 (B)				HG-RR153 (B)					
MR-J2S-350A	HC-RFS203 (B)	MR-J4-350A		MR-J4-350A	HG-RR203 (B)					
MR-J2S-500A	HC-RFS353 (B)	MR-J4-500A	SC-J2SJ4KT5K	MR-J4-500A	HG-RR353 (B)		SC-J2SJ4KT5K			
	HC-RFS503 (B)				HG-RR503 (B)					
[Medium capacity/ultra-low inertia HC-RFS series with high-precision reducer (G2)] ((B) represents models with brake)										
MR-J2S-200A	HC-RFS103 (B) G2 1/5	MR-J4-200A (Note 10)	SC-J2SJ4KT3K	MR-J4-100A (Note 10)	HG-SR102 (B) G7 1/5	× (Note 3) (Note 4)	(Note 11)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
	HC-RFS103 (B) G2 1/9				HG-SR102 (B) G7 1/11					
	HC-RFS103 (B) G2 1/20				HG-SR102 (B) G7 1/21					
	HC-RFS103 (B) G2 1/29				HG-SR102 (B) G7 1/33					
	HC-RFS103 (B) G2 1/45				HG-SR102 (B) G7 1/45					
	HC-RFS153 (B) G2 1/5	MR-J4-200A		MR-J4-200A	HG-SR152 (B) G7 1/5		SC-J2SJ4KT3K			
	HC-RFS153 (B) G2 1/9				HG-SR152 (B) G7 1/11					
	HC-RFS153 (B) G2 1/20				HG-SR152 (B) G7 1/21					
	HC-RFS153 (B) G2 1/29				HG-SR152 (B) G7 1/33					
	HC-RFS153 (B) G2 1/45				HG-SR152 (B) G7 1/45					
MR-J2S-350A	HC-RFS203 (B) G2 1/5	MR-J4-350A (Note 10)		MR-J4-200A (Note 10)	HG-SR202 (B) G7 1/5			SC-J2SJ4PW2C1M		
	HC-RFS203 (B) G2 1/9				HG-SR202 (B) G7 1/11					
	HC-RFS203 (B) G2 1/20				HG-SR202 (B) G7 1/21					
	HC-RFS203 (B) G2 1/29				HG-SR202 (B) G7 1/33					
	HC-RFS203 (B) G2 1/45				HG-SR202 (B) G7 1/45					
MR-J2S-500A	HC-RFS353 (B) G2 1/5	MR-J4-500A (Note 10)	SC-J2SJ4KT5K	MR-J4-350A (Note 10)	HG-SR352 (B) G7 1/5		(Note 11)	SC-HAJ3PW1C1M		
	HC-RFS353 (B) G2 1/9				HG-SR352 (B) G7 1/11					
	HC-RFS353 (B) G2 1/20				HG-SR352 (B) G7 1/21					
	HC-RFS353 (B) G2 1/29									
	HC-RFS503 (B) G2 1/5	MR-J4-500A		MR-J4-500A	HG-SR502 (B) G7 1/5		SC-J2SJ4KT5K			
	HC-RFS503 (B) G2 1/9				HG-SR502 (B) G7 1/11					
	HC-RFS503 (B) G2 1/20									

See page 2-26 for important points to note.

(10) Existing HC-RFS motor series (G5, G7 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)	(3)	(4)	(5)		(6)	(7)		
Existing model (Note 13)		Primary replacement model (Note 5)		Secondary replacement/Package replacement models						
Servo amplifier model	Servo motor Model	Servo amplifier model (Note 1, 12)	Renewal kit model	Servo amplifier model (Note 1)	Servo motor Model (Note 1)	Com-patibility	Renewal kit model	Motor side conversion cable		
								Power supply conversion cable	Encoder conversion cable	Brake conversion cable
[Medium capacity/ultra-low inertia HC-RFS series with high-precision reducer, flange output type (G5)] ((B) represents models with brake)										
MR-J2S-200A	HC-RFS103 (B) G5 1/5	MR-J4-200A (Note 10)	SC-J2SJ4KT3K	MR-J4-100A (Note 10)	HG-SR102 (B) G5 1/5	× (Note 3) (Note 4)	(Note 11)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
	HC-RFS103 (B) G5 1/11				HG-SR102 (B) G5 1/11					
	HC-RFS103 (B) G5 1/21				HG-SR102 (B) G5 1/21					
	HC-RFS103 (B) G5 1/33				HG-SR102 (B) G5 1/33					
	HC-RFS103 (B) G5 1/45				HG-SR102 (B) G5 1/45					
	HC-RFS153 (B) G5 1/5	MR-J4-200A		MR-J4-200A	HG-SR152 (B) G5 1/5		SC-J2SJ4KT3K			
	HC-RFS153 (B) G5 1/11				HG-SR152 (B) G5 1/11					
	HC-RFS153 (B) G5 1/21				HG-SR152 (B) G5 1/21					
	HC-RFS153 (B) G5 1/33				HG-SR152 (B) G5 1/33					
	HC-RFS153 (B) G5 1/45				HG-SR152 (B) G5 1/45					
MR-J2S-350A	HC-RFS203 (B) G5 1/5	MR-J4-350A (Note 10)		MR-J4-200A (Note 10)	HG-SR202 (B) G5 1/5			SC-J2SJ4PW2C1M		
	HC-RFS203 (B) G5 1/11				HG-SR202 (B) G5 1/11					
	HC-RFS203 (B) G5 1/21				HG-SR202 (B) G5 1/21					
	HC-RFS203 (B) G5 1/33				HG-SR202 (B) G5 1/33					
	HC-RFS203 (B) G5 1/45				HG-SR202 (B) G5 1/45					
MR-J2S-500A	HC-RFS353 (B) G5 1/5	MR-J4-500A (Note 10)	SC-J2SJ4KT5K	MR-J4-350A (Note 10)	HG-SR352 (B) G5 1/5		(Note 11)	SC-HAJ3PW1C1M		
	HC-RFS353 (B) G5 1/11				HG-SR352 (B) G5 1/11					
	HC-RFS353 (B) G5 1/21				HG-SR352 (B) G5 1/21					
	HC-RFS353 (B) G5 1/33									
	HC-RFS503 (B) G5 1/5	MR-J4-500A		MR-J4-500A	HG-SR502 (B) G5 1/5		SC-J2SJ4KT5K			
	HC-RFS503 (B) G5 1/11				HG-SR502 (B) G5 1/11					
	HC-RFS503 (B) G5 1/21									
[Medium capacity/ultra-low inertia HC-RFS series with high-precision reducer, shaft output type (G7)] ((B) represents models with brake)										
MR-J2S-200A	HC-RFS103 (B) G7 1/5	MR-J4-200A (Note 10)	SC-J2SJ4KT3K	MR-J4-100A (Note 10)	HG-SR102 (B) G7 1/5	× (Note 3) (Note 4)	(Note 11)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
	HC-RFS103 (B) G7 1/11				HG-SR102 (B) G7 1/11					
	HC-RFS103 (B) G7 1/21				HG-SR102 (B) G7 1/21					
	HC-RFS103 (B) G7 1/33				HG-SR102 (B) G7 1/33					
	HC-RFS103 (B) G7 1/45				HG-SR102 (B) G7 1/45					
	HC-RFS153 (B) G7 1/5	MR-J4-200A		MR-J4-200A	HG-SR152 (B) G7 1/5		SC-J2SJ4KT3K			
	HC-RFS153 (B) G7 1/11				HG-SR152 (B) G7 1/11					
	HC-RFS153 (B) G7 1/21				HG-SR152 (B) G7 1/21					
	HC-RFS153 (B) G7 1/33				HG-SR152 (B) G7 1/33					
	HC-RFS153 (B) G7 1/45				HG-SR152 (B) G7 1/45					
MR-J2S-350A	HC-RFS203 (B) G7 1/5	MR-J4-350A (Note 10)		MR-J4-200A (Note 10)	HG-SR202 (B) G7 1/5			SC-J2SJ4PW2C1M		
	HC-RFS203 (B) G7 1/11				HG-SR202 (B) G7 1/11					
	HC-RFS203 (B) G7 1/21				HG-SR202 (B) G7 1/21					
	HC-RFS203 (B) G7 1/33				HG-SR202 (B) G7 1/33					
	HC-RFS203 (B) G7 1/45				HG-SR202 (B) G7 1/45					
MR-J2S-500A	HC-RFS353 (B) G7 1/5	MR-J4-500A (Note 10)	SC-J2SJ4KT5K	MR-J4-350A (Note 10)	HG-SR352 (B) G7 1/5		(Note 11)	SC-HAJ3PW1C1M		
	HC-RFS353 (B) G7 1/11				HG-SR352 (B) G7 1/11					
	HC-RFS353 (B) G7 1/21				HG-SR352 (B) G7 1/21					
	HC-RFS353 (B) G7 1/33									
	HC-RFS503 (B) G7 1/5	MR-J4-500A		MR-J4-500A	HG-SR502 (B) G7 1/5		SC-J2SJ4KT5K			
	HC-RFS503 (B) G7 1/11				HG-SR502 (B) G7 1/11					
	HC-RFS503 (B) G7 1/21									

See page 2-26 for important points to note.

(11) Existing HC-UFS motor series

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)	(3)	(4)		(5)		
Existing model (Note 13)		Primary/secondary/Package replacement models (Note 5, 14)		Secondary replacement/Package replacement models				
Servo amplifier model	Servo motor Model	Servo amplifier model (Note 1, 12)	Renewal kit model	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model: Power supply conversion cable	Encoder conversion cable	Brake conversion cable
[Medium capacity/flat type HC-UFS series, standard/with brake] ((B) represents models with brake)								
MR-J2S-70A	HC-UFS72 (B)	MR-J4-70A	SC-J2SJ4KT1K	HG-UR72 (B)	○	Existing cable can be used.	SC-HAJ3ENM3C1M	Existing cable can be used.
MR-J2S-200A	HC-UFS152 (B)	MR-J4-200A	SC-J2SJ4KT3K	HG-UR152 (B)				
MR-J2S-350A	HC-UFS202 (B)	MR-J4-350A		HG-UR202 (B)				
MR-J2S-500A	HC-UFS352 (B)	MR-J4-500A	SC-J2SJ4KT5K	HG-UR352 (B)				
	HC-UFS502 (B)			HG-UR502 (B)				
[Small capacity/flat type HC-UFS series, standard/with brake] ((B) represents models with brake)								
MR-J2S-10A	HC-UFS13 (B)	MR-J4-10A	SC-J2SJ4KT02K	HG-KR13 (B)	× (Note 3)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
MR-J2S-20A	HC-UFS23 (B)	MR-J4-20A		HG-KR23 (B)				
MR-J2S-40A	HC-UFS43 (B)	MR-J4-40A	SC-J2SJ4KT06K	HG-KR43 (B)				
MR-J2S-70A	HC-UFS73 (B)	MR-J4-70A	SC-J2SJ4KT1K	HG-KR73 (B)				

See page 2-26 for important points to note.

(12) Existing HC-LFS motor series

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)	(3)	(4)	(5)		(6)	(7)		
Existing model (Note 13)		Primary replacement model (Note 5)		Secondary replacement/Package replacement models						
Servo amplifier model	Servo motor Model	Servo amplifier model (Note 1, 12)	Renewal kit model	Servo amplifier model (Note 1)	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model: Renewal kit model	Power supply conversion cable	Encoder conversion cable	Brake conversion cable
[Medium capacity/low inertia HC-LFS series, standard/with brake] ((B) represents models with brake)										
MR-J2S-60A	HC-LFS52 (B)	MR-J4-60A (Note 10)	SC-J2SJ4KT06K (Note 10)	MR-J4-70A (Note 10)	HG-JR73 (B)	× (Note 3)	(Note 11)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
MR-J2S-100A	HC-LFS102 (B)	MR-J4-100A (Note 10)	SC-J2SJ4KT1K (Note 10)	MR-J4-200A (Note 10)	HG-JR153 (B)					
MR-J2S-200A	HC-LFS152 (B)	MR-J4-200A (Note 10)	SC-J2SJ4KT3K	MR-J4-350A (Note 10)	HG-JR353 (B)		SC-J2SJ4KT3K	SC-J2SJ4PW2C1M		
MR-J2S-350A	HC-LFS202 (B)	MR-J4-350A		MR-J4-350A				SC-HAJ3PW1C1M		
MR-J2S-500A	HC-LFS302 (B)	MR-J4-500A	SC-J2SJ4KT5K	MR-J4-500A	HG-JR503 (B)		SC-J2SJ4KT5K			

See page 2-26 for important points to note.

(13) Existing HA-LFS motor series

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)	(3)	(4)	(5)		(6)	(7)		
Existing model (Note 13)		Primary replacement model (Note 5)		Secondary replacement/Package replacement models						
Servo amplifier model	Servo motor Model	Servo amplifier model (Note 1, 12)	Renewal kit model	Servo amplifier model (Note 1)	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model: Renewal kit model	Power supply conversion Cable	Encoder Conversion cable	Brake/Conversion cable for the cooling fan
[Large capacity/low inertia HA-LFS series, standard/with brake] ((B) represents models with brake)										
MR-J2S-500A	HA-LFS502	MR-J4-500A	SC-J2SJ4KT5K	MR-J4-500A	HG-SR502	× (Note 3)	SC-J2SJ4KT5K	SC-HAJ3PW1C1M	SC-HAJ3ENM3C1M	
MR-J2S-700A	HA-LFS702	MR-J4-700A	SC-J2SJ4KT7K	MR-J4-700A	HG-SR702		SC-J2SJ4KT7K	Existing cable can be used.		
MR-J2S-11KA	HA-LFS11K1M (B)	MR-J4-11KA	SC-J2SJ4KT15K	MR-J4-11KA	HG-JR11K1M (B)		SC-J2SJ4KT15K	SC-J2SJ4PW3C1M-■	Existing cable can be used.	•Existing brake cable can be used. •Cooling fan cable (Note 9)
MR-J2S-15KA	HA-LFS15K2 (B)	MR-J4-15KA (Note 10)		MR-J4-11KA (Note 10)	HG-JR11K1M (B)					
	HA-LFS15K1M (B)	MR-J4-15KA		MR-J4-15KA	HG-JR15K1M (B)					
MR-J2S-22KA	HA-LFS22K2 (B)	MR-J4-22KA (Note 10)	SC-J2SJ4KT22K (Note 10)	MR-J4-15KA (Note 10)	HG-JR15K1M (B)		(Note 11)			
	HA-LFS22K1M	MR-J4-22KA	SC-J2SJ4KT22K	MR-J4-22KA	HG-JR22K1M		SC-J2SJ4KT22K	(Note 8)		•Cooling fan conversion cable SC-J2SJ4FAN1C1M

See page 2-26 for important points to note.

2．4．2 B Type Replacement Combination Table

(1) Existing HC-KFS motor series (standard/with brake, G1, G2 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)		(3)	(4)		(5)		
Existing model (Note 13)		Primary/secondary/Package replacement models (Note 5, 14)			Secondary replacement/Package replacement models				
Servo Amplifier model	Servo motor Model	Servo Amplifier model (Note 1, 12)	SSCNET conversion unit model (Note 1)	Renewal kit model	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model: Power supply conversion cable	Motor side conversion cable model: Encoder conversion cable	Motor side conversion cable model: Brake conversion cable
[Small capacity/low inertia HC-KFS series, standard/with brake] ((B) represents models with brake)									
MR-J2S-10B	HC-KFS053 (B)	MR-J4-10B-RJ020	MR-J4-T20	SC-J2SBJ4KT02K	HG-KR053 (B)	△ (Note 4)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-KFS13 (B)				HG-KR13 (B)				
MR-J2S-20B	HC-KFS23 (B)	MR-J4-20B-RJ020			HG-KR23 (B)				
MR-J2S-40B	HC-KFS43 (B)	MR-J4-40B-RJ020		SC-J2SBJ4KT06K	HG-KR43 (B)				
MR-J2S-70B	HC-KFS73 (B)	MR-J4-70B-RJ020		SC-J2SBJ4KT1K	HG-KR73 (B)				
[Small capacity/low inertia HC-KFS series with general reducer (G1)] ((B) represents models with brake)									
MR-J2S-10B	HC-KFS053 (B) G1 1/5	MR-J4-10B-RJ020	MR-J4-T20	SC-J2SBJ4KT02K	HG-KR053 (B) G1 1/5	△ (Note 4)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-KFS053 (B) G1 1/12				HG-KR053 (B) G1 1/12				
	HC-KFS053 (B) G1 1/20				HG-KR053 (B) G1 1/20				
	HC-KFS13 (B) G1 1/5				HG-KR13 (B) G1 1/5				
	HC-KFS13 (B) G1 1/12				HG-KR13 (B) G1 1/12				
	HC-KFS13 (B) G1 1/20				HG-KR13 (B) G1 1/20				
MR-J2S-20B	HC-KFS23 (B) G1 1/5	MR-J4-20B-RJ020			HG-KR23 (B) G1 1/5				
	HC-KFS23 (B) G1 1/12				HG-KR23 (B) G1 1/12 (Note 2)				
	HC-KFS23 (B) G1 1/20				HG-KR23 (B) G1 1/20 (Note 2)				
MR-J2S-40B	HC-KFS43 (B) G1 1/5	MR-J4-40B-RJ020		SC-J2SBJ4KT06K	HG-KR43 (B) G1 1/5				
	HC-KFS43 (B) G1 1/12				HG-KR43 (B) G1 1/12 (Note 2)				
	HC-KFS43 (B) G1 1/20				HG-KR43 (B) G1 1/20 (Note 2)				
MR-J2S-70B	HC-KFS73 (B) G1 1/5	MR-J4-70B-RJ020		SC-J2SBJ4KT1K	HG-KR73 (B) G1 1/5				
	HC-KFS73 (B) G1 1/12				HG-KR73 (B) G1 1/12 (Note 2)				
	HC-KFS73 (B) G1 1/20				HG-KR73 (B) G1 1/20				
[Small capacity/low inertia HC-KFS series with high-precision reducer (G2)] ((B) represents models with brake)									
MR-J2S-10B	HC-KFS053 (B) G2 1/5	MR-J4-10B-RJ020	MR-J4-T20	SC-J2SBJ4KT02K	HG-KR053 (B) G7 1/5	× (Note 3)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-KFS053 (B) G2 1/9				HG-KR053 (B) G7 1/11				
	HC-KFS053 (B) G2 1/20				HG-KR053 (B) G7 1/21				
	HC-KFS053 (B) G2 1/29				HG-KR053 (B) G7 1/33				
	HC-KFS13 (B) G2 1/5				HG-KR13 (B) G7 1/5				
	HC-KFS13 (B) G2 1/9				HG-KR13 (B) G7 1/11				
	HC-KFS13 (B) G2 1/20				HG-KR13 (B) G7 1/21				
	HC-KFS13 (B) G2 1/29				HG-KR13 (B) G7 1/33				
MR-J2S-20B	HC-KFS23 (B) G2 1/5	MR-J4-20B-RJ020			HG-KR23 (B) G7 1/5				
	HC-KFS23 (B) G2 1/9				HG-KR23 (B) G7 1/11				
	HC-KFS23 (B) G2 1/20				HG-KR23 (B) G7 1/21				
	HC-KFS23 (B) G2 1/29				HG-KR23 (B) G7 1/33				
MR-J2S-40B	HC-KFS43 (B) G2 1/5	MR-J4-40B-RJ020		SC-J2SBJ4KT06K	HG-KR43 (B) G7 1/5				
	HC-KFS43 (B) G2 1/9				HG-KR43 (B) G7 1/11				
	HC-KFS43 (B) G2 1/20				HG-KR43 (B) G7 1/21				
	HC-KFS43 (B) G2 1/29				HG-KR43 (B) G7 1/33				
MR-J2S-70B	HC-KFS73 (B) G2 1/5	MR-J4-70B-RJ020		SC-J2SBJ4KT1K	HG-KR73 (B) G7 1/5				
	HC-KFS73 (B) G2 1/9				HG-KR73 (B) G7 1/11				
	HC-KFS73 (B) G2 1/20				HG-KR73 (B) G7 1/21				
	HC-KFS73 (B) G2 1/29				HG-KR73 (B) G7 1/33				

See page 2-26 for important points to note.

(2) Existing HC-KFS motor series (G5, G7 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)		(3)	(4)		(5)		
Existing model (Note 13)		Primary/secondary/Package replacement models (Note 5, 14)			Secondary replacement/Package replacement models				
Servo Amplifier model	Servo motor Model	Servo Amplifier model (Note 1, 12)	SSCNET conversion unit model (Note 1)	Renewal kit model	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model: Power supply conversion cable	Motor side conversion cable model: Encoder conversion cable	Motor side conversion cable model: Brake conversion cable
[Small capacity/low inertia HC-KFS series with high-precision reducer, flange output type (G5)] ((B) represents models with brake)									
MR-J2S-10B	HC-KFS053 (B) G5 1/5	MR-J4-10B-RJ020	MR-J4-T20	SC-J2SBJ4KT02K	HG-KR053 (B) G5 1/5	△ (Note 4)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-KFS053 (B) G5 1/11				HG-KR053 (B) G5 1/11				
	HC-KFS053 (B) G5 1/21				HG-KR053 (B) G5 1/21				
	HC-KFS053 (B) G5 1/33				HG-KR053 (B) G5 1/33				
	HC-KFS053 (B) G5 1/45				HG-KR053 (B) G5 1/45				
	HC-KFS13 (B) G5 1/5				HG-KR13 (B) G5 1/5				
	HC-KFS13 (B) G5 1/11				HG-KR13 (B) G5 1/11				
	HC-KFS13 (B) G5 1/21				HG-KR13 (B) G5 1/21				
	HC-KFS13 (B) G5 1/33				HG-KR13 (B) G5 1/33				
	HC-KFS13 (B) G5 1/45				HG-KR13 (B) G5 1/45				
MR-J2S-20B	HC-KFS23 (B) G5 1/5	MR-J4-20B-RJ020			HG-KR23 (B) G5 1/5				
	HC-KFS23 (B) G5 1/11				HG-KR23 (B) G5 1/11				
	HC-KFS23 (B) G5 1/21				HG-KR23 (B) G5 1/21				
	HC-KFS23 (B) G5 1/33				HG-KR23 (B) G5 1/33				
	HC-KFS23 (B) G5 1/45				HG-KR23 (B) G5 1/45				
MR-J2S-40B	HC-KFS43 (B) G5 1/5	MR-J4-40B-RJ020		SC-J2SBJ4KT06K	HG-KR43 (B) G5 1/5				
	HC-KFS43 (B) G5 1/11				HG-KR43 (B) G5 1/11				
	HC-KFS43 (B) G5 1/21				HG-KR43 (B) G5 1/21				
	HC-KFS43 (B) G5 1/33				HG-KR43 (B) G5 1/33				
	HC-KFS43 (B) G5 1/45				HG-KR43 (B) G5 1/45				
MR-J2S-70B	HC-KFS73 (B) G5 1/5	MR-J4-70B-RJ020		SC-J2SBJ4KT1K	HG-KR73 (B) G5 1/5				
	HC-KFS73 (B) G5 1/11				HG-KR73 (B) G5 1/11				
	HC-KFS73 (B) G5 1/21				HG-KR73 (B) G5 1/21				
	HC-KFS73 (B) G5 1/33				HG-KR73 (B) G5 1/33				
	HC-KFS73 (B) G5 1/45				HG-KR73 (B) G5 1/45				
[Small capacity/low inertia HC-KFS series with high-precision reducer, shaft output type (G7)] ((B) represents models with brake)									
MR-J2S-10B	HC-KFS053 (B) G7 1/5	MR-J4-10B-RJ020	MR-J4-T20	SC-J2SBJ4KT02K	HG-KR053 (B) G7 1/5	△ (Note 4)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-KFS053 (B) G7 1/11				HG-KR053 (B) G7 1/11				
	HC-KFS053 (B) G7 1/21				HG-KR053 (B) G7 1/21				
	HC-KFS053 (B) G7 1/33				HG-KR053 (B) G7 1/33				
	HC-KFS053 (B) G7 1/45				HG-KR053 (B) G7 1/45				
	HC-KFS13 (B) G7 1/5				HG-KR13 (B) G7 1/5				
	HC-KFS13 (B) G7 1/11				HG-KR13 (B) G7 1/11				
	HC-KFS13 (B) G7 1/21				HG-KR13 (B) G7 1/21				
	HC-KFS13 (B) G7 1/33				HG-KR13 (B) G7 1/33				
	HC-KFS13 (B) G7 1/45				HG-KR13 (B) G7 1/45				
MR-J2S-20B	HC-KFS23 (B) G7 1/5	MR-J4-20B-RJ020			HG-KR23 (B) G7 1/5				
	HC-KFS23 (B) G7 1/11				HG-KR23 (B) G7 1/11				
	HC-KFS23 (B) G7 1/21				HG-KR23 (B) G7 1/21				
	HC-KFS23 (B) G7 1/33				HG-KR23 (B) G7 1/33				
	HC-KFS23 (B) G7 1/45				HG-KR23 (B) G7 1/45				
MR-J2S-40B	HC-KFS43 (B) G7 1/5	MR-J4-40B-RJ020		SC-J2SBJ4KT06K	HG-KR43 (B) G7 1/5				
	HC-KFS43 (B) G7 1/11				HG-KR43 (B) G7 1/11				
	HC-KFS43 (B) G7 1/21				HG-KR43 (B) G7 1/21				
	HC-KFS43 (B) G7 1/33				HG-KR43 (B) G7 1/33				
	HC-KFS43 (B) G7 1/45				HG-KR43 (B) G7 1/45				
MR-J2S-70B	HC-KFS73 (B) G7 1/5	MR-J4-70B-RJ020		SC-J2SBJ4KT1K	HG-KR73 (B) G7 1/5				
	HC-KFS73 (B) G7 1/11				HG-KR73 (B) G7 1/11				
	HC-KFS73 (B) G7 1/21				HG-KR73 (B) G7 1/21				
	HC-KFS73 (B) G7 1/33				HG-KR73 (B) G7 1/33				
	HC-KFS73 (B) G7 1/45				HG-KR73 (B) G7 1/45				

See page 2-26 for important points to note.

(3) Existing HC-KFS46, KFS410 motor

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)		(3)	(4)		(5)		(6)	(7)		
Existing model (Note 13)		Primary replacement model (Note 5)			Secondary replacement/Package replacement models							
Servo Amplifier model	Servo Motor Model	Servo Amplifier model (Note 1, 12)	SSCNET Conversion unit Model (Note 1)	Renewal kit model	Servo Amplifier model (Note 1)	SSCNET Conversion unit model (Note 1)	Servo Motor Model (Note 1)	Com-patibility	Renewal kit model	Power supply conversion cable	Encoder conversion cable	Brake conversion cable
[Small capacity/low inertia HC-KFS series, standard/with brake] ((B) represents models with brake)												
MR-J2S-70B	HC-KFS46 HC-KFS410	MR-J4-70B-RJ020 (Note 10)	MR-J4-T20	SC-J2SBJ4KT1K	MR-J4-40B-RJ020 (Note 10)	MR-J4-T20	HG-KR43	△ (Note 4) (Note 15)	(Note 11)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.

See page 2-26 for important points to note.

(4) Existing HC-MFS motor series (standard/with brake, G1, G2 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)		(3)	(4)		(5)		
Existing model (Note 13)		Primary/secondary/Package replacement models (Note 5, 14)			Secondary replacement/Package replacement models				
Servo Amplifier model	Servo motor Model	Servo Amplifier model (Note 1, 12)	SSCNET conversion unit model (Note 1)	Renewal kit model	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model: Power supply conversion cable	Motor side conversion cable model: Encoder conversion cable	Motor side conversion cable model: Brake conversion cable
[Small capacity/ultra-low inertia HC-MFS series, standard/with brake] ((B) represents models with brake)									
MR-J2S-10B	HC-MFS053 (B)	MR-J4-10B-RJ020	MR-J4-T20	SC-J2SBJ4KT02K	HG-MR053 (B)	○	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-MFS13 (B)				HG-MR13 (B)				
MR-J2S-20B	HC-MFS23 (B)	MR-J4-20B-RJ020			HG-MR23 (B)				
MR-J2S-40B	HC-MFS43 (B)	MR-J4-40B-RJ020		SC-J2SBJ4KT06K	HG-MR43 (B)				
MR-J2S-70B	HC-MFS73 (B)	MR-J4-70B-RJ020		SC-J2SBJ4KT1K	HG-MR73 (B)				
[Small capacity/ultra-low inertia HC-MFS series with general reducer (G1)] ((B) represents models with brake)									
MR-J2S-10B	HC-MFS053 (B) G1 1/5	MR-J4-10B-RJ020	MR-J4-T20	SC-J2SBJ4KT02K	HG-KR053 (B) G1 1/5	△ (Note 4)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-MFS053 (B) G1 1/12				HG-KR053 (B) G1 1/12				
	HC-MFS053 (B) G1 1/20				HG-KR053 (B) G1 1/20				
	HC-MFS13 (B) G1 1/5				HG-KR13 (B) G1 1/5				
	HC-MFS13 (B) G1 1/12				HG-KR13 (B) G1 1/12				
	HC-MFS13 (B) G1 1/20				HG-KR13 (B) G1 1/20				
MR-J2S-20B	HC-MFS23 (B) G1 1/5	MR-J4-20B-RJ020			HG-KR23 (B) G1 1/5				
	HC-MFS23 (B) G1 1/12				HG-KR23 (B) G1 1/12 (Note 2)				
	HC-MFS23 (B) G1 1/20				HG-KR23 (B) G1 1/20 (Note 2)				
MR-J2S-40B	HC-MFS43 (B) G1 1/5	MR-J4-40B-RJ020		SC-J2SBJ4KT06K	HG-KR43 (B) G1 1/5				
	HC-MFS43 (B) G1 1/12				HG-KR43 (B) G1 1/12 (Note 2)				
	HC-MFS43 (B) G1 1/20				HG-KR43 (B) G1 1/20 (Note 2)				
MR-J2S-70B	HC-MFS73 (B) G1 1/5	MR-J4-70B-RJ020		SC-J2SBJ4KT1K	HG-KR73 (B) G1 1/5				
	HC-MFS73 (B) G1 1/12				HG-KR73 (B) G1 1/12 (Note 2)				
	HC-MFS73 (B) G1 1/20				HG-KR73 (B) G1 1/20				
[Small capacity/ultra-low inertia HC-MFS series with high-precision reducer (G2)] ((B) represents models with brake)									
MR-J2S-10B	HC-MFS053 (B) G2 1/5	MR-J4-10B-RJ020	MR-J4-T20	SC-J2SBJ4KT02K	HG-KR053 (B) G7 1/5	× (Note 3) (Note 4)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HC-MFS053 (B) G2 1/9				HG-KR053 (B) G7 1/11				
	HC-MFS053 (B) G2 1/20				HG-KR053 (B) G7 1/21				
	HC-MFS053 (B) G2 1/29				HG-KR053 (B) G7 1/33				
	HC-MFS13 (B) G2 1/5				HG-KR13 (B) G7 1/5				
	HC-MFS13 (B) G2 1/9				HG-KR13 (B) G7 1/11				
	HC-MFS13 (B) G2 1/20				HG-KR13 (B) G7 1/21				
	HC-MFS13 (B) G2 1/29				HG-KR13 (B) G7 1/33				
MR-J2S-20B	HC-MFS23 (B) G2 1/5	MR-J4-20B-RJ020			HG-KR23 (B) G7 1/5				
	HC-MFS23 (B) G2 1/9				HG-KR23 (B) G7 1/11				
	HC-MFS23 (B) G2 1/20				HG-KR23 (B) G7 1/21				
	HC-MFS23 (B) G2 1/29				HG-KR23 (B) G7 1/33				
MR-J2S-40B	HC-MFS43 (B) G2 1/5	MR-J4-40B-RJ020		SC-J2SBJ4KT06K	HG-KR43 (B) G7 1/5				
	HC-MFS43 (B) G2 1/9				HG-KR43 (B) G7 1/11				
	HC-MFS43 (B) G2 1/20				HG-KR43 (B) G7 1/21				
	HC-MFS43 (B) G2 1/29				HG-KR43 (B) G7 1/33				
MR-J2S-70B	HC-MFS73 (B) G2 1/5	MR-J4-70B-RJ020		SC-J2SBJ4KT1K	HG-KR73 (B) G7 1/5				
	HC-MFS73 (B) G2 1/9				HG-KR73 (B) G7 1/11				
	HC-MFS73 (B) G2 1/20				HG-KR73 (B) G7 1/21				
	HC-MFS73 (B) G2 1/29				HG-KR73 (B) G7 1/33				

See page 2-26 for important points to note.

(5) Existing HC-MFS motor series (G5, G7 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)		(3)	(4)		(5)		
Existing model (Note 13)		Primary/secondary/Package replacement models (Note 5, 14)			Secondary replacement/Package replacement models				
Servo Amplifier model	Servo motor Model	Servo Amplifier model (Note 1, 12)	SSCNET conversion unit model (Note 1)	Renewal kit model	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model		
							Power supply conversion cable	Encoder conversion cable	Brake conversion cable
[Small capacity/ultra-low inertia HC-MFS series with high-precision reducer, flange output type (G5)] ((B) represents models with brake)									
MR-J2S-10B	HCMFS053(B)G51/5	MR-J4-10B-RJ020	MR-J4-T20	SC-J2SBJ4KT02K	HG-KR053 (B) G5 1/5	△ (Note 4)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HCMFS053(B)G51/11				HG-KR053 (B) G5 1/11				
	HCMFS053(B)G51/21				HG-KR053 (B) G5 1/21				
	HCMFS053(B)G51/33				HG-KR053 (B) G5 1/33				
	HCMFS053(B)G51/45				HG-KR053 (B) G5 1/45				
	HCMFS13(B)G51/5				HG-KR13 (B) G5 1/5				
	HCMFS13(B)G51/11				HG-KR13 (B) G5 1/11				
	HCMFS13(B)G51/21				HG-KR13 (B) G5 1/21				
	HCMFS13(B)G51/33				HG-KR13 (B) G5 1/33				
	HCMFS13(B)G51/45				HG-KR13 (B) G5 1/45				
MR-J2S-20B	HCMFS23(B)G51/5	MR-J4-20B-RJ020			HG-KR23 (B) G5 1/5				
	HCMFS23(B)G51/11				HG-KR23 (B) G5 1/11				
	HCMFS23(B)G51/21				HG-KR23 (B) G5 1/21				
	HCMFS23(B)G51/33				HG-KR23 (B) G5 1/33				
	HCMFS23(B)G51/45				HG-KR23 (B) G5 1/45				
MR-J2S-40B	HCMFS43(B)G51/5	MR-J4-40B-RJ020		SC-J2SBJ4KT06K	HG-KR43 (B) G5 1/5				
	HCMFS43(B)G51/11				HG-KR43 (B) G5 1/11				
	HCMFS43(B)G51/21				HG-KR43 (B) G5 1/21				
	HCMFS43(B)G51/33				HG-KR43 (B) G5 1/33				
	HCMFS43(B)G51/45				HG-KR43 (B) G5 1/45				
MR-J2S-70B	HCMFS73(B)G51/5	MR-J4-70B-RJ020		SC-J2SBJ4KT1K	HG-KR73 (B) G5 1/5				
	HCMFS73(B)G51/11				HG-KR73 (B) G5 1/11				
	HCMFS73(B)G51/21				HG-KR73 (B) G5 1/21				
	HCMFS73(B)G51/33				HG-KR73 (B) G5 1/33				
	HCMFS73(B)G51/45				HG-KR73 (B) G5 1/45				
[Small capacity/ultra-low inertia HC-MFS series with high-precision reducer, shaft output type (G7)] ((B) represents models with brake)									
MR-J2S-10B	HCMFS053(B)G71/5	MR-J4-10B-RJ020	MR-J4-T20	SC-J2SBJ4KT02K	HG-KR053 (B) G7 1/5	△ (Note 4)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
	HCMFS053(B)G71/11				HG-KR053 (B) G7 1/11				
	HCMFS053(B)G71/21				HG-KR053 (B) G7 1/21				
	HCMFS053(B)G71/33				HG-KR053 (B) G7 1/33				
	HCMFS053(B)G71/45				HG-KR053 (B) G7 1/45				
	HCMFS13(B)G71/5				HG-KR13 (B) G7 1/5				
	HCMFS13(B)G71/11				HG-KR13 (B) G7 1/11				
	HCMFS13(B)G71/21				HG-KR13 (B) G7 1/21				
	HCMFS13(B)G71/33				HG-KR13 (B) G7 1/33				
	HCMFS13(B)G71/45				HG-KR13 (B) G7 1/45				
MR-J2S-20B	HCMFS23(B)G71/5	MR-J4-20B-RJ020			HG-KR23 (B) G7 1/5				
	HCMFS23(B)G71/11				HG-KR23 (B) G7 1/11				
	HCMFS23(B)G71/21				HG-KR23 (B) G7 1/21				
	HCMFS23(B)G71/33				HG-KR23 (B) G7 1/33				
	HCMFS23(B)G71/45				HG-KR23 (B) G7 1/45				
MR-J2S-40B	HCMFS43(B)G71/5	MR-J4-40B-RJ020		SC-J2SBJ4KT06K	HG-KR43 (B) G7 1/5				
	HCMFS43(B)G71/11				HG-KR43 (B) G7 1/11				
	HCMFS43(B)G71/21				HG-KR43 (B) G7 1/21				
	HCMFS43(B)G71/33				HG-KR43 (B) G7 1/33				
	HCMFS43(B)G71/45				HG-KR43 (B) G7 1/45				
MR-J2S-70B	HCMFS73(B)G71/5	MR-J4-70B-RJ020		SC-J2SBJ4KT1K	HG-KR73 (B) G7 1/5				
	HCMFS73(B)G71/11				HG-KR73 (B) G7 1/11				
	HCMFS73(B)G71/21				HG-KR73 (B) G7 1/21				
	HCMFS73(B)G71/33				HG-KR73 (B) G7 1/33				
	HCMFS73(B)G71/45				HG-KR73 (B) G7 1/45				

See page 2-26 for important points to note.

(6) Existing HC-SFS motor series (standard/with brake, G2 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)		(3)	(4)		(5)		
Existing model (Note 13)		Primary/secondary/Package replacement models (Note 5, 14)			Secondary replacement/Package replacement models				
Servo Amplifier model	Servo motor Model	Servo Amplifier model (Note 1, 12)	SSCNET conversion unit model (Note 1)	Renewal kit model	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model		
							Power supply conversion cable	Encoder conversion cable	Brake conversion cable
[Medium capacity/medium inertia HC-SFS series, standard/with brake] ((B) represents models with brake)									
MR-J2S-60B	HC-SFS52(B)	MR-J4-60B-RJ020	MR-J4-T20	SC-J2SBJ4KT06K	HG-SR52(B)	△ (Note 6)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
	HC-SFS53(B)								
MR-J2S-100B	HC-SFS81(B)	MR-J4-100B-RJ020		SC-J2SBJ4KT1K	HG-SR81(B)				
	HC-SFS102(B)				HG-SR102(B)				
	HC-SFS103(B)								
MR-J2S-200B	HC-SFS121(B)	MR-J4-200B-RJ020		SC-J2SBJ4KT3K	HG-SR121(B)		SC-HAJ3PW1C1M		
	HC-SFS152(B)				HG-SR152(B)		SC-SAJ3PW2KC1M-S2		
	HC-SFS153(B)								
	HC-SFS201(B)				HG-SR201(B)		SC-HAJ3PW1C1M		
	HC-SFS202(B)				HG-SR202(B)				
	HC-SFS203(B)								
MR-J2S-350B	HC-SFS301(B)	MR-J4-350B-RJ020			HG-SR301(B)				
	HC-SFS352(B)				HG-SR352(B)				
	HC-SFS353(B)								
MR-J2S-500B	HC-SFS502(B)	MR-J4-500B-RJ020		SC-J2SBJ4KT5K	HG-SR502(B)				
MR-J2S-700B	HC-SFS702(B)	MR-J4-700B-RJ020		SC-J2SBJ4KT7K	HG-SR702(B)		Existing cable can be used.		
[Medium capacity/medium inertia HC-SFS series with high-precision reducer (G2)] ((B) represents models with brake)									
MR-J2S-60B	HC-SFS52(B)G21/5	MR-J4-60B-RJ020	MR-J4-T20	SC-J2SBJ4KT06K	HG-SR52(B)G7 1/5	× (Note 3) (Note 6)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
	HC-SFS52(B)G21/9				HG-SR52(B)G7 1/11				
	HC-SFS52(B)G21/20				HG-SR52(B)G7 1/21				
	HC-SFS52(B)G21/29				HG-SR52(B)G7 1/33				
	HC-SFS52(B)G21/45				HG-SR52(B)G7 1/45				
MR-J2S-100B	HC-SFS102(B)G21/5	MR-J4-100B-RJ020		SC-J2SBJ4KT1K	HG-SR102(B)G7 1/5				
	HC-SFS102(B)G21/9				HG-SR102(B)G7 1/11				
	HC-SFS102(B)G21/20				HG-SR102(B)G7 1/21				
	HC-SFS102(B)G21/29				HG-SR102(B)G7 1/33				
	HC-SFS102(B)G21/45				HG-SR102(B)G7 1/45				
MR-J2S-200B	HC-SFS152(B)G21/5	MR-J4-200B-RJ020		SC-J2SBJ4KT3K	HG-SR152(B)G7 1/5				
	HC-SFS152(B)G21/9				HG-SR152(B)G7 1/11				
	HC-SFS152(B)G21/20				HG-SR152(B)G7 1/21				
	HC-SFS152(B)G21/29				HG-SR152(B)G7 1/33				
	HC-SFS152(B)G21/45				HG-SR152(B)G7 1/45				
	HC-SFS202(B)G21/5				HG-SR202(B)G7 1/5		SC-HAJ3PW1C1M		
	HC-SFS202(B)G21/9				HG-SR202(B)G7 1/11				
	HC-SFS202(B)G21/20				HG-SR202(B)G7 1/21				
	HC-SFS202(B)G21/29				HG-SR202(B)G7 1/33				
	HC-SFS202(B)G21/45				HG-SR202(B)G7 1/45				
MR-J2S-350B	HC-SFS352(B)G21/5	MR-J4-350B-RJ020			HG-SR352(B)G7 1/5				
	HC-SFS352(B)G21/9				HG-SR352(B)G7 1/11				
	HC-SFS352(B)G21/20				HG-SR352(B)G7 1/21				
MR-J2S-500B	HC-SFS502(B)G21/5	MR-J4-500B-RJ020		SC-J2SBJ4KT5K	HG-SR502(B)G7 1/5				
	HC-SFS502(B)G21/9				HG-SR502(B)G7 1/11				
MR-J2S-700B	HC-SFS702(B)G21/5	MR-J4-700B-RJ020		SC-J2SBJ4KT7K	HG-SR702(B)G7 1/5		Existing cable can be used.		

See page 2-26 for important points to note.

(7) Existing HC-SFS motor series (G1 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)		(3)	(4)		(5)		
Existing model (Note 13)		Primary/secondary/Package replacement models (Note 5, 14)			Secondary replacement/Package replacement models				
Servo Amplifier model	Servo motor Model	Servo Amplifier model (Note 1, 12)	SSCNET conversion unit model (Note 1)	Renewal kit model	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model		
							Power supply conversion cable	Encoder conversion cable	Brake conversion cable
[Medium capacity/medium inertia HC-SFS series with general reducer (G1)] ((B) represents models with brake, (H) represents foot-mounting)									
MR-J2S-60B	HC-SFS52(B)G1(H)1/6	MR-J4-60B-RJ020	MR-J4-T20	SC-J2SBJ4KT06K	HG-SR52(B)G1(H)1/6	△ (Note 6)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
	HC-SFS52(B)G1(H)1/11				HG-SR52(B)G1(H)1/11				
	HC-SFS52(B)G1(H)1/17				HG-SR52(B)G1(H)1/17				
	HC-SFS52(B)G1(H)1/29				HG-SR52(B)G1(H)1/29				
	HC-SFS52(B)G1(H)1/35				HG-SR52(B)G1(H)1/35				
	HC-SFS52(B)G1(H)1/43				HG-SR52(B)G1(H)1/43				
	HC-SFS52(B)G1(H)1/59				HG-SR52(B)G1(H)1/59				
MR-J2S-100B	HC-SFS102(B)G1(H)1/6	MR-J4-100B-RJ020		SC-J2SBJ4KT1K	HG-SR102(B)G1(H)1/6				
	HC-SFS102(B)G1(H)1/11				HG-SR102(B)G1(H)1/11				
	HC-SFS102(B)G1(H)1/17				HG-SR102(B)G1(H)1/17				
	HC-SFS102(B)G1(H)1/29				HG-SR102(B)G1(H)1/29				
	HC-SFS102(B)G1(H)1/35				HG-SR102(B)G1(H)1/35				
	HC-SFS102(B)G1(H)1/43				HG-SR102(B)G1(H)1/43				
	HC-SFS102(B)G1(H)1/59				HG-SR102(B)G1(H)1/59				
MR-J2S-200B	HC-SFS152(B)G1(H)1/6	MR-J4-200B-RJ020		SC-J2SBJ4KT3K	HG-SR152(B)G1(H)1/6				
	HC-SFS152(B)G1(H)1/11				HG-SR152(B)G1(H)1/11				
	HC-SFS152(B)G1(H)1/17				HG-SR152(B)G1(H)1/17				
	HC-SFS152(B)G1(H)1/29				HG-SR152(B)G1(H)1/29				
	HC-SFS152(B)G1(H)1/35				HG-SR152(B)G1(H)1/35				
	HC-SFS152(B)G1(H)1/43				HG-SR152(B)G1(H)1/43				
	HC-SFS152(B)G1(H)1/59				HG-SR152(B)G1(H)1/59				
	HC-SFS202(B)G1(H)1/6				HG-SR202(B)G1(H)1/6		SC-HAJ3PW1C1M		
	HC-SFS202(B)G1(H)1/11				HG-SR202(B)G1(H)1/11				
	HC-SFS202(B)G1(H)1/17				HG-SR202(B)G1(H)1/17				
	HC-SFS202(B)G1(H)1/29				HG-SR202(B)G1(H)1/29				
	HC-SFS202(B)G1(H)1/35				HG-SR202(B)G1(H)1/35				
	HC-SFS202(B)G1(H)1/43				HG-SR202(B)G1(H)1/43				
	HC-SFS202(B)G1(H)1/59				HG-SR202(B)G1(H)1/59				
MR-J2S-350B	HC-SFS352(B)G1(H)1/6	MR-J4-350B-RJ020			HG-SR352(B)G1(H)1/6				
	HC-SFS352(B)G1(H)1/11				HG-SR352(B)G1(H)1/11				
	HC-SFS352(B)G1(H)1/17				HG-SR352(B)G1(H)1/17				
	HC-SFS352(B)G1(H)1/29				HG-SR352(B)G1(H)1/29				
	HC-SFS352(B)G1(H)1/35				HG-SR352(B)G1(H)1/35				
	HC-SFS352(B)G1(H)1/43				HG-SR352(B)G1(H)1/43				
	HC-SFS352(B)G1(H)1/59				HG-SR352(B)G1(H)1/59				
MR-J2S-500B	HC-SFS502(B)G1(H)1/11	MR-J4-500B-RJ020		SC-J2SBJ4KT5K	HG-SR502(B)G1(H)1/11				
	HC-SFS502(B)G1(H)1/17				HG-SR502(B)G1(H)1/17				
	HC-SFS502(B)G1(H)1/29				HG-SR502(B)G1(H)1/29				
	HC-SFS502(B)G1(H)1/35				HG-SR502(B)G1(H)1/35				
	HC-SFS502(B)G1(H)1/43				HG-SR502(B)G1(H)1/43				
MR-J2S-700B	HC-SFS702(B)G1(H)1/11	MR-J4-700B-RJ020		SC-J2SBJ4KT7K	HG-SR702(B)G1(H)1/11		Existing cable can be used.		
	HC-SFS702(B)G1(H)1/17				HG-SR702(B)G1(H)1/17				
	HC-SFS702(B)G1(H)1/29				HG-SR702(B)G1(H)1/29				
	HC-SFS702(B)G1(H)1/35				HG-SR702(B)G1(H)1/35				
	HC-SFS702(B)G1(H)1/43				HG-SR702(B)G1(H)1/43				

See page 2-26 for important points to note.

(8) Existing HC-SFS motor series (G5, G7 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)		(3)	(4)		(5)		
Existing model (Note 13)		Primary/secondary/Package replacement models (Note 5, 14)			Secondary replacement/Package replacement models				
Servo Amplifier model	Servo motor Model	Servo Amplifier model (Note 1, 12)	SSCNET conversion unit model (Note 1)	Renewal kit model	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model		
							Power supply conversion cable	Encoder conversion cable	Brake conversion cable
[Medium capacity/medium inertia HC-SFS series with high-precision reducer, flange output type (G5)] ((B) represents models with brake)									
MR-J2S-60B	HC-SFS52(B)G5 1/5	MR-J4-60B-RJ020	MR-J4-T20	SC-J2SBJ4KT06K	HG-SR52(B)G5 1/5	△ (Note 6)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
	HC-SFS52(B)G5 1/11				HG-SR52(B)G5 1/11				
	HC-SFS52(B)G5 1/21				HG-SR52(B)G5 1/21				
	HC-SFS52(B)G5 1/33				HG-SR52(B)G5 1/33				
	HC-SFS52(B)G5 1/45				HG-SR52(B)G5 1/45				
MR-J2S-100B	HC-SFS102(B)G5 1/5	MR-J4-100B-RJ020		SC-J2SBJ4KT1K	HG-SR102(B)G5 1/5				
	HC-SFS102(B)G5 1/11				HG-SR102(B)G5 1/11				
	HC-SFS102(B)G5 1/21				HG-SR102(B)G5 1/21				
	HC-SFS102(B)G5 1/33				HG-SR102(B)G5 1/33				
	HC-SFS102(B)G5 1/45				HG-SR102(B)G5 1/45				
MR-J2S-200B	HC-SFS152(B)G5 1/5	MR-J4-200B-RJ020		SC-J2SBJ4KT3K	HG-SR152(B)G5 1/5				
	HC-SFS152(B)G5 1/11				HG-SR152(B)G5 1/11				
	HC-SFS152(B)G5 1/21				HG-SR152(B)G5 1/21				
	HC-SFS152(B)G5 1/33				HG-SR152(B)G5 1/33				
	HC-SFS152(B)G5 1/45				HG-SR152(B)G5 1/45				
	HC-SFS202(B)G5 1/5				HG-SR202(B)G5 1/5		SC-HAJ3PW1C1M		
	HC-SFS202(B)G5 1/11				HG-SR202(B)G5 1/11				
	HC-SFS202(B)G5 1/21				HG-SR202(B)G5 1/21				
	HC-SFS202(B)G5 1/33				HG-SR202(B)G5 1/33				
	HC-SFS202(B)G5 1/45				HG-SR202(B)G5 1/45				
MR-J2S-350B	HC-SFS352(B)G5 1/5	MR-J4-350B-RJ020			HG-SR352(B)G5 1/5				
	HC-SFS352(B)G5 1/11				HG-SR352(B)G5 1/11				
	HC-SFS352(B)G5 1/21				HG-SR352(B)G5 1/21				
MR-J2S-500B	HC-SFS502(B)G5 1/5	MR-J4-500B-RJ020		SC-J2SBJ4KT5K	HG-SR502(B)G5 1/5				
	HC-SFS502(B)G5 1/11				HG-SR502(B)G5 1/11				
MR-J2S-700B	HC-SFS702(B)G5 1/5	MR-J4-700B-RJ020		SC-J2SBJ4KT7K	HG-SR702(B)G5 1/5		Existing cable can be used.		
[Medium capacity/medium inertia HC-SFS series with high-precision reducer, shaft output type (G7)] ((B) represents models with brake)									
MR-J2S-60B	HC-SFS52(B)G7 1/5	MR-J4-60B-RJ020	MR-J4-T20	SC-J2SBJ4KT06K	HG-SR52(B)G7 1/5	△ (Note 6)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
	HC-SFS52(B)G7 1/11				HG-SR52(B)G7 1/11				
	HC-SFS52(B)G7 1/21				HG-SR52(B)G7 1/21				
	HC-SFS52(B)G7 1/33				HG-SR52(B)G7 1/33				
	HC-SFS52(B)G7 1/45				HG-SR52(B)G7 1/45				
MR-J2S-100B	HC-SFS102(B)G7 1/5	MR-J4-100B-RJ020		SC-J2SBJ4KT1K	HG-SR102(B)G7 1/5				
	HC-SFS102(B)G7 1/11				HG-SR102(B)G7 1/11				
	HC-SFS102(B)G7 1/21				HG-SR102(B)G7 1/21				
	HC-SFS102(B)G7 1/33				HG-SR102(B)G7 1/33				
	HC-SFS102(B)G7 1/45				HG-SR102(B)G7 1/45				
MR-J2S-200B	HC-SFS152(B)G7 1/5	MR-J4-200B-RJ020		SC-J2SBJ4KT3K	HG-SR152(B)G7 1/5				
	HC-SFS152(B)G7 1/11				HG-SR152(B)G7 1/11				
	HC-SFS152(B)G7 1/21				HG-SR152(B)G7 1/21				
	HC-SFS152(B)G7 1/33				HG-SR152(B)G7 1/33				
	HC-SFS152(B)G7 1/45				HG-SR152(B)G7 1/45				
	HC-SFS202(B)G7 1/5				HG-SR202(B)G7 1/5		SC-HAJ3PW1C1M		
	HC-SFS202(B)G7 1/11				HG-SR202(B)G7 1/11				
	HC-SFS202(B)G7 1/21				HG-SR202(B)G7 1/21				
	HC-SFS202(B)G7 1/33				HG-SR202(B)G7 1/33				
	HC-SFS202(B)G7 1/45				HG-SR202(B)G7 1/45				
MR-J2S-350B	HC-SFS352(B)G7 1/5	MR-J4-350B-RJ020			HG-SR352(B)G7 1/5				
	HC-SFS352(B)G7 1/11				HG-SR352(B)G7 1/11				
	HC-SFS352(B)G7 1/21				HG-SR352(B)G7 1/21				
MR-J2S-500B	HC-SFS502(B)G7 1/5	MR-J4-500B-RJ020		SC-J2SBJ4KT5K	HG-SR502(B)G7 1/5				
	HC-SFS502(B)G7 1/11				HG-SR502(B)G7 1/11				
MR-J2S-700B	HC-SFS702(B)G7 1/5	MR-J4-700B-RJ020		SC-J2SBJ4KT7K	HG-SR702(B)G7 1/5		Existing cable can be used.		

See page 2-26 for important points to note.

(9) Existing HC-RFS motor series (standard/with brake, G2 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)		(3)	(4)		(5)		(6)	(7)		
Existing model (Note 13)		Primary replacement model (Note 5)			Secondary replacement/Package replacement models							
										Motor side conversion cable		
Servo Amplifier model	Servo Motor Model	Servo Amplifier model (Note 1, 12)	SSCNET conversion unit model (Note 1)	Renewal kit model	Servo Amplifier model (Note 1)	SSCNET Conversion unit Model (Note 1)	Servo motor Model (Note 1)	Com-patibility	Renewal kit model	Power supply conversion cable	Encoder conversion cable	Brake conversion cable
[Medium capacity/ultra-low inertia HC-RFS series, standard/with brake] ((B) represents models with brake)												
MR-J2S-200B	HC-RFS103 (B)	MR-J4-200B-RJ020	MR-J4-T20	SC-J2SBJ4KT3K	MR-J4-200B-RJ020	MR-J4-T20	HG-RR103 (B)	○	SC-J2SBJ4KT3K	Existing cable can be used.	SC-HAJ3ENM3C1M	Existing cable can be used.
	HC-RFS153 (B)						HG-RR153 (B)					
MR-J2S-350B	HC-RFS203 (B)	MR-J4-350B-RJ020			MR-J4-350B-RJ020		HG-RR203 (B)					
MR-J2S-500B	HC-RFS353 (B)	MR-J4-500B-RJ020		SC-J2SBJ4KT5K	MR-J4-500B-RJ020		HG-RR353 (B)		SC-J2SBJ4KT5K			
	HC-RFS503 (B)						HG-RR503 (B)					
[Medium capacity/ultra-low inertia HC-RFS series with high-precision reducer (G2)] ((B) represents models with brake)												
MR-J2S-200B	HC-RFS103 (B) G2 1/5	MR-J4-200B-RJ020 (Note 10)	MR-J4-T20	SC-J2SBJ4KT3K	MR-J4-100B-RJ020 (Note 10)	MR-J4-T20	HG-SR102 (B) G7 1/5	× (Note 3) (Note 4)	(Note 11)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
	HC-RFS103 (B) G2 1/9						HG-SR102 (B) G7 1/11					
	HC-RFS103 (B) G2 1/20						HG-SR102 (B) G7 1/21					
	HC-RFS103 (B) G2 1/29						HG-SR102 (B) G7 1/33					
	HC-RFS103 (B) G2 1/45						HG-SR102 (B) G7 1/45					
	HC-RFS153 (B) G2 1/5	MR-J4-200B-RJ020			MR-J4-200B-RJ020		HG-SR152 (B) G7 1/5		SC-J2SBJ4KT3K			
	HC-RFS153 (B) G2 1/9						HG-SR152 (B) G7 1/11					
	HC-RFS153 (B) G2 1/20						HG-SR152 (B) G7 1/21					
	HC-RFS153 (B) G2 1/29						HG-SR152 (B) G7 1/33					
	HC-RFS153 (B) G2 1/45						HG-SR152 (B) G7 1/45					
MR-J2S-350B	HC-RFS203 (B) G2 1/5	MR-J4-350B-RJ020 (Note 10)			MR-J4-200B-RJ020 (Note 10)		HG-SR202 (B) G7 1/5			SC-J2SJ4PW2C1M		
	HC-RFS203 (B) G2 1/9						HG-SR202 (B) G7 1/11					
	HC-RFS203 (B) G2 1/20						HG-SR202 (B) G7 1/21					
	HC-RFS203 (B) G2 1/29						HG-SR202 (B) G7 1/33					
	HC-RFS203 (B) G2 1/45						HG-SR202 (B) G7 1/45					
MR-J2S-500B	HC-RFS353 (B) G2 1/5	MR-J4-500B-RJ020 (Note 10)		SC-J2SBJ4KT5K	MR-J4-350B-RJ020 (Note 10)		HG-SR352 (B) G7 1/5		(Note 11)	SC-HAJ3PW1C1M		
	HC-RFS353 (B) G2 1/9						HG-SR352 (B) G7 1/11					
	HC-RFS353 (B) G2 1/20						HG-SR352 (B) G7 1/21					
	HC-RFS353 (B) G2 1/29											
	HC-RFS503 (B) G2 1/5	MR-J4-500B-RJ020			MR-J4-500B-RJ020		HG-SR502 (B) G7 1/5		SC-J2SBJ4KT5K			
	HC-RFS503 (B) G2 1/9						HG-SR502 (B) G7 1/11					
	HC-RFS503 (B) G2 1/20											

See page 2-26 for important points to note.

(10) Existing HC-RFS motor series (G5, G7 reducer)

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)		(3)	(4)		(5)		(6)	(7)		
Existing model (Note 13)		Primary replacement model (Note 5)			Secondary replacement/Package replacement models							
Servo amplifier model	Servo Motor Model	Servo Amplifier model (Note 1, 12)	SSCNET conversion unit model (Note 1)	Renewal kit model	Servo Amplifier model (Note 1)	SSCNET Conversion unit Model (Note 1)	Servo motor Model (Note 1)	Compatibility	Renewal kit model	Motor side conversion cable		
										Power supply conversion cable	Encoder conversion cable	Brake conversion cable
[Medium capacity/ultra-low inertia HC-RFS series with high-precision reducer, flange output type (G5)] ((B) represents models with brake)												
MR-J2S-200B	HC-RFS103 (B) G5 1/5	MR-J4-200B-RJ020 (Note 10)	MR-J4-T20	SC-J2SBJ4KT3K	MR-J4-100B-RJ020 (Note 10)	MR-J4-T20	HG-SR102 (B) G5 1/5	× (Note 3) (Note 4)	(Note 11)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
	HC-RFS103 (B) G5 1/11						HG-SR102 (B) G5 1/11					
	HC-RFS103 (B) G5 1/21						HG-SR102 (B) G5 1/21					
	HC-RFS103 (B) G5 1/33						HG-SR102 (B) G5 1/33					
	HC-RFS103 (B) G5 1/45						HG-SR102 (B) G5 1/45					
	HC-RFS153 (B) G5 1/5	MR-J4-200B-RJ020			MR-J4-200B-RJ020		HG-SR152 (B) G5 1/5		SC-J2SBJ4KT3K			
	HC-RFS153 (B) G5 1/11						HG-SR152 (B) G5 1/11					
	HC-RFS153 (B) G5 1/21						HG-SR152 (B) G5 1/21					
	HC-RFS153 (B) G5 1/33						HG-SR152 (B) G5 1/33					
	HC-RFS153 (B) G5 1/45						HG-SR152 (B) G5 1/45					
MR-J2S-350B	HC-RFS203 (B) G5 1/5	MR-J4-350B-RJ020 (Note 10)			MR-J4-200B-RJ020 (Note 10)		HG-SR202 (B) G5 1/5			SC-J2SJ4PW2C1M		
	HC-RFS203 (B) G5 1/11						HG-SR202 (B) G5 1/11					
	HC-RFS203 (B) G5 1/21						HG-SR202 (B) G5 1/21					
	HC-RFS203 (B) G5 1/33						HG-SR202 (B) G5 1/33					
	HC-RFS203 (B) G5 1/45						HG-SR202 (B) G5 1/45					
MR-J2S-500B	HC-RFS353 (B) G5 1/5	MR-J4-500B-RJ020 (Note 10)		SC-J2SBJ4KT5K	MR-J4-350B-RJ020 (Note 10)		HG-SR352 (B) G5 1/5		(Note 11)	SC-HAJ3PW1C1M		
	HC-RFS353 (B) G5 1/11						HG-SR352 (B) G5 1/11					
	HC-RFS353 (B) G5 1/21						HG-SR352 (B) G5 1/21					
	HC-RFS353 (B) G5 1/33											
	HC-RFS503 (B) G5 1/5	MR-J4-500B-RJ020			MR-J4-500B-RJ020		HG-SR502 (B) G5 1/5		SC-J2SBJ4KT5K			
	HC-RFS503 (B) G5 1/11						HG-SR502 (B) G5 1/11					
	HC-RFS503 (B) G5 1/21											
[Medium capacity/ultra-low inertia HC-RFS series with high-precision reducer, shaft output type (G7)] ((B) represents models with brake)												
MR-J2S-200B	HC-RFS103 (B) G7 1/5	MR-J4-200B-RJ020 (Note 10)	MR-J4-T20	SC-J2SBJ4KT3K	MR-J4-100B-RJ020 (Note 10)	MR-J4-T20	HG-SR102 (B) G7 1/5	× (Note 3) (Note 4)	(Note 11)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
	HC-RFS103 (B) G7 1/11						HG-SR102 (B) G7 1/11					
	HC-RFS103 (B) G7 1/21						HG-SR102 (B) G7 1/21					
	HC-RFS103 (B) G7 1/33						HG-SR102 (B) G7 1/33					
	HC-RFS103 (B) G7 1/45						HG-SR102 (B) G7 1/45					
	HC-RFS153 (B) G7 1/5	MR-J4-200B-RJ020			MR-J4-200B-RJ020		HG-SR152 (B) G7 1/5		SC-J2SBJ4KT3K			
	HC-RFS153 (B) G7 1/11						HG-SR152 (B) G7 1/11					
	HC-RFS153 (B) G7 1/21						HG-SR152 (B) G7 1/21					
	HC-RFS153 (B) G7 1/33						HG-SR152 (B) G7 1/33					
	HC-RFS153 (B) G7 1/45						HG-SR152 (B) G7 1/45					
MR-J2S-350B	HC-RFS203 (B) G7 1/5	MR-J4-350B-RJ020 (Note 10)			MR-J4-200B-RJ020 (Note 10)		HG-SR202 (B) G7 1/5			SC-J2SJ4PW2C1M		
	HC-RFS203 (B) G7 1/11						HG-SR202 (B) G7 1/11					
	HC-RFS203 (B) G7 1/21						HG-SR202 (B) G7 1/21					
	HC-RFS203 (B) G7 1/33						HG-SR202 (B) G7 1/33					
	HC-RFS203 (B) G7 1/45						HG-SR202 (B) G7 1/45					
MR-J2S-500B	HC-RFS353 (B) G7 1/5	MR-J4-500B-RJ020 (Note 10)		SC-J2SBJ4KT5K	MR-J4-350B-RJ020 (Note 10)		HG-SR352 (B) G7 1/5		(Note 11)	SC-HAJ3PW1C1M		
	HC-RFS353 (B) G7 1/11						HG-SR352 (B) G7 1/11					
	HC-RFS353 (B) G7 1/21						HG-SR352 (B) G7 1/21					
	HC-RFS353 (B) G7 1/33											
	HC-RFS503 (B) G7 1/5	MR-J4-500B-RJ020			MR-J4-500B-RJ020		HG-SR502 (B) G7 1/5		SC-J2SBJ4KT5K			
	HC-RFS503 (B) G7 1/11						HG-SR502 (B) G7 1/11					
	HC-RFS503 (B) G7 1/21											

See page 2-26 for important points to note.

(11) Existing HC-UFS motor series

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)		(3)	(4)		(5)		
Existing model (Note 13)		Primary/secondary/Package replacement models (Note 5, 14)			Secondary replacement/Package replacement models				
Servo Amplifier model	Servo motor model	Servo Amplifier model (Note 1, 12)	SSCNET conversion unit model (Note 1)	Renewal kit model	Servo motor model (Note 1)	Com-patibility	Motor side conversion cable model		
							Power supply conversion cable	Encoder conversion cable	Brake conversion cable
[Medium capacity/flat type HC-UFS series, standard/with brake] ((B) represents models with brake)									
MR-J2S-70B	HC-UFS72(B)	MR-J4-70B-RJ020	MR-J4-T20	SC-J2SBJ4KT1K	HG-UR72 (B)	○	Existing cable can be used.	SC-HAJ3ENM3C1M	Existing cable can be used.
MR-J2S-200B	HC-UFS152(B)	MR-J4-200B-RJ020		SC-J2SBJ4KT3K	HG-UR152 (B)				
MR-J2S-350B	HC-UFS202(B)	MR-J4-350B-RJ020			HG-UR202 (B)				
MR-J2S-500B	HC-UFS352(B)	MR-J4-500B-RJ020		SC-J2SBJ4KT5K	HG-UR352 (B)				
	HC-UFS502(B)				HG-UR502 (B)				
Small capacity/flat type HC-UFS series, standard/with brake] ((B) represents models with brake)									
MR-J2S-10B	HC-UFS13(B)	MR-J4-10B-RJ020	MR-J4-T20	SC-J2SBJ4KT02K	HG-KR13 (B)	× (Note 3)	Without brake: SC-J2SJ4PW1C03M-■ With brake: SC-J2SJ4PWBK1C03M-■	SC-HAJ3ENM1C03M-■	Built in to power supply conversion cable.
MR-J2S-20B	HC-UFS23(B)	MR-J4-20B-RJ020			HG-KR23 (B)				
MR-J2S-40B	HC-UFS43(B)	MR-J4-40B-RJ020		SC-J2SBJ4KT06K	HG-KR43 (B)				
MR-J2S-70B	HC-UFS73(B)	MR-J4-70B-RJ020		SC-J2SBJ4KT1K	HG-KR73 (B)				

See page 2-26 for important points to note.

(12) Existing HC-LFS motor series

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)		(3)	(4)		(5)		(6)	(7)		
Existing model (Note 13)		Primary replacement model (Note 5)			Secondary replacement/Package replacement models							
Servo Amplifier model	Servo Motor Model	Servo Amplifier model (Note 1, 12)	SSCNET conversion unit model (Note 1)	Renewal kit model	Servo Amplifier model (Note 1)	SSCNET conversion unit model (Note 1)	Servo Motor Model (Note 1)	Com-patibility	Motor side conversion cable model			
									Renewal kit model	Power supply conversion cable	Encoder conversion cable	Brake conversion cable
[Medium capacity/low inertia HC-LFS series, standard/with brake] ((B) represents models with brake)												
MR-J2S-60B	HC-LFS52(B)	MR-J4-60B-RJ020 (Note 10)	MR-J4-T20	SC-J2SBJ4KT06K	MR-J4-70B-RJ020 (Note 10)	MR-J4-T20	HG-JR73 (B)	× (Note 3)	(Note 11)	SC-SAJ3PW2KC1M-S2	SC-HAJ3ENM3C1M	(Note 7)
MR-J2S-100B	HC-LFS102(B)	MR-J4-100B-RJ020 (Note 10)		SC-J2SBJ4KT1K	MR-J4-200B-RJ020 (Note 10)		HG-JR153 (B)					
MR-J2S-200B	HC-LFS152(B)	MR-J4-200B-RJ020 (Note 10)		SC-J2SBJ4KT3K	MR-J4-350B-RJ020 (Note 10)		HG-JR353 (B)		SC-J2SBJ4KT3K	SC-J2SJ4PW2C1M		
MR-J2S-350B	HC-LFS202(B)	MR-J4-350B-RJ020			MR-J4-350B-RJ020					SC-HAJ3PW1C1M		
MR-J2S-500B	HC-LFS302(B)	MR-J4-500B-RJ020		SC-J2SBJ4KT5K	MR-J4-500B-RJ020		HG-JR503 (B)		SC-J2SBJ4KT5K			

See page 2-26 for important points to note.

(13) Existing HA-LFS motor series

○: Compatible; △: Limited functions or compatible with certain conditions; ×: Incompatible

(1)		(2)		(3)	(4)		(5)		(6)	(7)		
Existing model (Note 13)		Primary replacement model (Note 5)			Secondary replacement/Package replacement models							
Servo amplifier model	Servo Motor Model	Servo Amplifier model (Note 1, 12)	SSCNET conversion unit model (Note 1)	Renewal kit model	Servo Amplifier model (Note 1)	SSCNET conversion unit model (Note 1)	Servo Motor Model (Note 1)	Compatibility	Motor side conversion cable model			
									Renewal kit model	Power supply conversion cable	Encoder conversion cable	Brake/Conversion cable for the cooling fan
[Large capacity/low inertia HA-LFS series, standard/with brake] ((B) represents models with brake)												
MR-J2S-500B	HA-LFS502	MR-J4-500B-RJ020	MR-J4-T20	SC-J2SBJ4KT5K	MR-J4-500B-RJ020	MR-J4-T20	HG-SR502	× (Note 3)	SC-J2SBJ4KT5K	SC-HAJ3PW1C1M	SC-HAJ3ENM3C1M	
MR-J2S-700B	HA-LFS702	MR-J4-700B-RJ020		SC-J2SBJ4KT7K	MR-J4-700B-RJ020		HG-SR702		SC-J2SBJ4KT7K	Existing cable can be used.		
MR-J2S-11KB	HA-LFS11K1M (B)	MR-J4-11KB-RJ020		SC-J2SBJ4KT15K	MR-J4-11KB-RJ020		HG-JR11K1M (B)		SC-J2SBJ4KT15K	SC-J2SJ4PW3C1M-■	Existing cable can be used	• Existing brake cable can be used. • Cooling fan cable (Note 9)
MR-J2S-15KB	HA-LFS15K2 (B)	MR-J4-15KB-RJ020 (Note 10)			MR-J4-11KB-RJ020 (Note 10)							
	HA-LFS15K1M (B)	MR-J4-15KB-RJ020			MR-J4-15KB-RJ020		HG-JR15K1M (B)					
MR-J2S-22KB	HA-LFS22K2 (B)	MR-J4-22KB-RJ020 (Note 10)		SC-J2SBJ4KT22K (Note 10)	MR-J4-15KB-RJ020 (Note 10)				(Note 11)			
	HA-LFS22K1M	MR-J4-22KB-RJ020		SC-J2SBJ4KT22K	MR-J4-22KB-RJ020		HG-JR22K1M (Note 4)		SC-J2SBJ4KT22K	(Note 8)		• Cooling fan conversion cable SC-J2SJ4FAN1C1M

See page 2-26 for important points to note.

Note 1. Purchase from Mitsubishi Electric.

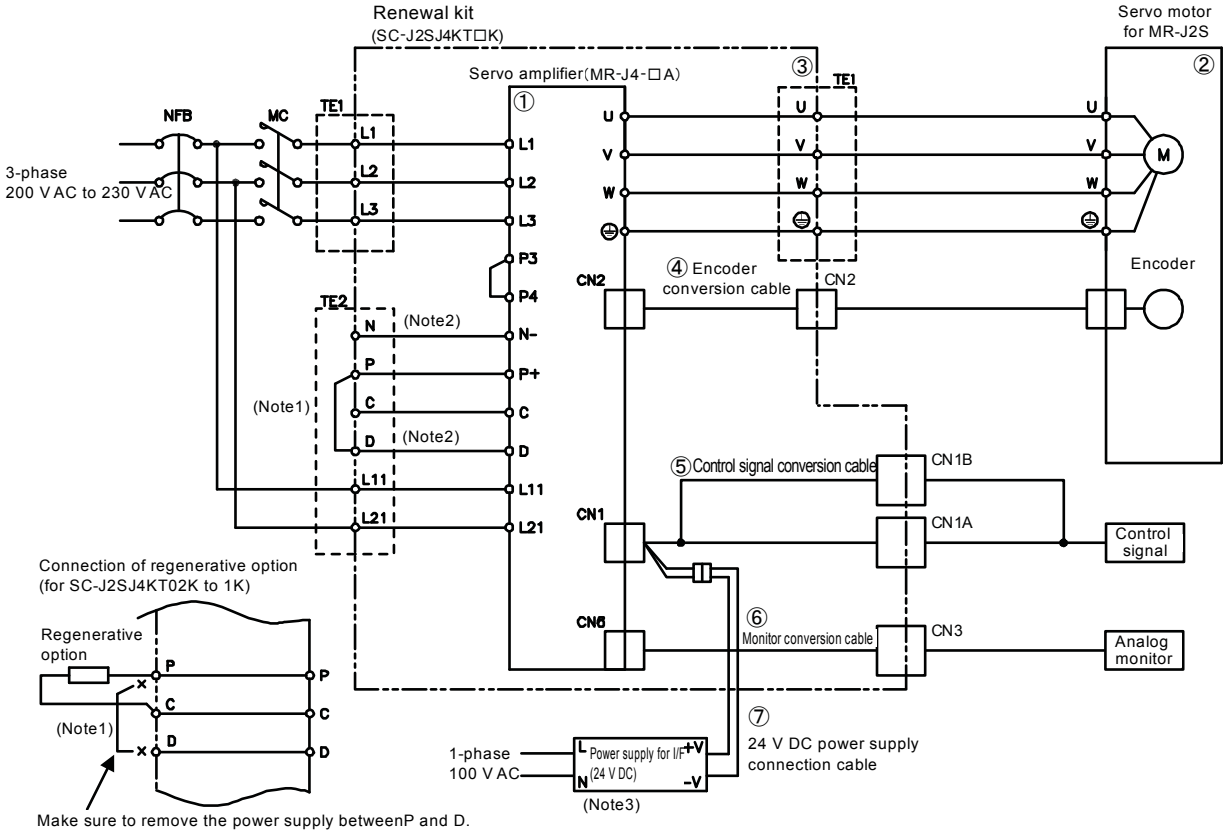
2. The actual reduction ratio is different when replacing a motor. Note that it is necessary to adjust the electronic gear after checking the actual reduction ratio of the motor. For details, refer to Part 6 of the "Guide for Replacing MR-J2S / J2M L (NA) 03092" issued by Mitsubishi Electric Corporation.
3. Note that because the flange dimensions and shaft end dimensions are not compatible it is necessary to change the servo motor shaft connection portion, including the mounting portion and the coupling/pulley when replacing the motor. For details, refer to Part 6 of the "Guide for Replacing MR-J2S / J2M L (NA) 03092" issued by Mitsubishi Electric Corporation.
4. Before replacing the motor, the moment of inertia is different from the motor before replacement. Take note of the load to motor inertia ratio. Review of the operation pattern is necessary depending on the existing device. For details, refer to Part 6 of the "Guide for Replacing MR-J2S / J2M L (NA) 03092" issued by Mitsubishi Electric Corporation.
5. If the gain of the existing servo amplifier is extremely high, there may be slight differences in characteristics upon primary replacement. Make sure to set the gain again.
6. Because the total length of the motor becomes shorter, the motor connector may interfere with the device side. Take care.
7. Laying a new electromagnetic brake cable is required when performing a secondary replacement or package replacement of a motor with brake. Use a motor electromagnetic brake cable (SC-BKC1CBL1M-L or SC-BKC1CBL1M-H) made by Mitsubishi.
8. If the motor is replaced, it is necessary to change the crimped terminal of the existing power supply cable. (Screw size, UVW terminal: M8 → M10; Grounding terminal: M6 → M10; Thermistor terminal: M4 → M3.5)
9. There is no cooling fan in the replacement motor when the motor is replaced. Because the existing wiring becomes unnecessary, insulate as needed.
10. Package replacement is recommended because replacing the servo amplifier again is necessary at secondary replacement.
11. The renewal kit cannot be used for secondary or package replacement due to large differences in servo amplifier shape resulting from changes in servo amplifier capacity.
12. The software version for primary replacement of servo amplifiers are different depending on the motor. Contact Mitsubishi Electric Corporation for ordering assistance.
13. For information regarding the replacement of existing models which are unlisted, please contact Mitsubishi Electric Corporation.
14. The replacement servo amplifier, SSCNET conversion unit, and renewal kit are the same for primary, secondary, and package replacement.
15. When replacing a motor, the torque characteristics are different compared with the motor before replacement. For details, refer to Part 6 of the "Guide for Replacing MR-J2S / J2M L (NA) 03092" issued by Mitsubishi Electric Corporation.

2．5 Renewal Tool Connection Diagram

These diagrams are the connection diagrams for wiring the servo amplifier and servo motor when using the renewal tool.

2．5．1 SC-J2SJ4KT02K～3K

(1) Primary replacement (when replacing the servo amplifier only)



No.	Product name	
(1)	Servo amplifier	*1
(2)	Servo motor	*1
(3)	Renewal kit	
(4)	Encoder conversion cable	
(5)	Control signal conversion cable	
(6)	Monitor conversion cable	
(7)	24 V DC power supply connection cable	

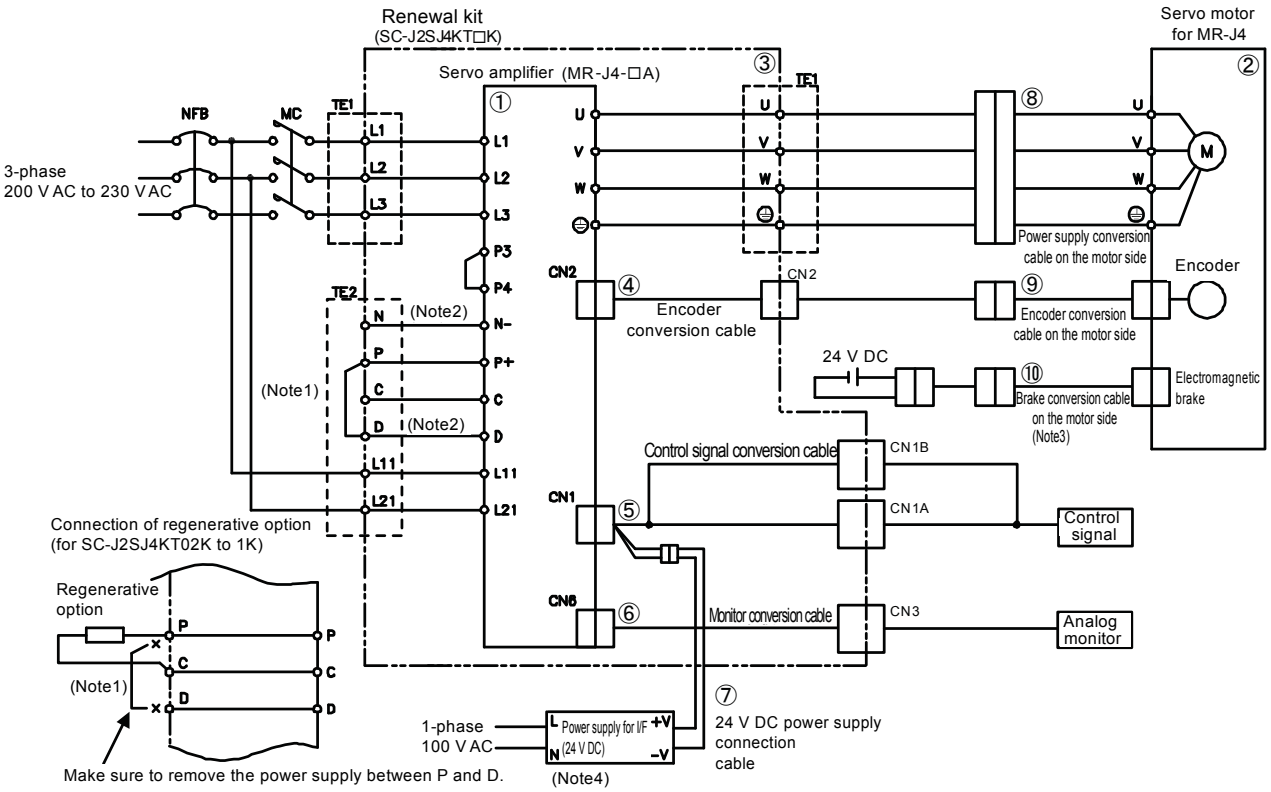
*1: Manufactured by Mitsubishi Electric.

Note 1. When using the regenerative option, make sure to remove the wiring between P and D, connect with the wiring between the renewal kit and the servo amplifier, and mount the regenerative option between P and C. Ensure the connection destinations are correct. The servo amplifier may malfunction if the connection destinations are incorrect.
For details, refer to MR-J4-_A Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

2. The N terminal of TE2 is limited to SC-J2SJ4KT1K and 3K. There is no D terminal wiring for SC-J2SJ4KT3K.

3. Required only when the internal power supply (24 V DC) for the I/F is used in the existing MR-J2S-_A_ servo amplifier. Not included with the renewal tool. Note that a separate 24 V DC power supply (current capacity: 80 mA or more) is required when replacing.
When connecting the 24 V DC power supply, use the "24 V DC power supply connection cable (model: SC-J2SJ4CTPWC5M)" included in the package.
(Electric wire colors: Red (+ side); white (- side))

(2) Secondary replacement (when replacing the servo motor after replacing the servo amplifier)
/Package replacement (when replacing the servo amplifier and the servo motor simultaneously)



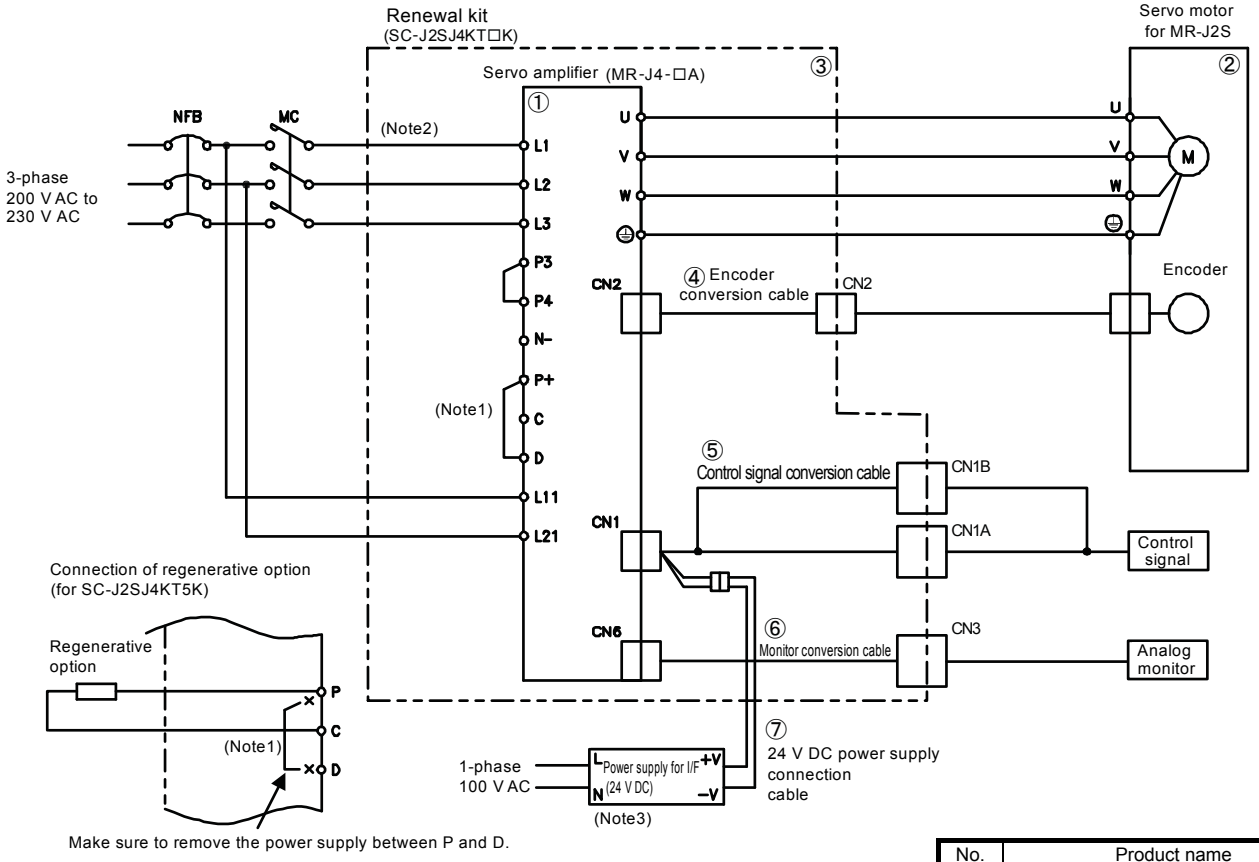
No.	Product name	
(1)	Servo amplifier	*1,2
(2)	Servo motor	*1
(3)	Renewal kit	*2
(4)	Encoder conversion cable	*2
(5)	Control signal conversion cable	*2
(6)	Monitor conversion cable	*2
(7)	24 V DC power supply connection cable	*2
(8)	Power supply conversion cable on the motor side	
(9)	Encoder conversion cable on the motor side	
(10)	Brake conversion cable on the motor side	

*1: Manufactured by Mitsubishi Electric.
*2: For secondary replacement, replacement finished through primary replacement

Note 1. When using the regenerative option, make sure to remove the wiring between P and D, connect with the wiring between the renewal kit and the servo amplifier, and mount the regenerative option between P and C. Ensure the connection destinations are correct. The servo amplifier may malfunction if the connection destinations are incorrect.
For details, refer to MR-J4-_A Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.
2. The N terminal of TE2 is limited to SC-J2SJ4KT1K and 3K. There is no D terminal wiring for SC-J2SJ4KT3K.
3. Unnecessary if electromagnetic brakes are not installed.
4. Required only when the internal power supply (24 V DC) for the I/F is used in the existing MR-J2S-_A_ servo amplifier. Not included with the renewal tool. Note that a separate 24 V DC power supply (current capacity: 80 mA or more) is required when replacing.
When connecting the 24 V DC power supply, use the "24 V DC power supply connection cable (model: SC-J2SJ4CTPWC5M)" included in the package.
(Electric wire colors: Red (+ side); white (- side))

2．5．2 SC-J2SJ4KT5K

(1) Primary replacement (when replacing the servo amplifier only)



No.	Product name	
(1)	Servo amplifier	*1
(2)	Servo motor	*1
(3)	Renewal kit	
(4)	Encoder conversion cable	
(5)	Control signal conversion cable	
(6)	Monitor conversion cable	
(7)	24 V DC power supply connection cable	

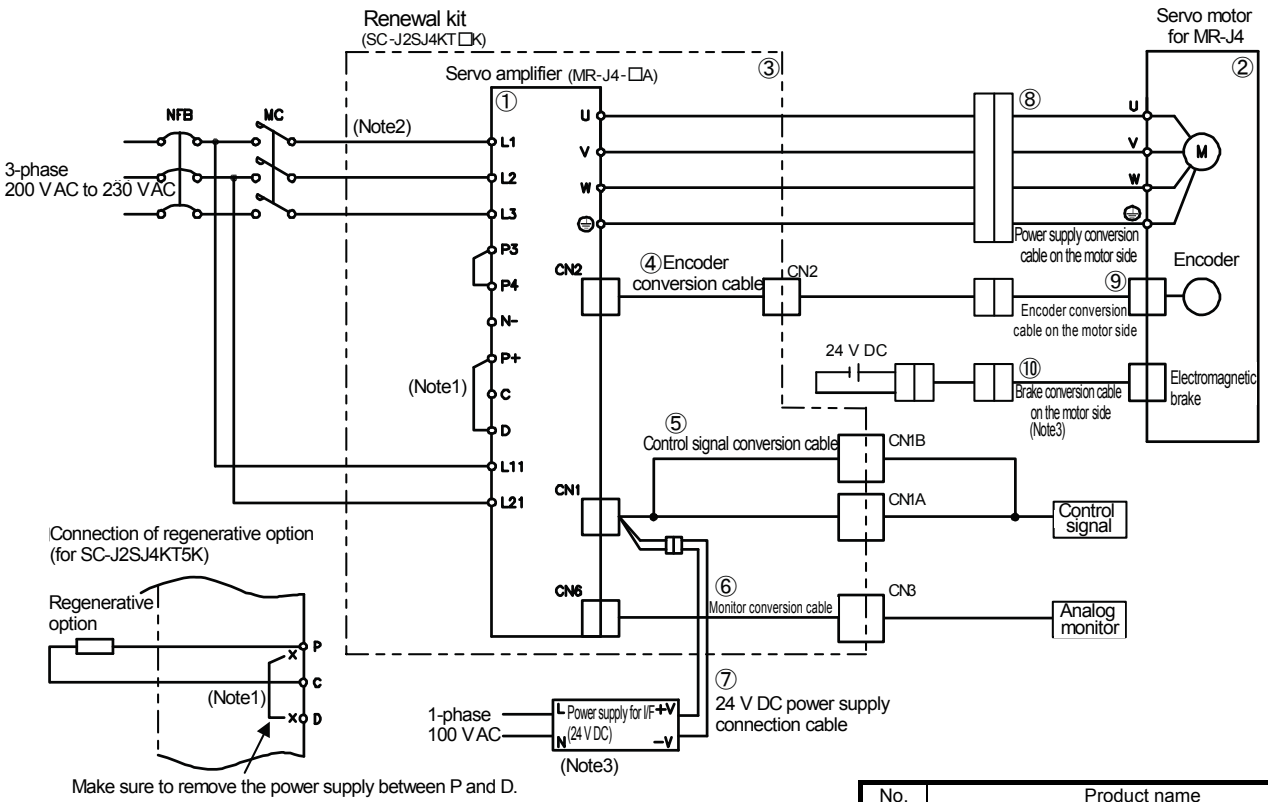
*1: Manufactured by Mitsubishi Electric.

Note 1. When using the regenerative option, make sure to remove the wiring between P+ and D, connect with the wiring between the renewal kit and the servo amplifier, and mount the regenerative option between P+ and C. Ensure the connection destinations are correct. The servo amplifier may malfunction if the connection destinations are incorrect.
For details, refer to MR-J4-_A Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

2. There is no conversion terminal block in the SC-J2SJ4KT5K renewal kit. Directly connect to the MR-J4 servo amplifier.
For details, refer to MR-J4-_A Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

3. Required only when the internal power supply (24 V DC) for the I/F is used in the existing MR-J2S- A servo amplifier. Not included with the renewal tool. Note that a separate 24 V DC power supply (current capacity: 80 mA or more) is required when replacing.
When connecting the 24 V DC power supply, use the "24 V DC power supply connection cable (model: SC-J2SJ4CTPWC5M)" included in the package.
(Electric wire colors: Red (+ side); white (- side))

(2) Secondary replacement (when replacing the servo motor after replacing the servo amplifier)
/Package replacement (when replacing the servo amplifier and the servo motor simultaneously)



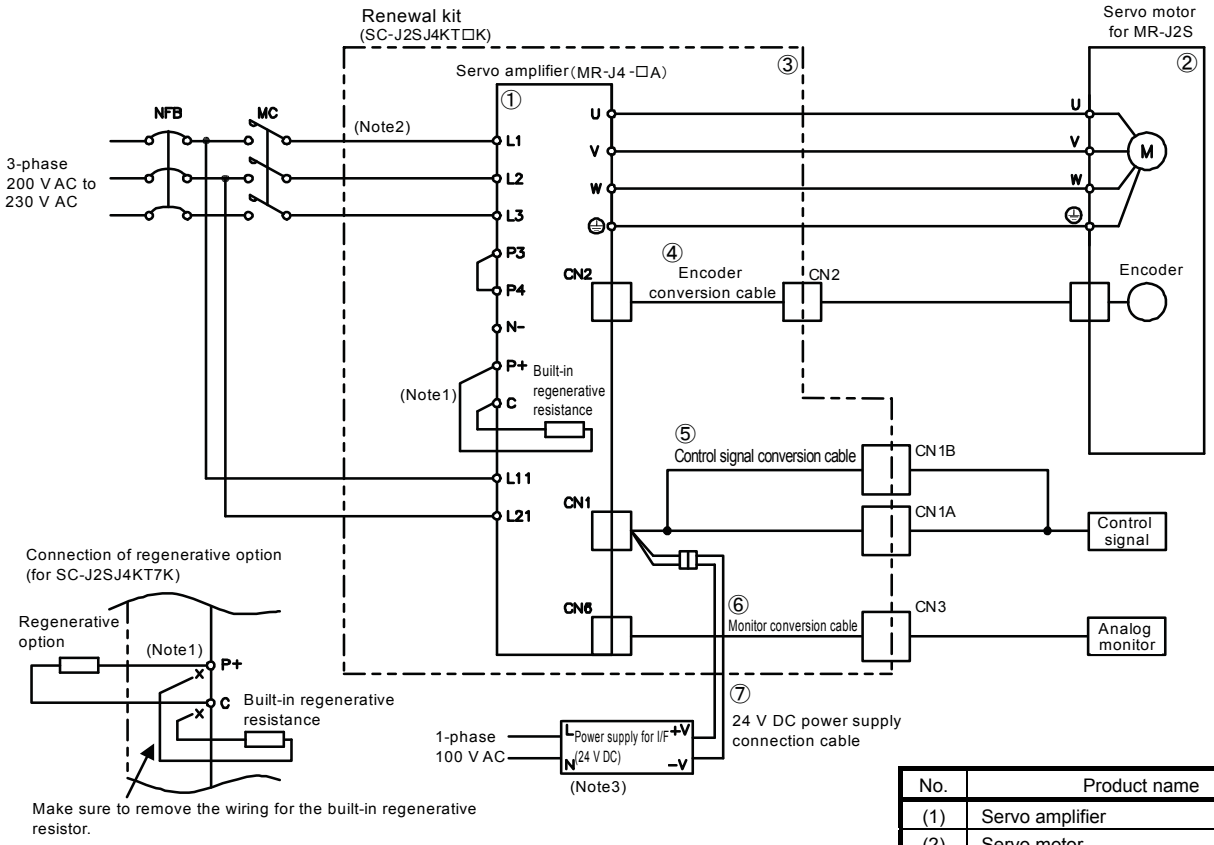
No.	Product name	
(1)	Servo amplifier	*1,2
(2)	Servo motor	*1
(3)	Renewal kit	
(4)	Encoder conversion cable	*2
(5)	Control signal conversion cable	*2
(6)	Monitor conversion cable	*2
(7)	24 V DC power supply connection cable	*2
(8)	Power supply conversion cable on the motor side	
(9)	Encoder conversion cable on the motor side	
(10)	Brake conversion cable on the motor side	

*1: Manufactured by Mitsubishi Electric.
*2: *2: For secondary replacement, replacement finished through primary replacement

Note 1. When using the regenerative option, make sure to remove the wiring between P+ and D, connect with the wiring between the renewal kit and the servo amplifier, and mount the regenerative option between P+ and C. Ensure the connection destinations are correct. The servo amplifier may malfunction if the connection destinations are incorrect.
For details, refer to MR-J4-_A Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.
2. There is no conversion terminal block in the SC-J2SJ4KT5K renewal kit. Directly connect to the MR-J4 servo amplifier.
For details, refer to MR-J4-_A Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.
3. Unnecessary if electromagnetic brakes are not installed.
4. Required only when the internal power supply (24 V DC) for the I/F is used in the existing MR-J2S- A servo amplifier. Not included with the renewal tool. Note that a separate 24 V DC power supply (current capacity: 80 mA or more) is required when replacing.
When connecting the 24 V DC power supply, use the "24 V DC power supply connection cable (model: SC-J2SJ4CTPWC5M)" included in the package.
(Electric wire colors: Red (+ side); white (- side))

2．5．3　SC-J2SJ4KT7K

(1) Primary replacement (when replacing the servo amplifier only)



No.	Product name	
(1)	Servo amplifier	*1
(2)	Servo motor	*1
(3)	Renewal kit	
(4)	Encoder conversion cable	
(5)	Control signal conversion cable	
(6)	Monitor conversion cable	
(7)	24 V DC power supply connection cable	

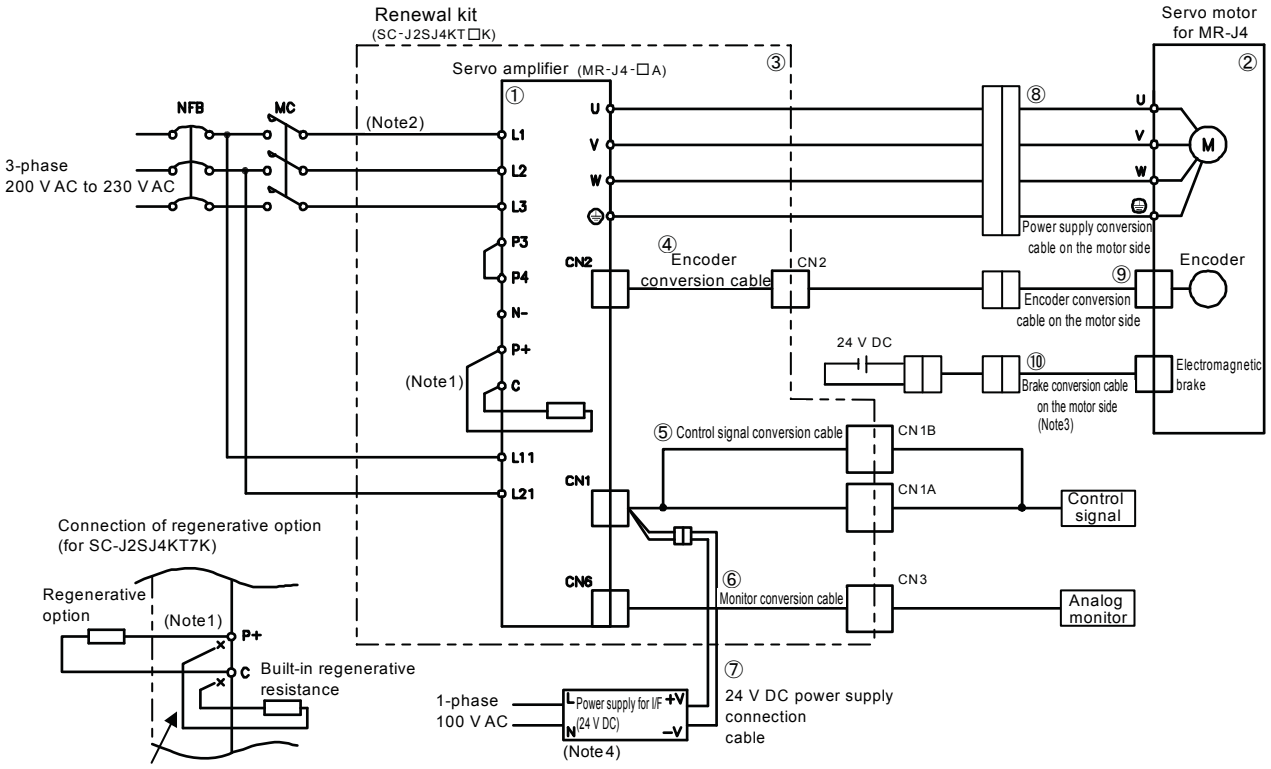
*1: Manufactured by Mitsubishi Electric.

Note 1. When using the regenerative option, make sure to remove the wiring for the regenerative resistor built in to the servo amplifier, and mount the regenerative option between P+ and C. Ensure the connection destinations are correct. The servo amplifier may malfunction if the connection destinations are incorrect.
For details, refer to MR-J4-_A Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

2. There is no conversion terminal block in the SC-J2SJ4KT7K renewal kit. Directly connect to the MR-J4 servo amplifier.
For details, refer to MR-J4-_A Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

3. Required only when the internal power supply (24 V DC) for the I/F is used in the existing MR-J2S-_A_ servo amplifier. Not included with the renewal tool. Note that a separate 24 V DC power supply (current capacity: 80 mA or more) is required when replacing.
When connecting the 24 V DC power supply, use the "24 V DC power supply connection cable (model: SC-J2SJ4CTPWC5M)" included in the package.
(Electric wire colors: Red (+ side); white (- side))

(2) Secondary replacement (when replacing the servo motor after replacing the servo amplifier)
/Package replacement (when replacing the servo amplifier and the servo motor simultaneously)



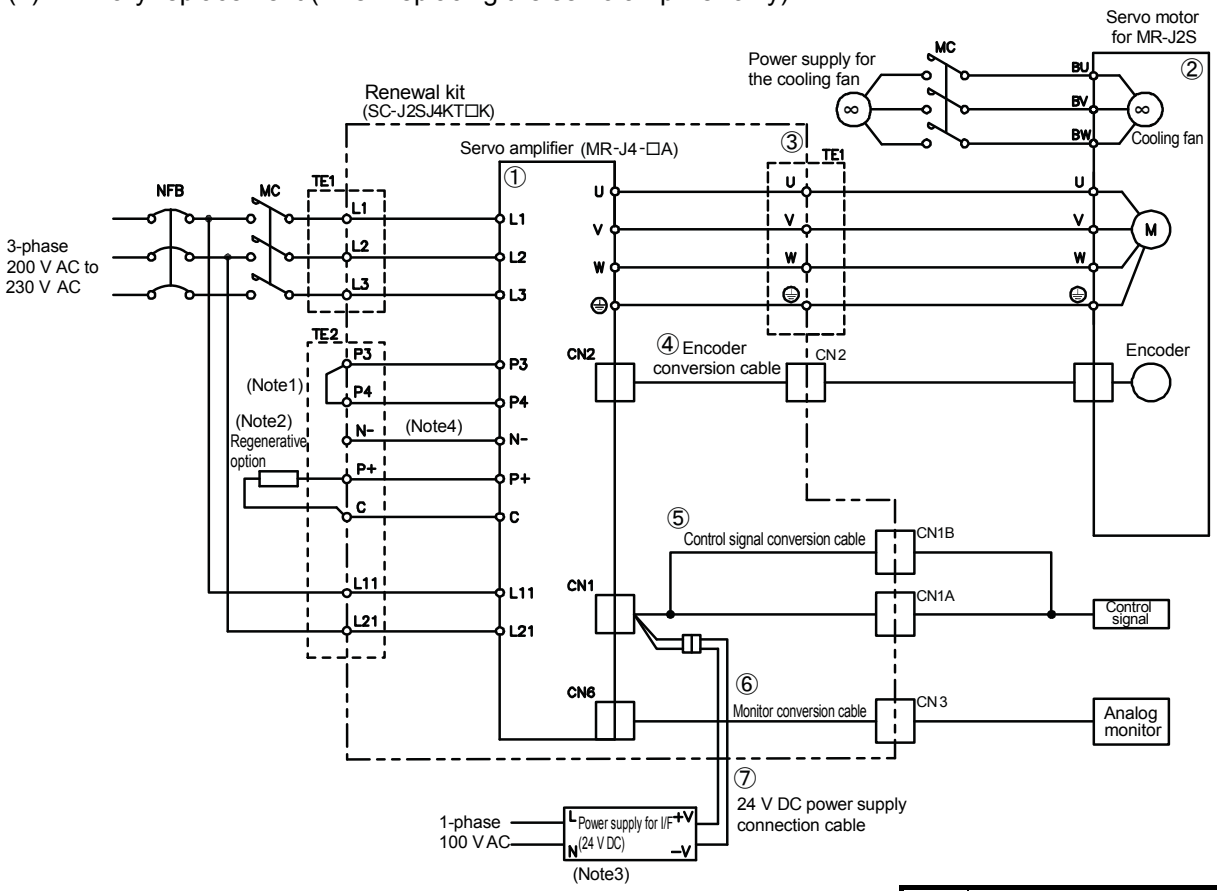
No.	Product name	
(1)	Servo amplifier	*1,2
(2)	Servo motor	*1
(3)	Renewal kit	
(4)	Encoder conversion cable	*2
(5)	Control signal conversion cable	*2
(6)	Monitor conversion cable	*2
(7)	24 V DC power supply connection cable	*2
(8)	Power supply conversion cable on the motor side	
(9)	Encoder conversion cable on the motor side	
(10)	Brake conversion cable on the motor side	

*1: Manufactured by Mitsubishi Electric.
*2: For secondary replacement, replacement finished through the primary replacement

Note 1. When using the regenerative option, make sure to remove the wiring for the regenerative resistor built in to the servo amplifier, and mount the regenerative option between P+ and C. Ensure the connection destinations are correct. The servo amplifier may malfunction if the connection destinations are incorrect.
For details, refer to MR-J4-_A Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.
2. There is no conversion terminal block in the SC-J2SJ4KT7K renewal kit. Directly connect to the MR-J4 servo amplifier.
For details, refer to MR-J4-_A Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.
3. Unnecessary if electromagnetic brakes are not installed.
4. Required only when the internal power supply (24 V DC) for the I/F is used in the existing MR-J2S-_A_ servo amplifier. Not included with the renewal tool. Note that a separate 24 V DC power supply (current capacity: 80 mA or more) is required when replacing.
When connecting the 24 V DC power supply, use the "24 V DC power supply connection cable (model: SC-J2SJ4CTPWC5M)" included in the package.
(Electric wire colors: Red (+ side); white (- side))

2．5．4　SC-J2SJ4KT15K、22K

(1) Primary replacement (when replacing the servo amplifier only)



No.	Product name	
(1)	Servo amplifier	*1
(2)	Servo motor	*1
(3)	Renewal kit	
(4)	Encoder conversion cable	
(5)	Control signal conversion cable	
(6)	Monitor conversion cable	
(7)	24 V DC power supply connection cable	

*1: Manufactured by Mitsubishi Electric.

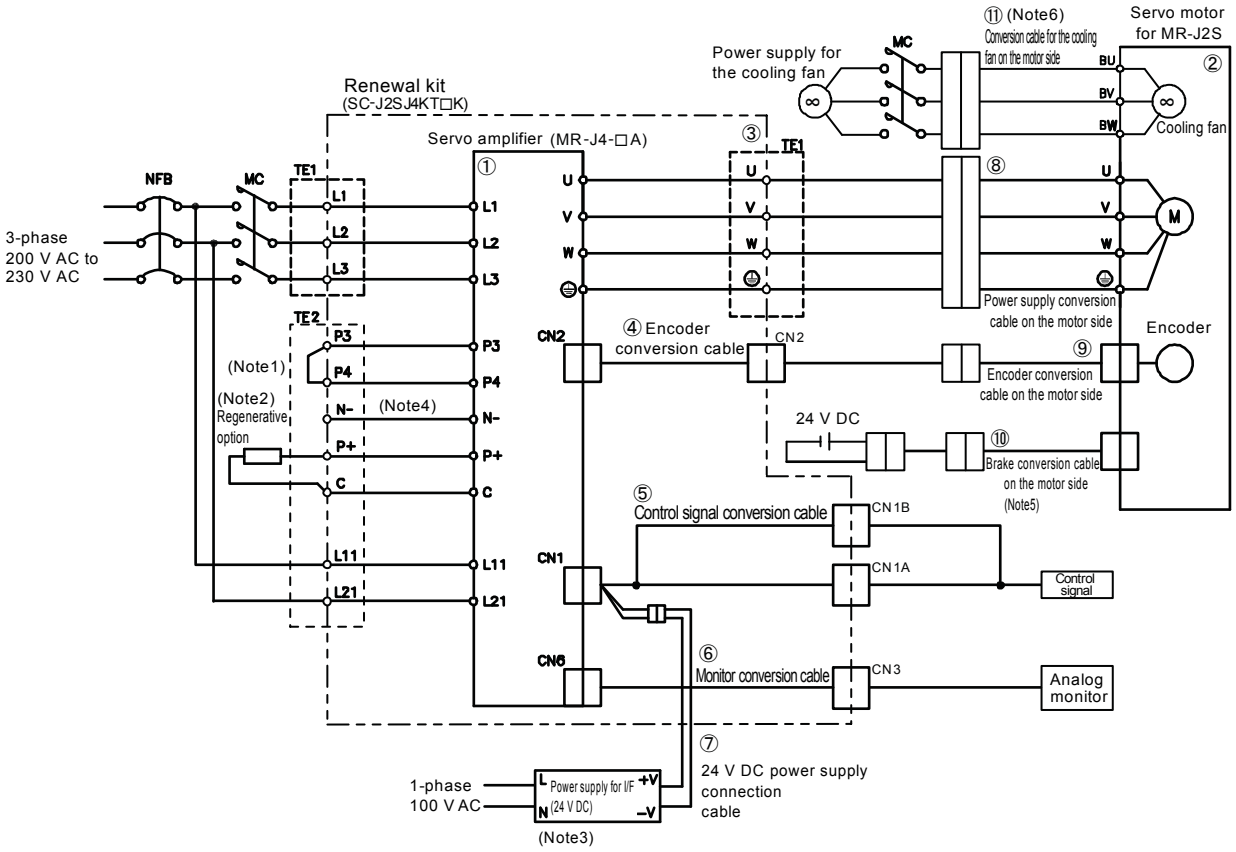
Note 1. Make sure to connect between P3 and P4. When using the power factor improving DC reactor, remove the short circuit bar between P3 and P4 before connection.
For details, refer to MR-J4-_A Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

2. When using the regenerative option, make sure to mount the regenerative option between P+ and C. Ensure the connection destinations are correct. The servo amplifier may malfunction if the connection destinations are incorrect.
For details, refer to MR-J4-_A Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

3. Required only when the internal power supply (24 V DC) for the I/F is used in the existing MR-J2S-_A_ servo amplifier. Not included with the renewal tool. Note that a separate 24 V DC power supply (current capacity: 80 mA or more) is required when replacing.
When connecting the 24 V DC power supply, use the "24 V DC power supply connection cable (model: SC-J2SJ4CTPWC5M)" included in the package.
(Electric wire colors: Red (+ side); white (- side))

4. When connecting a power regenerative converter (FR-RC-_K) and a brake unit (FR-BU2-_K), connect between P+ and N-. Make sure to remove the built-in regenerative resistor or the regenerative option.
For details, refer to MR-J4-_A Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

(2) Secondary replacement (when replacing the servo motor after replacing the servo amplifier)
/Package replacement (when replacing the servo amplifier and the servo motor simultaneously)



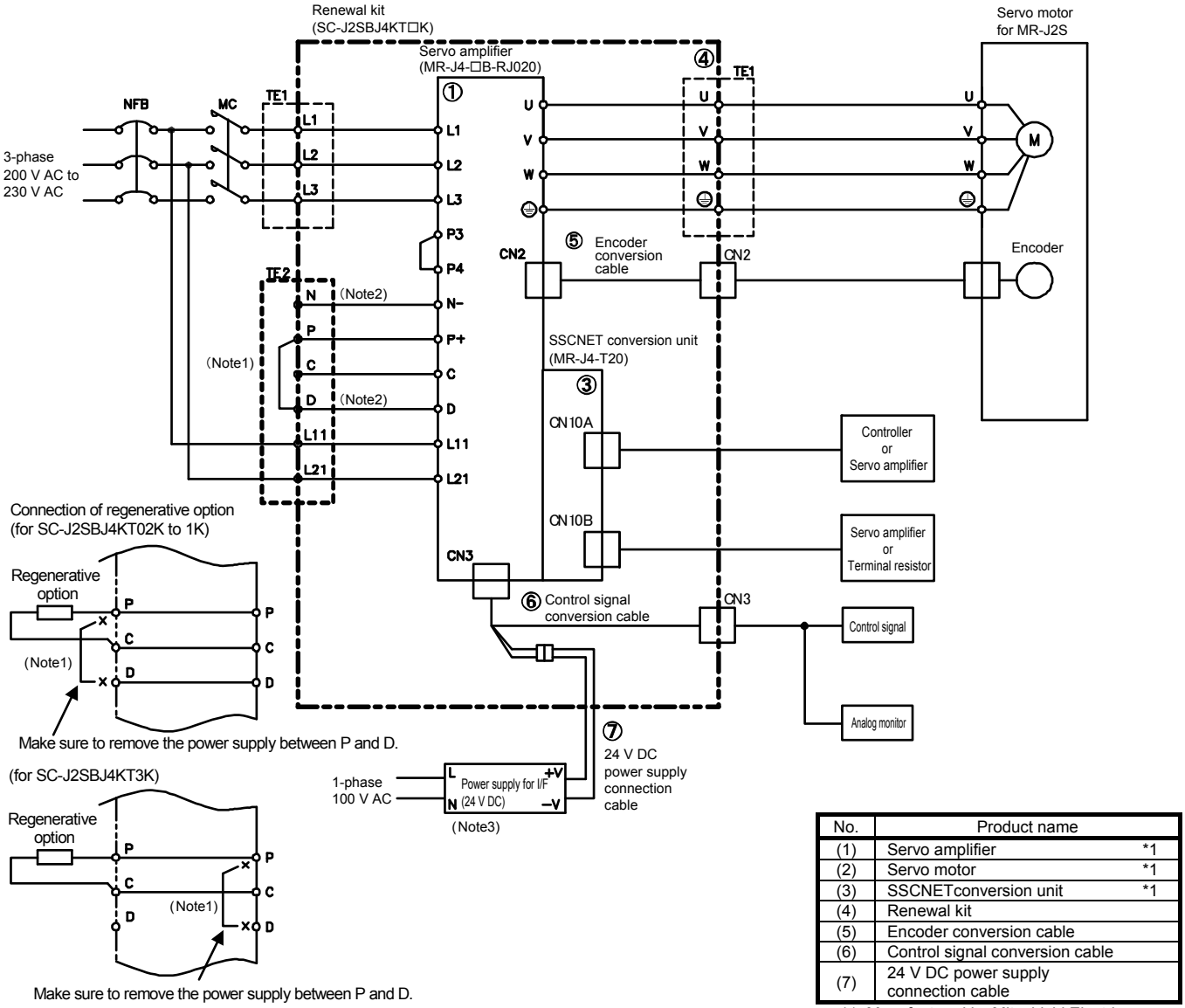
No.	Product name	
(1)	Servo amplifier	*1,2
(2)	Servo motor	*1
(3)	Renewal kit	
(4)	Encoder conversion cable	*2
(5)	Control signal conversion cable	*2
(6)	Monitor conversion cable	*2
(7)	24 V DC power supply connection cable	*2
(8)	Power supply conversion cable on the motor side	
(9)	Encoder conversion cable on the motor side	
(10)	Brake conversion cable on the motor side	
(11)	Conversion cable for the cooling fan on the motor side	

*1: Manufactured by Mitsubishi Electric.
*2: For secondary replacement, replacement finished through primary replacement

Note
1. Make sure to connect between P3 and P4. When using the power factor improving DC reactor, remove the short circuit bar between P3 and P4 before connection.
   For details, refer to MR-J4-_A Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.
2. When using the regenerative option, make sure to mount the regeneration option between P+ and C. Ensure the connection destinations are correct. The servo amplifier may malfunction if the connection destinations are incorrect.
   For details, refer to MR-J4-_A Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.
3. Required only when the internal power supply (24 V DC) for the I/F is used in the existing MR-J2S-_A_ servo amplifier. Not included with the renewal tool. Note that a separate 24 V DC power supply (current capacity: 80 mA or more) is required when replacing.
   When connecting the 24 V DC power supply, use the "24 V DC power supply connection cable (model: SC-J2SJ4CTPWC5M)" included in the package.
   (Electric wire colors: Red (+ side); white (- side))
4. When connecting a power regenerative converter (FR-RC-_K) and a brake unit (FR-BU2-_K), connect between P+ and N-. Make sure to remove the built-in regenerative resistor or the regenerative option.
   For details, refer to MR-J4-_A Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.
5. Unnecessary if electromagnetic brakes are not installed.
6. Required for the HG-JR22K1M motor only. There is no cooling fan for the HG-JR11K1M or HG-JR15K1M motors. Because the existing wiring becomes unnecessary, insulate as needed.

2．5．5　SC-J2SBJ4KT02K～3K

(1) Primary replacement (when replacing the servo amplifier only)



No.	Product name	
(1)	Servo amplifier	*1
(2)	Servo motor	*1
(3)	SSCNETconversion unit	*1
(4)	Renewal kit	
(5)	Encoder conversion cable	
(6)	Control signal conversion cable	
(7)	24 V DC power supply connection cable	

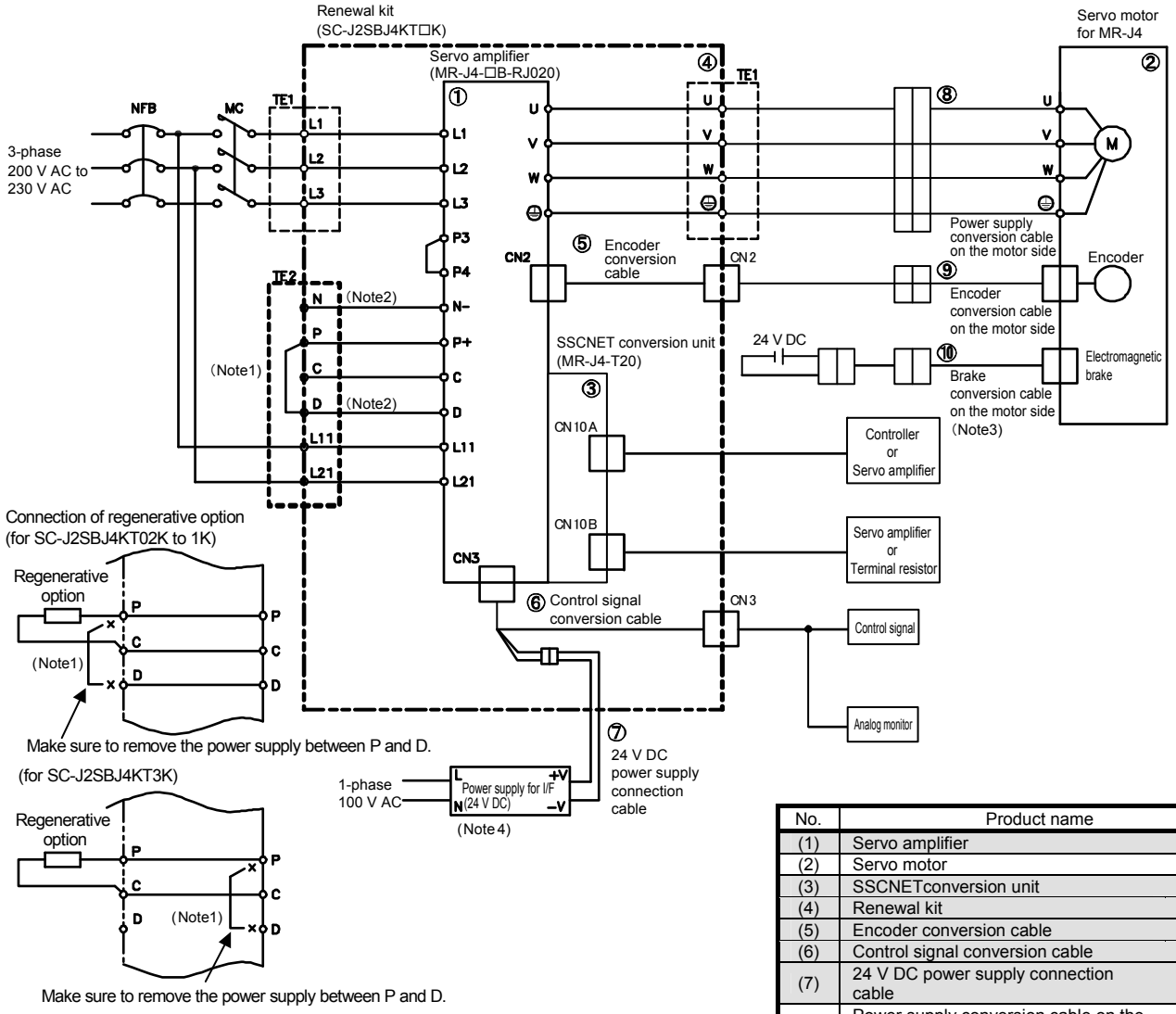
*1: Manufactured by Mitsubishi Electric.

Note 1. When using the regenerative option, make sure to remove the wiring between P and D, connect with the wiring between the renewal kit and the servo amplifier, and mount the regenerative option between P and C. Ensure the connection destinations are correct. The servo amplifier may malfunction if the connection destinations are incorrect.
For details, refer to MR-J4-_B-RJ020 Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

2. The N terminal of TE2 is limited to SC-J2SBJ4KT1K and 3K. There is no D terminal wiring for SC-J2SBJ4KT3K.

3. Required only when the internal power supply (24 V DC) for the I/F is used in the existing MR-J2S-_B_ servo amplifier. Not included with the renewal tool. Note that a separate 24 V DC power supply (current capacity: 80 mA or more) is required when replacing.
When connecting the 24 V DC power supply, use the "24 V DC power supply connection cable (model: SC-J2SJ4CTPWC5M)" included in the package.
(Electric wire colors: Red (+ side); white (- side))

(2) Secondary replacement (when replacing the servo motor after replacing the servo amplifier)
/Package replacement (when replacing the servo amplifier and the servo motor simultaneously)



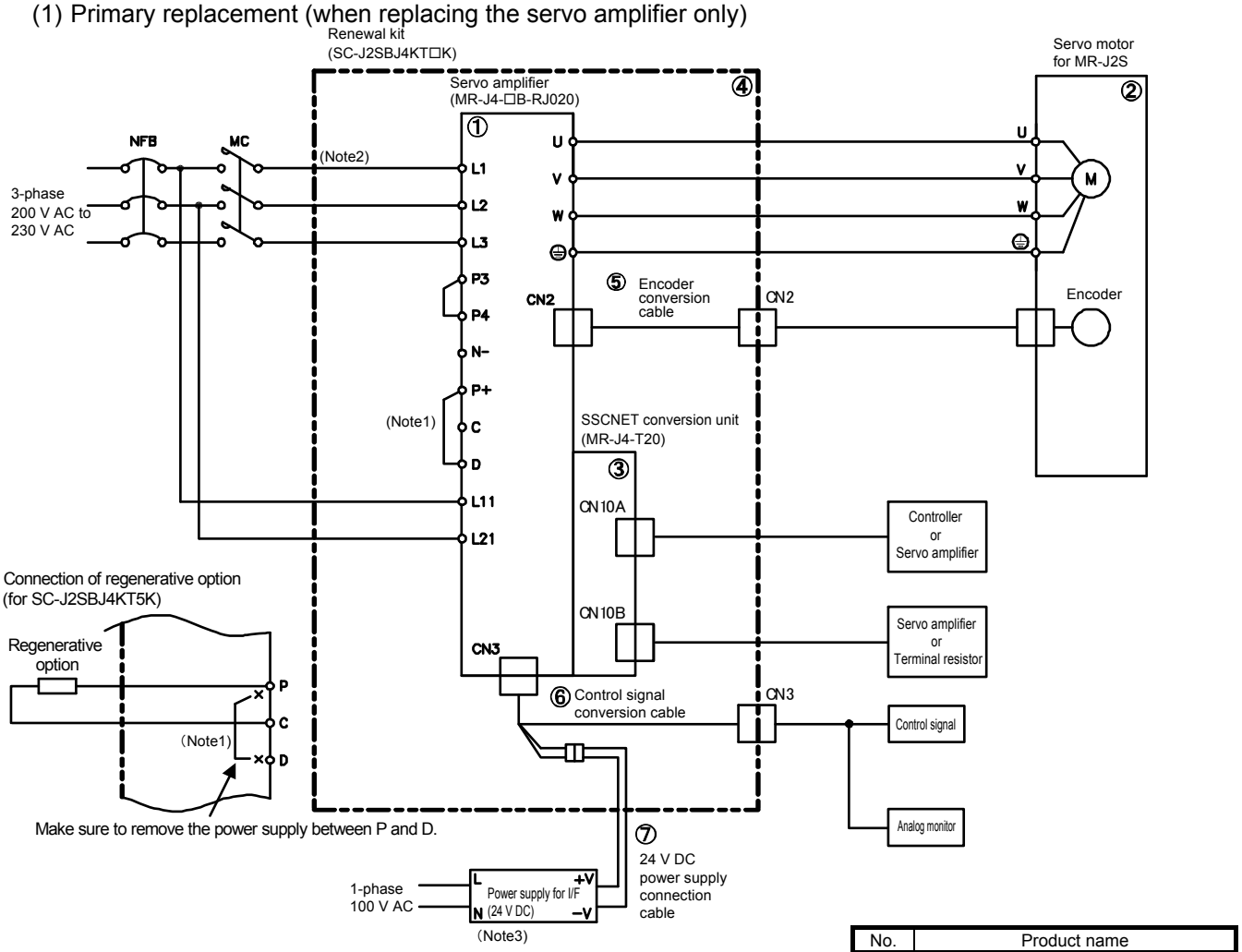
No.	Product name	
(1)	Servo amplifier	*1,2
(2)	Servo motor	*1
(3)	SSCNETconversion unit	*1,2
(4)	Renewal kit	*2
(5)	Encoder conversion cable	*2
(6)	Control signal conversion cable	*2
(7)	24 V DC power supply connection cable	*2
(8)	Power supply conversion cable on the motor side	
(9)	Encoder conversion cable on the motor side	
(10)	Brake conversion cable on the motor side	

*1: Manufactured by Mitsubishi Electric.
*2: For secondary replacement, replacement finished through primary replacement

Note 1. When using the regenerative option, make sure to remove the wiring between P and D, connect with the wiring between the renewal kit and the servo amplifier, and mount the regenerative option between P and C. Ensure the connection destinations are correct. The servo amplifier may malfunction if the connection destinations are incorrect.
For details, refer to MR-J4-_B-RJ020 Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.
2. The N terminal of TE2 is limited to SC-J2SBJ4KT1K and 3K. There is no D terminal wiring for SC-J2SBJ4KT3K.
3. Unnecessary if electromagnetic brakes are not installed.
4. Required only when the internal power supply (24 V DC) for the I/F is used in the existing MR-J2S-_B_ servo amplifier. Not included with the renewal tool. Note that a separate 24 V DC power supply (current capacity: 80 mA or more) is required when replacing.
When connecting the 24 V DC power supply, use the "24 V DC power supply connection cable (model: SC-J2SJ4CTPWC5M)" included in the package.
(Electric wire colors: Red (+ side); white (- side))

2．5．6　SC-J2SBJ4KT5K

(1) Primary replacement (when replacing the servo amplifier only)



No.	Product name	
(1)	Servo amplifier	*1
(2)	Servo motor	*1
(3)	SSCNETconversion unit	*1
(4)	Renewal kit	
(5)	Encoder conversion cable	
(6)	Control signal conversion cable	
(7)	24 V DC power supply connection cable	

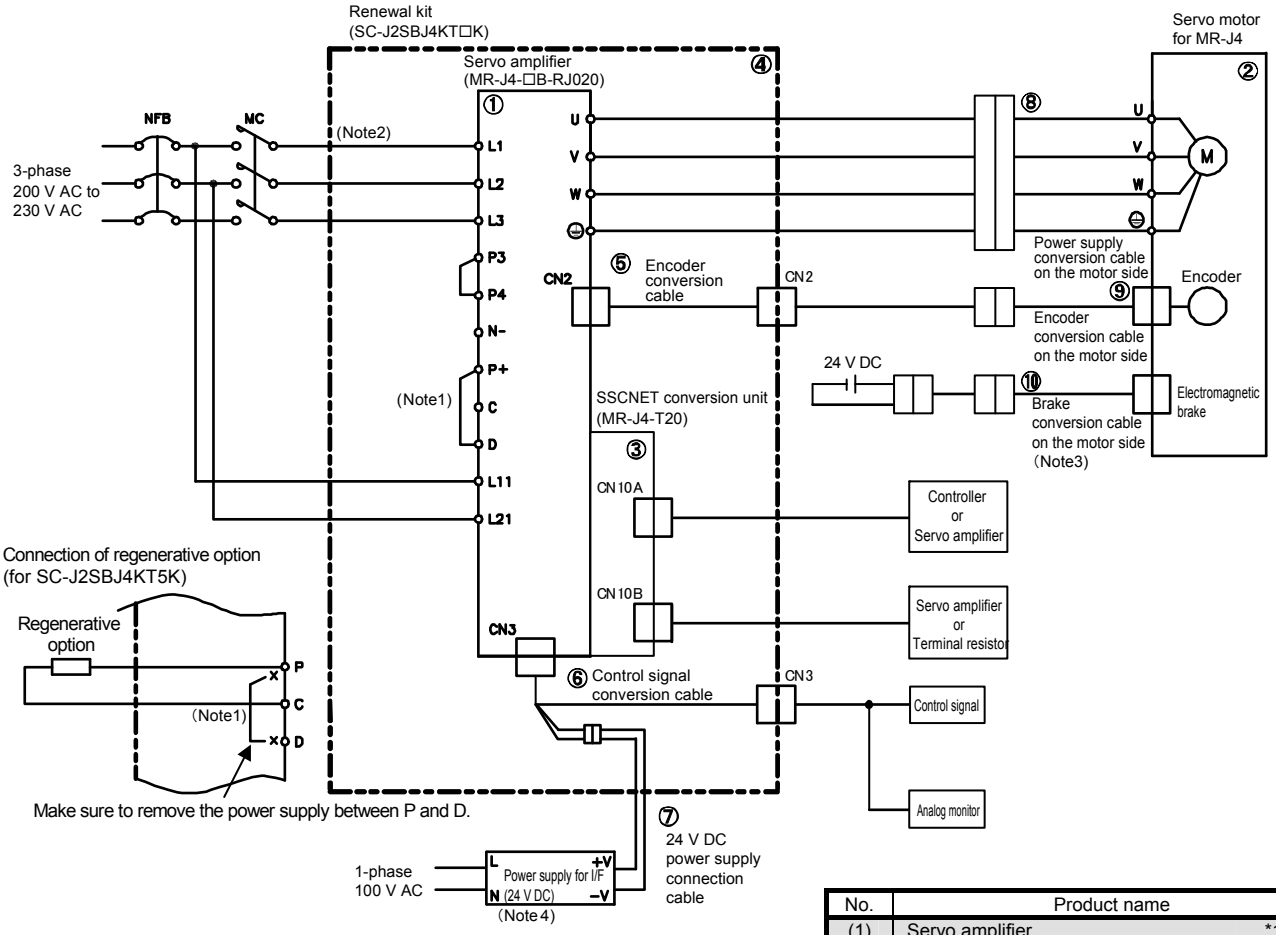
*1: Manufactured by Mitsubishi Electric.

Note 1. When using the regenerative option, make sure to remove the wiring between P+ and D, connect with the wiring between the renewal kit and the servo amplifier, and mount the regenerative option between P+ and C. Ensure the connection destinations are correct. The servo amplifier may malfunction if the connection destinations are incorrect.
For details, refer to MR-J4-_B-RJ020 Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

2. There is no conversion terminal block in the SC-J2SBJ4KT5K renewal kit. Directly connect to the MR-J4 servo amplifier.
For details, refer to MR-J4-_B-RJ020 Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

3. Required only when the internal power supply (24 V DC) for the I/F is used in the existing MR-J2S-_B_ servo amplifier. Not included with the renewal tool. Note that a separate 24 V DC power supply (current capacity: 80mA and over) is required when replacing.
When connecting the 24 V DC power supply, use the "24 V DC power supply connection cable (model: SC-J2SJ4CTPWC5M)" included in the package.
(Electric wire colors: Red (+ side); white (- side))

(2) Secondary replacement (when replacing the servo motor after replacing the servo amplifier)
/Package replacement (when replacing the servo amplifier and the servo motor simultaneously)



No.	Product name	
(1)	Servo amplifier	*1,2
(2)	Servo motor	*1
(3)	SSCNETconversion unit	*1
(4)	Renewal kit	*2
(5)	Encoder conversion cable	*2
(6)	Control signal conversion cable	*2
(7)	24 V DC power supply connection cable	*2
(8)	Power supply conversion cable on the motor side	
(9)	Encoder conversion cable on the motor side	
(10)	Brake conversion cable on the motor side	

*1: Manufactured by Mitsubishi Electric.
*2: For secondary replacement, replacement finished through primary replacement

Note 1. When using the regenerative option, make sure to remove the wiring between P+ and D, connect with the wiring between the renewal kit and the servo amplifier, and mount the regenerative option between P+ and C. Ensure the connection destinations are correct. The servo amplifier may malfunction if the connection destinations are incorrect.
For details, refer to MR-J4-_B-RJ020 Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

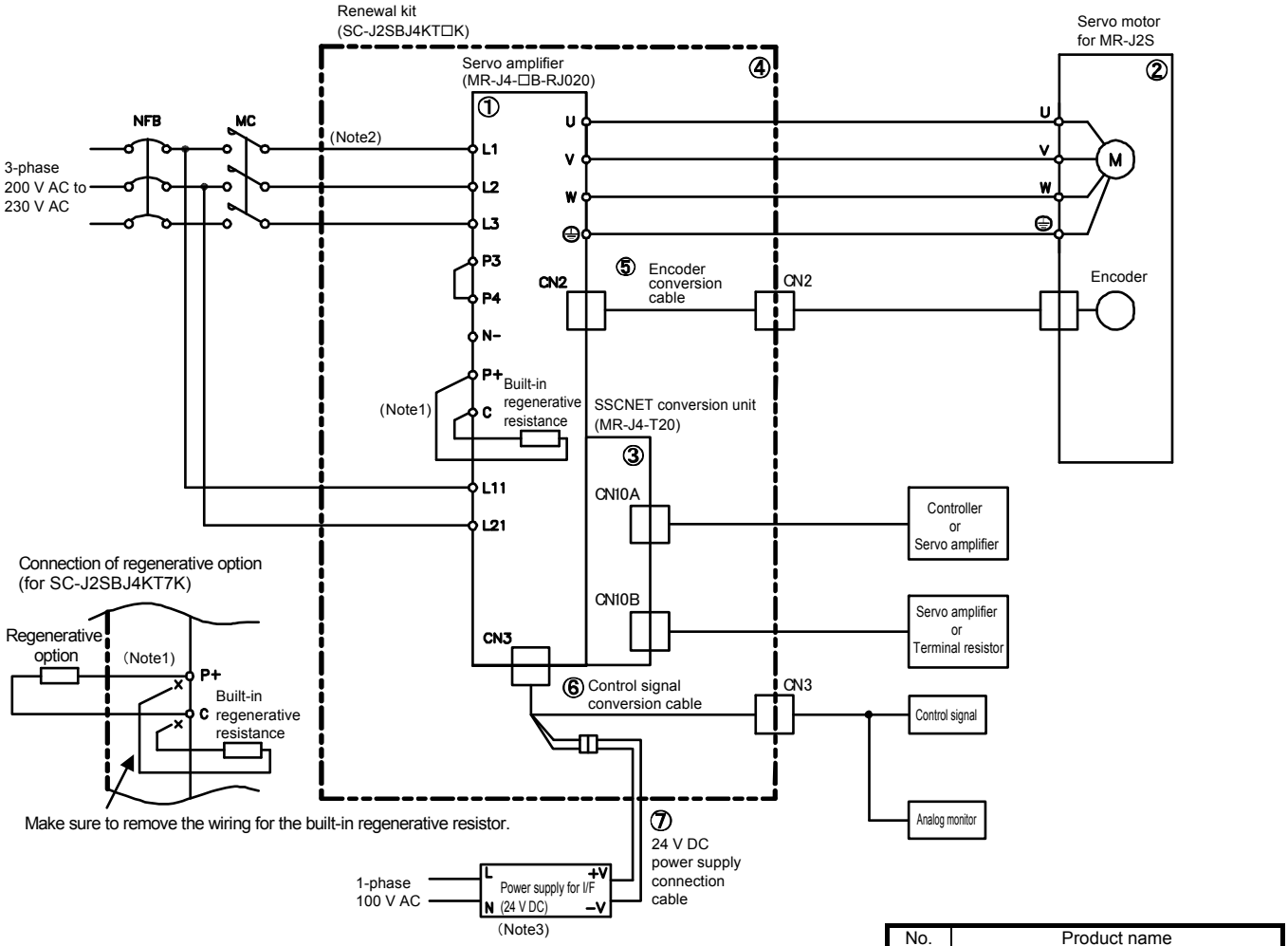
2. There is no conversion terminal block in the SC-J2SBJ4KT5K renewal kit. Directly connect to the MR-J4 servo amplifier.
For details, refer to MR-J4-_B-RJ020 Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

3. Unnecessary if electromagnetic brakes are not installed.

4. Required only when the internal power supply (24 V DC) for the I/F is used in the existing MR-J2S-_B_ servo amplifier.
Not included with the renewal tool. Note that a separate 24 V DC power supply (current capacity: 80 mA or more) is required when replacing.
When connecting the 24 V DC power supply, use the "24 V DC power supply connection cable (model: SC-J2SJ4CTPWC5M)" included in the package.
(Electric wire colors: Red (+ side); white (- side))

2．5．7　SC-J2SBJ4KT7K

(1) Primary replacement (when replacing the servo amplifier only)



No.	Product name	
(1)	Servo amplifier	*1
(2)	Servo motor	*1
(3)	SSCNETconversion unit	*1
(4)	Renewal kit	
(5)	Encoder conversion cable	
(6)	Control signal conversion cable	
(7)	24 V DC power supply connection cable	

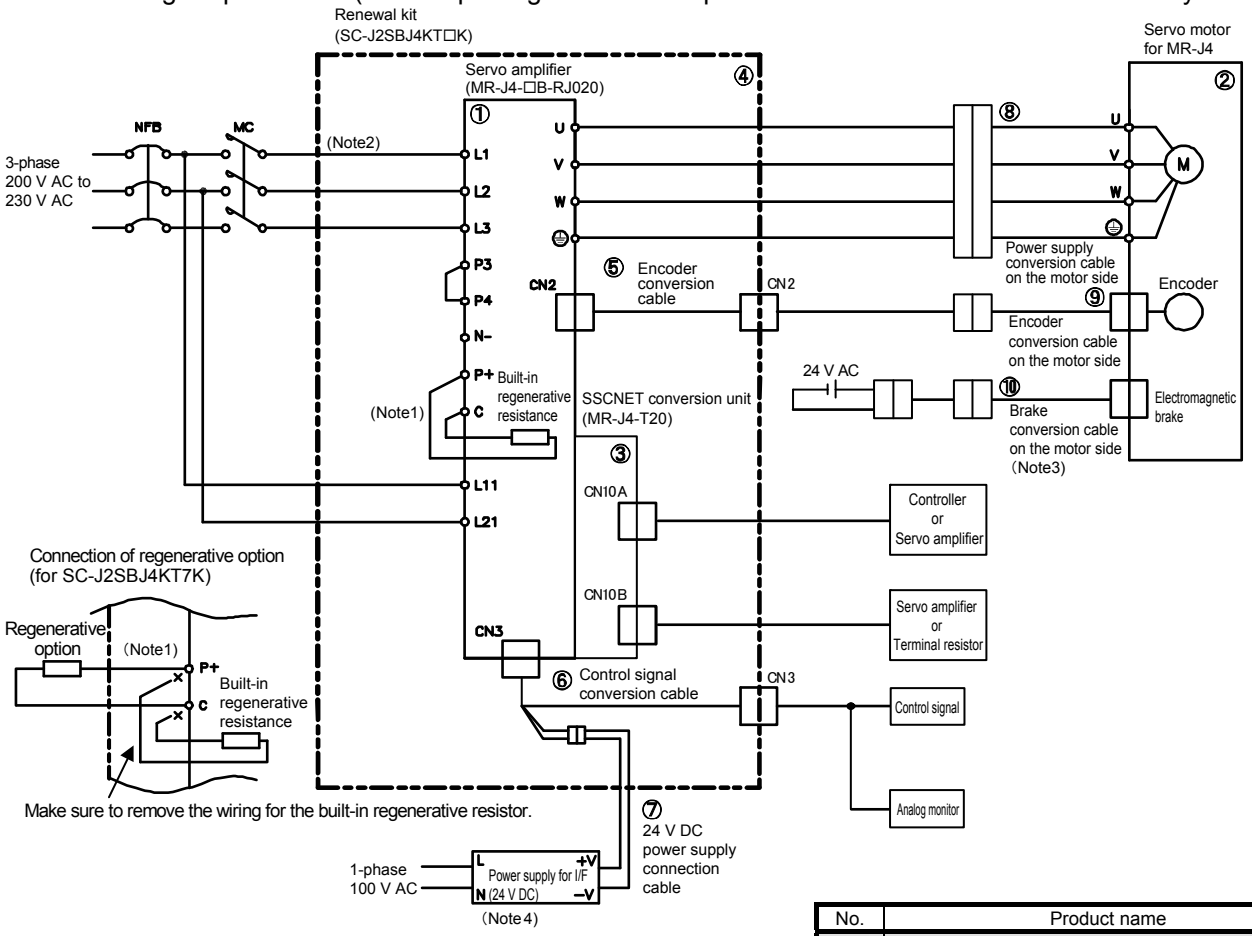
*1: Manufactured by Mitsubishi Electric.

Note 1. When using the regenerative option, make sure to remove the wiring for the regenerative resistor built in to the servo amplifier, and mount the regenerative option between P+ and C. Ensure the connection destinations are correct. The servo amplifier may malfunction if the connection destinations are incorrect.
For details, refer to MR-J4-_B-RJ020 Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

2. There is no conversion terminal block in the SC-J2SBJ4KT7K renewal kit. Directly connect to the MR-J4 servo amplifier.
For details, refer to MR-J4-_B-RJ020 Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

3. Required only when the internal power supply (24 V DC) for the I/F is used in the existing MR-J2S-_B_ servo amplifier.
Not included with the renewal tool. Note that a separate 24 V DC power supply (current capacity: 80 mA or more) is required when replacing.
When connecting the 24 V DC power supply, use the "24 V DC power supply connection cable (model: SC-J2SJ4CTPWC5M)" included in the package.
(Electric wire colors: Red (+ side); white (- side))

(2) Secondary replacement (when replacing the servo motor after replacing the servo amplifier)
/Package replacement (when replacing the servo amplifier and the servo motor simultaneously



No.	Product name	
(1)	Servo amplifier	*1,2
(2)	Servo motor	*1
(3)	SSCNETconversion unit	*1,2
(4)	Renewal kit	*2
(5)	Encoder conversion cable	*2
(6)	Control signal conversion cable	*2
(7)	24 V DC power supply connection cable	*2
(8)	Power supply conversion cable on the motor side	
(9)	Encoder conversion cable on the motor side	
(10)	Brake conversion cable on the motor side	

*1: Manufactured by Mitsubishi Electric.
*2: For secondary replacement, replacement finished through primary replacement

Note 1. When using the regenerative option, make sure to remove the wiring for the regenerative resistor built in to the servo amplifier, and mount the regenerative option between P+ and C. Ensure the connection destinations are correct. The servo amplifier may malfunction if the connection destinations are incorrect.
For details, refer to MR-J4-_B-RJ020 Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

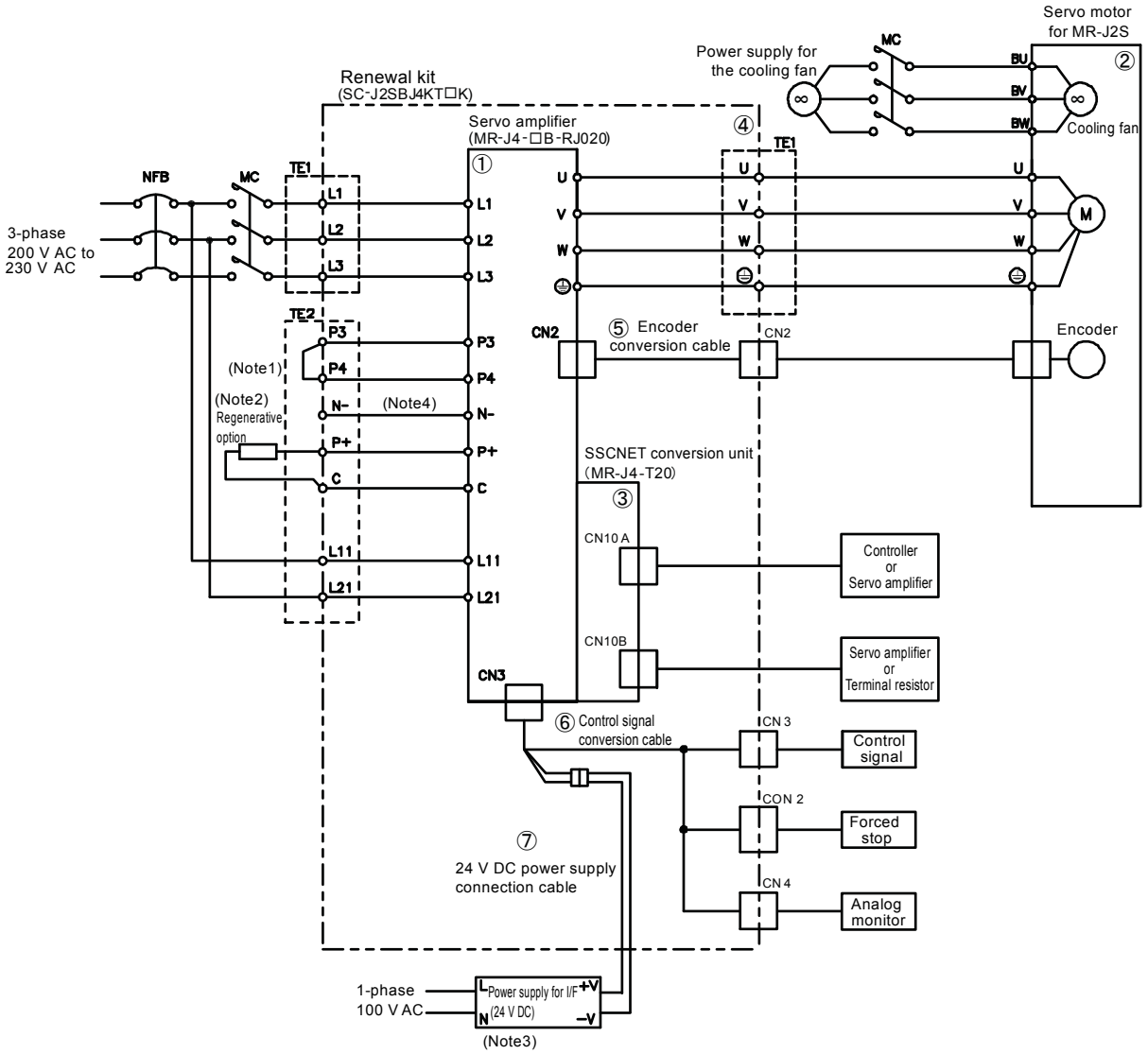
2. There is no conversion terminal block in the SC-J2SBJ4KT7K renewal kit. Directly connect to the MR-J4 servo amplifier.
For details, refer to MR-J4-_B-RJ020 Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

3. Unnecessary if electromagnetic brakes are not installed.

4. Required only when the internal power supply (24 V DC) for the I/F is used in the existing MR-J2S-_B_ servo amplifier.
Not included with the renewal tool. Note that a separate 24 V DC power supply (current capacity: 80 mA or more) is required when replacing.
When connecting the 24 V DC power supply, use the "24 V DC power supply connection cable (model: SC-J2SJ4CTPWC5M)" included in the package.
(Electric wire colors: Red (+ side); white (- side))

2.5.8 SC-J2SBJ4KT15K、22K

(1) Primary replacement (when replacing the servo amplifier only)



No.	Product name	
(1)	Servo amplifier	*1
(2)	Servo motor	*1
(3)	SSCNETconversion unit	*1
(4)	Renewal kit	
(5)	Encoder conversion cable	
(6)	Control signal conversion cable	
(7)	24 V DC power supply connection cable	

*1: Manufactured by Mitsubishi Electric.

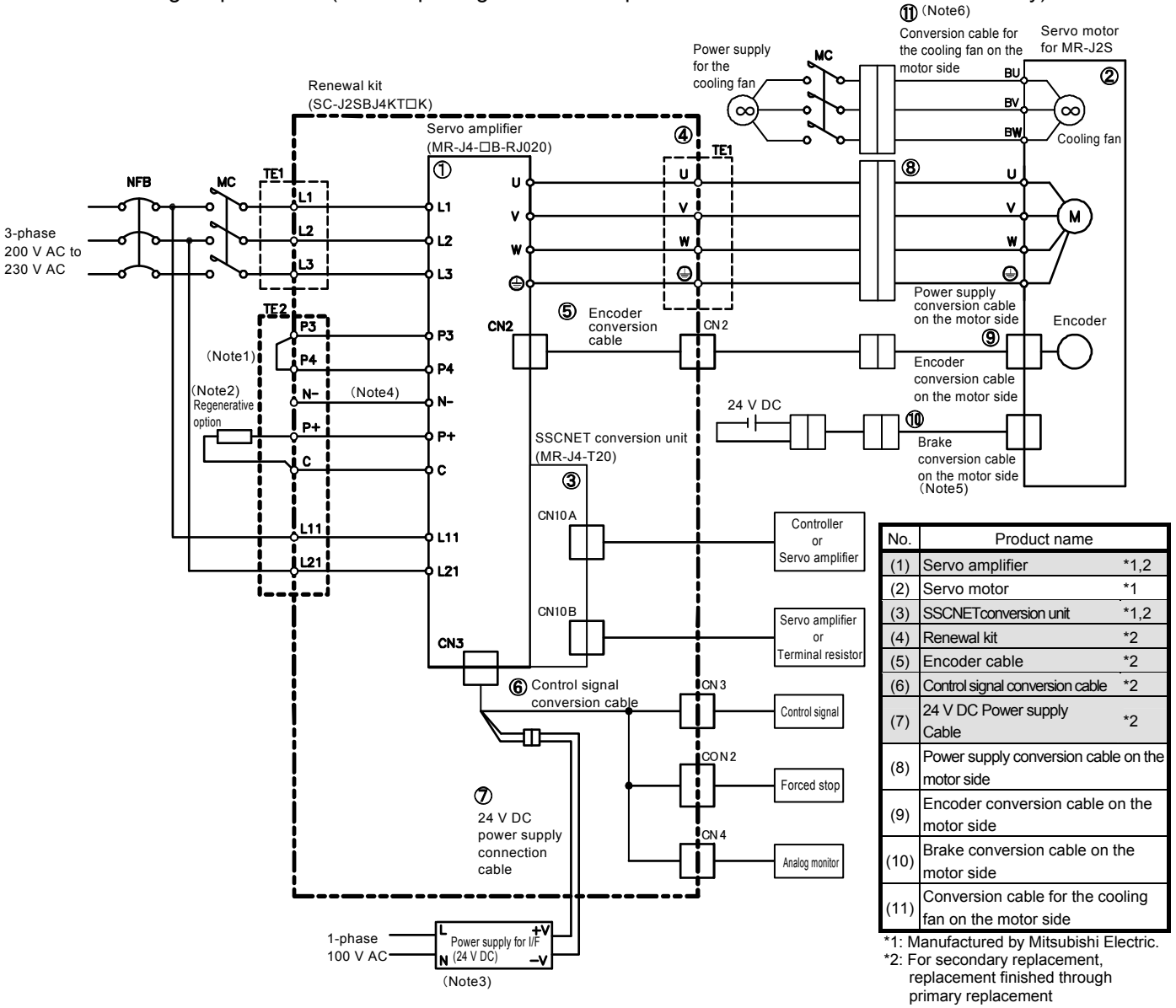
Note 1. Make sure to connect between P3 and P4. When using the power factor improving DC reactor, remove the short circuit bar between P3 and P4 before connection.
For details, refer to MR-J4-_B-RJ020 Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

2. When using the regenerative option, make sure to mount the regenerative option between P+ and C. Ensure the connection destinations are correct. The servo amplifier may malfunction if the connection destinations are incorrect.
For details, refer to MR-J4-_B-RJ020 Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

3. Required only when the internal power supply (24 V DC) for the I/F is used in the existing MR-J2S-_B_ servo amplifier. Not included with the renewal tool. Note that a separate 24 V DC power supply (current capacity: 80 mA or more) is required when replacing.
When connecting the 24 V DC power supply, use the "24 V DC power supply connection cable (model: SC-J2SJ4CTPWC5M)" included in the package.
(Electric wire colors: Red (+ side); white (- side))

4. When connecting a power regenerative converter (FR-RC-_K) and a brake unit (FR-BU2-_K), connect between P+ and N-. Make sure to remove the built-in regenerative resistor or the regenerative option.
For details, refer to MR-J4-_B-RJ020 Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

(2) Secondary replacement (when replacing the servo motor after replacing the servo amplifier)
/Package replacement (when replacing the servo amplifier and the servo motor simultaneously)



No.	Product name	
(1)	Servo amplifier	*1,2
(2)	Servo motor	*1
(3)	SSCNETconversion unit	*1,2
(4)	Renewal kit	*2
(5)	Encoder cable	*2
(6)	Control signal conversion cable	*2
(7)	24 V DC Power supply Cable	*2
(8)	Power supply conversion cable on the motor side	
(9)	Encoder conversion cable on the motor side	
(10)	Brake conversion cable on the motor side	
(11)	Conversion cable for the cooling fan on the motor side	

*1: Manufactured by Mitsubishi Electric.
*2: For secondary replacement, replacement finished through primary replacement

Note 1. Make sure to connect between P3 and P4. When using the power factor improving DC reactor, remove the short circuit bar between P3 and P4 before connection.
For details, refer to MR-J4-_B-RJ020 Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

2. When using the regenerative option, make sure to mount the regenerative option between P+ and C. Ensure the connection destinations are correct. The servo amplifier may malfunction if the connection destinations are incorrect.
For details, refer to MR-J4-_B-RJ020 Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

3. Required only when the internal power supply (24 V DC) for the I/F is used in the existing MR-J2S-_B_ servo amplifier. Not included with the renewal tool. Note that a separate 24 V DC power supply (current capacity: 80 mA or more) is required when replacing.
When connecting the 24 V DC power supply, use the "24 V DC power supply connection cable (model: SC-J2SJ4CTPWC5M)" included in the package.
(Electric wire colors: Red (+ side); white (- side))

4. When connecting a power regenerative converter (FR-RC-_K) and a brake unit (FR-BU2-_K), connect between P+ and N-. Make sure to remove the built-in regenerative resistor or the regenerative option.
For details, refer to MR-J4-_B-RJ020 Series Servo Amplifier Technical Reference Material issued by Mitsubishi Electric Corporation.

5. Unnecessary if electromagnetic brakes are not installed.

6. Required for the HG-JR22K1M motor only. There is no cooling fan for the HG-JR11K1M or HG-JR15K1M motor. Because the existing wiring becomes unnecessary, insulate as needed.

2．6　Specifications

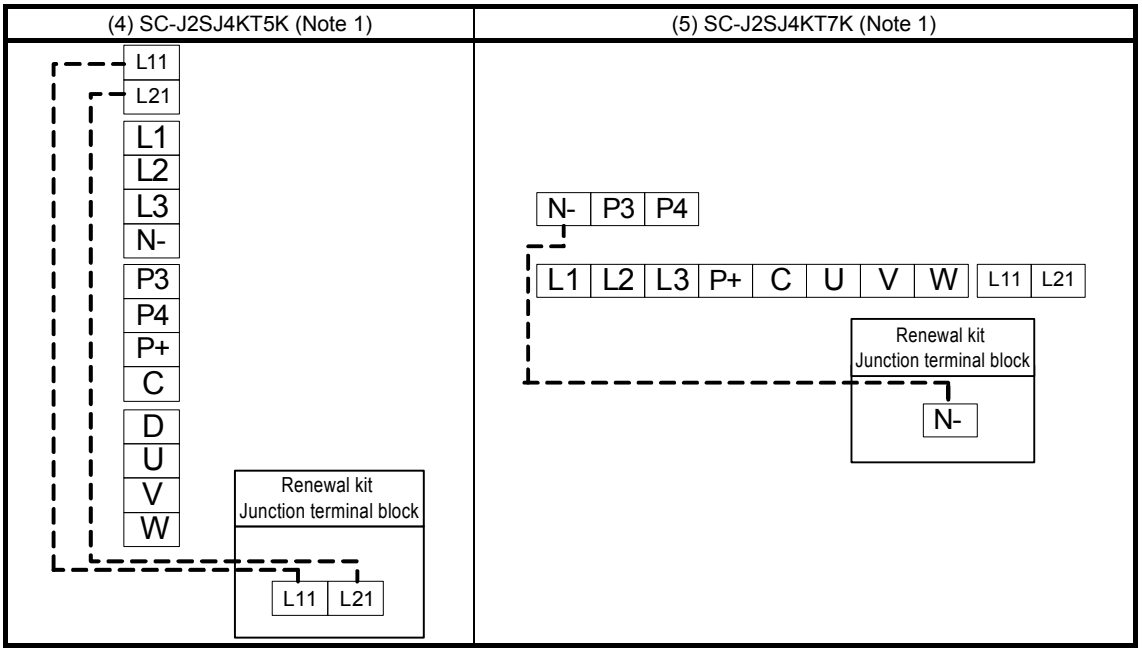
2．6．1　Standard Specifications

(1) Renewal kit specifications

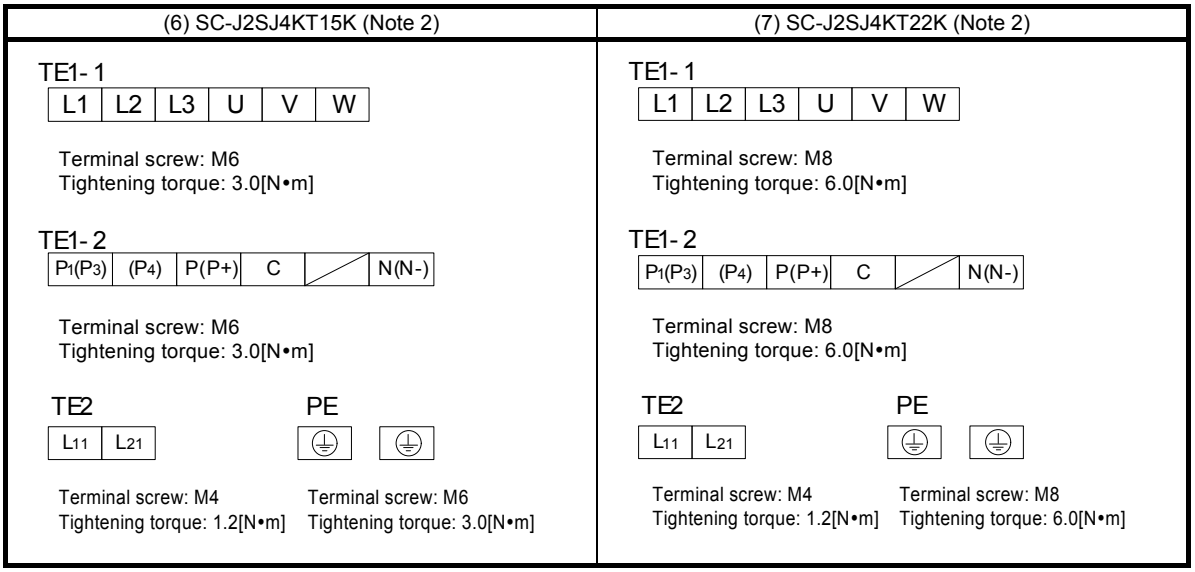
Item			Specifications
Power supply	Voltage/Frequency		3-phase 200 V AC to 240 V AC, 50/60 Hz.
	Permissible voltage fluctuation		3-phase 170 V AC to 264 V AC.
	Permissible frequency fluctuation		Within ±5%.
Environment	Ambient temperature	Operation	0 to +55°C (non-freezing).
		Storage	-20 to +65°C (non-freezing).
	Ambient humidity	Operation	90% RH or less (non-condensing).
		Storage	
	Ambience		Indoors (no direct sunlight) and free from corrosive gas, flammable gas, oil mist, dust, and dirt
	Altitude		1000 m or less above sea level.
	Vibration		5.9 m/s^2 or less, 10 to 55 Hz (Each direction of X, Y, and Z).

2．6．2　Terminal Block Specifications

(1) SC-J2SJ4KT02K, 06K	(2) SC-J2SJ4KT1K	(3) SC-J2SJ4KT3K
TE1 L_1 L_2 L_3 U V W Terminal screw: M4 Tightening torque: 1.2[N•m] TE2 D C P L_{21} L_{11} Plug-in connector type	TE1 L_1 L_2 L_3 U V W Terminal screw: M4 Tightening torque: 1.2[N•m] TE2 D C P L_{21} L_{11} N Plug-in connector type	TE1 L_1 L_2 L_3 U V W Terminal screw: M4 Tightening torque: 1.2[N•m] TE2 L_{11} L_{21} D P C N Terminal screw: M4 Tightening torque: 1.2[N•m]



Note 1. There is no conversion terminal block for the MR-J2S-500_ and MR-J2S-700_ amplifier because the recommended wiring and screw sizes are the same as for the MR-J4 amplifier. Connect the existing wiring, except for the junction terminal block of the renewal kit mentioned above, directly to the J4 amplifier.



Note 2. The renewal kits for the MR-J2S-11k_, MR-J2S-15k_, and MR-J2S-22K_ amplifiers have a different terminal position than the MR-J2S amplifier. See 3.3.7 for the wiring method.

2.6.3 Recommended 24VDC Power Supply Specifications for Interface

These are the recommended specifications for the 24 V DC power supply for the interface necessary for renewal. Select according to the following specifications.

Product name	Specifications
For interface 24 V DC power	24 V DC, ±10%. Current capacity: 80 mA or more.

2．6．4 Servo Amplifier Initialization Time

This section explains the initializing time of the servo amplifier (the time taken between power-on and servo-on reception). The initializing time is 2 s at maximum for the MR-J2S-_A_ servo amplifier, but 3.5 s at maximum for the MR-J4-_A_ servo amplifier. Note the initializing time difference upon replacement.

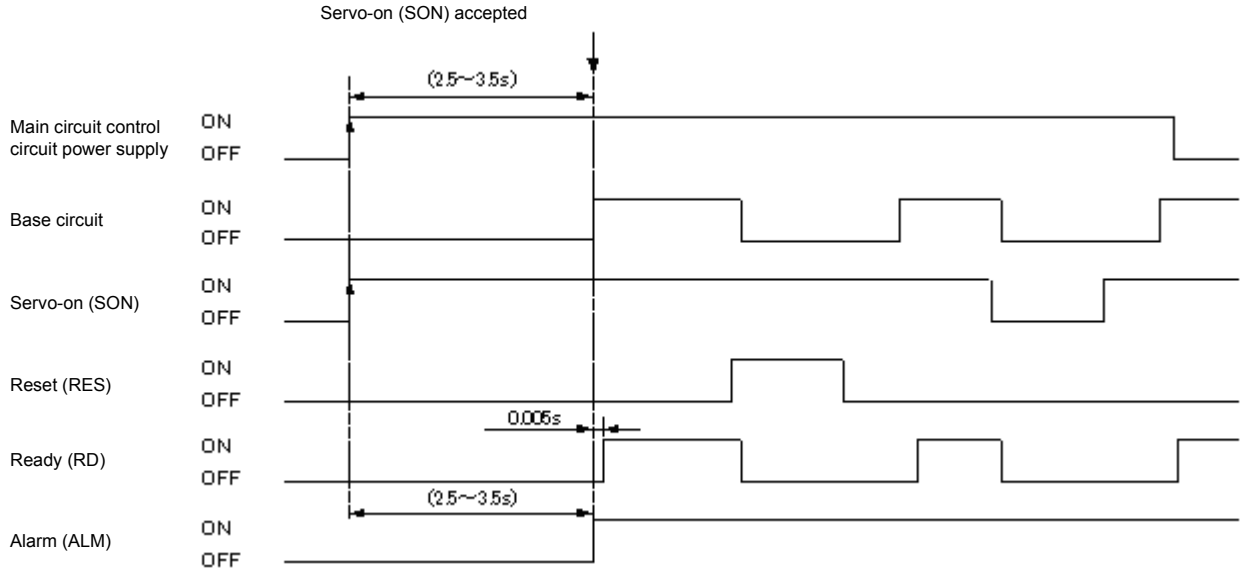
<Points to note upon replacement>

(1) When using the electromagnetic brake to prevent a drop in a vertical lift application or the like with an external timer to adjust the brake release time, the lift may drop due to a longer servo-lock time. Adjust the brake release time as necessary or use MBR (electromagnetic brake interlock signal).

(2) A longer servo-on time at power-on may cause a delay in the motor starting time after power-up. Please take note.

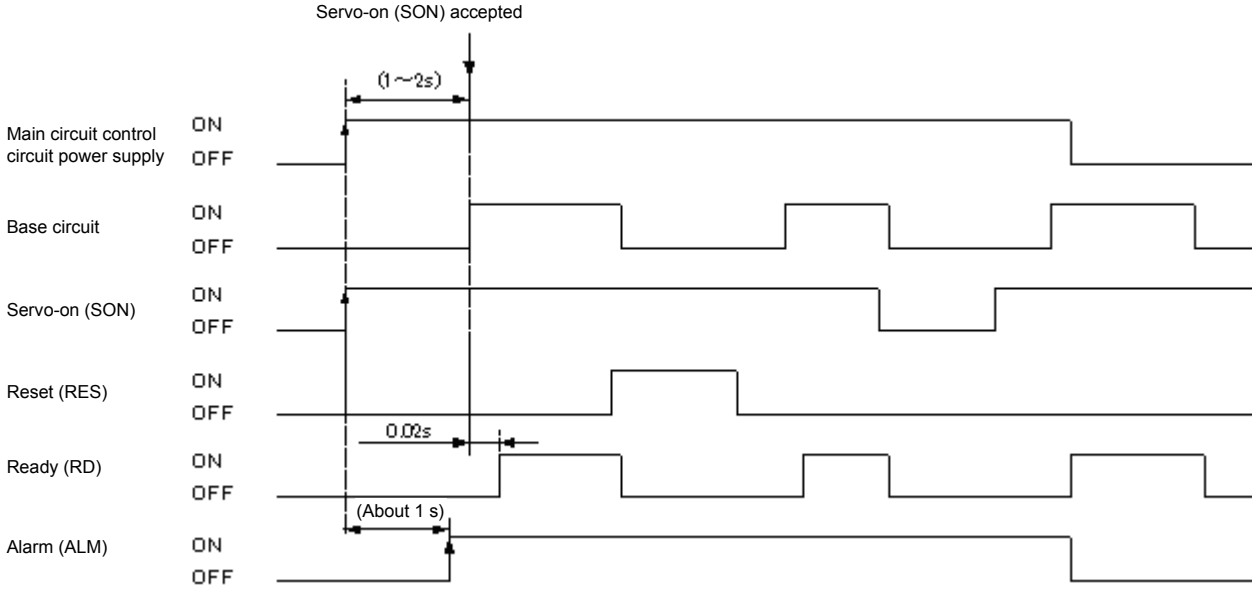
(1) MR-J4-_A_type series servo amplifier

The initializing time is 2.5 to 3.5 s.



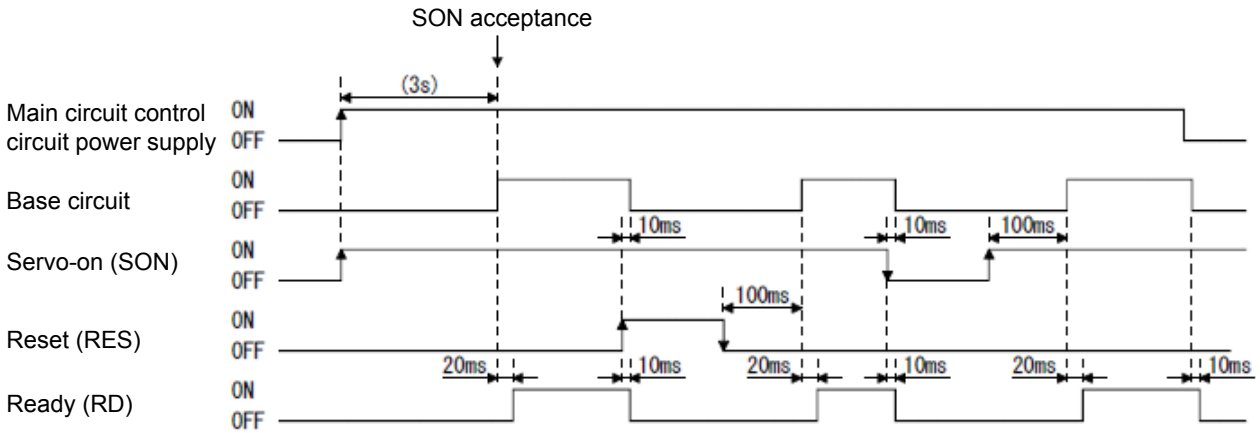
(2) MR-J2S-_A_type series servo amplifier

The initializing time is 1 to 2 s.



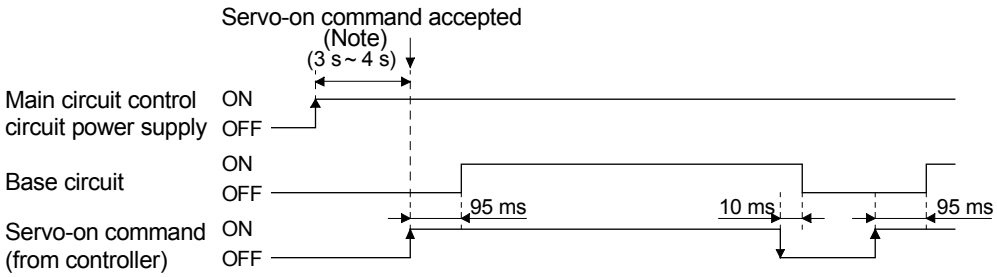
(3) MR-J2M-P8A series servo amplifier

The initializing time is 3 s.



(4) MR-J2S-_B_ series servo amplifier

The initializing time is 3 to 4 s.



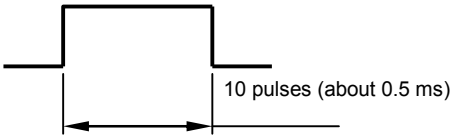
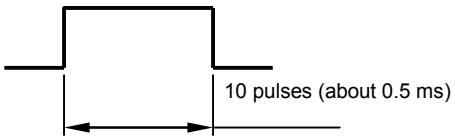
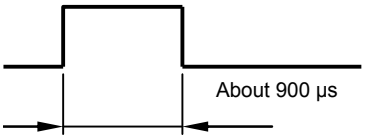
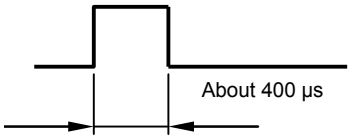
2．6．5　Z-phase Pulse Width (for Primary Replacement)

Note that the pulse width and start-up timing of the encoder Z-phase pulse signal (OP) output from the servo amplifier are different between the MR-J2S / MR-J2M series and the MR-J4 series.

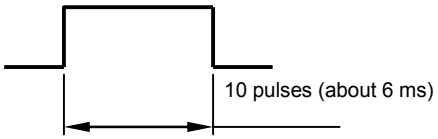
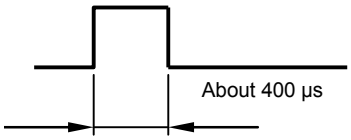
<Precautions>

* Always reset the home position upon replacement.

<Amplifier replacement>

	MR-J2S/MR-J2M series	MR-J4 series
At low speed	10/131,072 pulses (Example: At 10 r/min)  * Approximately less than 5 r/min	10/131,072 pulses (Example: At 10 r/min)  * Approximately less than 10 r/min
At high speed	Approximately 900 μs fixed  * Approximately 5 r/min or more	Approximately 400 μs fixed  * Approximately 10 r/min or more

<Package replacement>

	HG-KR, MR, SR motor
At low speed	4,096 / 4,194,304 pulses (Example: At 10 r/min)  * At approximately less than 130 r/min
At high speed	Approximately 400 μs fixed  * Approximately 130 r/min or more

2.6.6 Setting the Command Pulse Logic

When carrying out positioning in the forward and reserve rotation pulse train setting for the MR-J4-_A_ servo amplifier, it is necessary to adjust the command pulse logic of the positioning module to that of the servo amplifier. Set as follows. This adjustment is unnecessary for a pulse train + symbol and an A-phase/B-phase pulse train.

> **⚠ CAUTION**
>
> ● Even though the command pulse logic of the existing MR-J2S-_A_ servo amplifier is not the same as its positioning module, the motor will rotate, but in the MR-J4-_A_ servo amplifier, when the logics are not set correctly, the motor will not rotate normally. Make sure to check the information below to set the logics. Even when another company's controller is used, check the logic setting.

(1) For A-series positioning modules

Signal type	Command pulse logic setting (Note 1)	
	A-series positioning module Basic parameter 1 setting	MR-J4-_A_ servo amplifier [Pr. PA13] setting
Open-collector type	Positive logic	Positive logic (_ _ 0 _ h)
Differential line driver type	Positive logic (Note 2)	Negative logic (_ _ 1 _ h)

Note 1. When a pulse train + symbol and an A-phase/B-phase pulse train are used, it is unnecessary to adjust the logics.
2. For A-series and Q-series positioning modules, this logic points to the N-side waveform. Therefore, reverse the command pulse logic of the servo amplifier.

(2) For Q-series positioning module

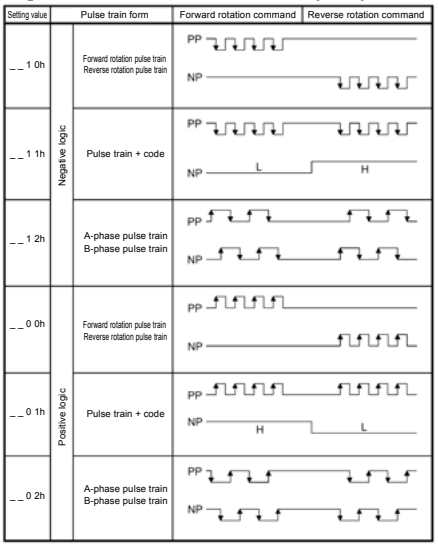
Signal type	Command pulse logic setting (Note 1)	
	Q-series positioning module Pr. 23 setting	MR-J4-_A_ servo amplifier [Pr. PA13] setting
Open-collector type	Positive logic	Positive logic (_ _ 0 _ h)
	Negative logic	Negative logic (_ _ 1 _ h)
Differential line driver type	Positive logic (Note 2)	Negative logic (_ _ 1 _ h)
	Negative logic (Note 2)	Positive logic (_ _ 0 _ h)

Note 1. When a pulse train + symbol and an A-phase/B-phase pulse train are used, it is unnecessary to adjust the logics.
2. For A-series and Q-series positioning modules, this logic points to the N-side waveform. Therefore, reverse the command pulse logic of the servo amplifier.

(3) For F-Series positioning module

Signal type	Command pulse logic setting	
	F-series positioning module (fixed)	MR-J4-_A_ servo amplifier [Pr. PA13] setting
Open-collector type	Negative logic	Negative logic (_ _ 1 _ h)

[Reference] Pr. PA13, Command input pulse train form



2.6.7 When You Use an Encoder Cable Longer than 50m in Cable Length for a Long Wiring (Secondary Replacement or Package Replacement)

If you use a long-distance wiring with the cable length between the amplifier and the motor exceeding 50m, please consult us because you need an encoder conversion cable on the motor side (this is a special accessory). You need to change the parameter settings. Set up the parameters as listed in the table below. (Notes 1, 2, and 3)

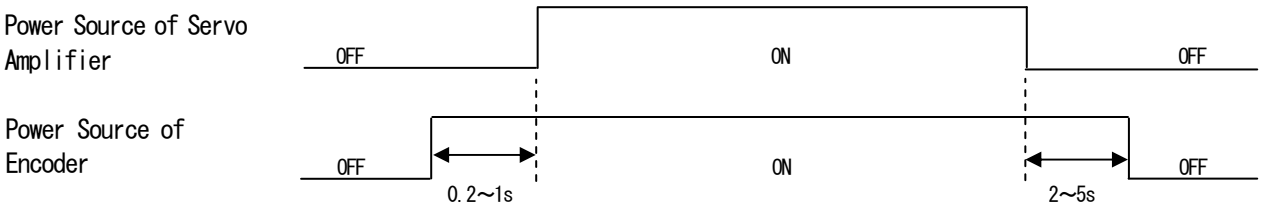
Parameter No.	Setting Item	Setting		Description
		Initial Value	Setting	
Type A PC22 Type B PC04	Function Selection C-1	0□□□h	1□□□h	Selection of the encoder cable communication type 0: 2-cable type 1: 4-cable type * If you do not correctly set up this parameter, encoder initial communication data error 1 (AL. 16. 1) occurs.

Note 1 When the MD and MDR Signals Are not Transferred to the Existing Encoder Cable
Your existing encoder cable may not be compatible with a long-distance cable arrangement (the MD and MDR signals are not transferred). If this is your case, you need to use a new long-distance encoder cable for MR-J4.

Note 2 When you are going to replace the current one with the HG-KR/MR motor, if your existing cable exceeds 30m, you need to make the above-mentioned setting.

Note 3 Precautions for the Case Where the Encoder is Supplied with Power from an External Power Source (5V DC)
If your current encoder cable is a long-distance cable, the power source of the encoder (5V DC) may be supplied from an external module. If this is your case, replace it and pay attention to the following precautions.

- If yours is a type that does not have insulation between the input and the output, the influence of noises may be large. So you may need some anti-noise measures when replacing your module.
- Check that the voltage supplied to the encoder is 5.0V±3% at the encoder connector and that the output current is 300mA or larger.
- Keep the wiring between the external power source and the encoder as short as possible.
- You need to follow different processes to turn on servo amplifier and encoder power.



* Every time you turn on the servo amplifier, reenergize the encoder at the timing shown in this chart. If you do not reenergize the encoder, encoder initial communication data error 1 (AL. 16. 1) occurs.

2.7 Precautions for Using Optional/Peripheral Modules

POINT
● To know if you can use optional modules and/or peripheral modules, see Part 7 of "Guide for Replacing MR-J2S/J2M Series with J4 Series L(NA)03093" published by Mitsubishi Electric Corporation.

Section 3　How to Replace MR-J2S Renewal Tool

3.1　Replacement Procedure

Follow the steps below for replacement.

Check the accessories in the package.	See section 3.2, "Checking the Accessories."
⇩	
Use Renewal Tool for replacement.	See section 3.3.
⇩	
Start up the system and make operation.	See Section 4, "Starting Up the System." See Section 5, "Setting Up Parameters."

3.2　Checking the Accessories

Open the package. Make sure that the package contains what you have ordered.

(1) Renewal Kit

①SC-J2S(B)J4KT02K、②SC-J2S(B)J4KT06K、③SC-J2S(B)J4KT1K、④SC-J2S(B)J4KT3K
⑤SC-J2S(B)J4KT5K、⑥SC-J2S(B)J4KT7K、⑦SC-J2S(B)J4KT15K、⑧SC-J2S(B)J4KT22K

No.	Name of Package	Quantity							
		①	②	③	④	⑤	⑥	⑦	⑧
1	TE Bracket	1	1	1	1	1		2	2
2	Mounting Bracket	1	1						
3	Base/Amplifier Base			1	1	1	1	1	1
4	Servo Amplifier Mounting Screws (Spring Washer with Small Plain Washer M5 x 12)	2	2	3	3	8	8	4	
5	Base Mounting Screws (Spring Washer with Small Plain Washer M10 x 20)							4	8
6	TE1 Bracket Mounting Screws (Spring Washer Plain Washer M3 x 6)	2	2	4	4				
7	TE1 Bracket Mounting Screws (Spring Washer Plain Washer M4 x 8)							6	6
8	Control Signal Conversion Cable	1	1	1	1	1	1	1	1
9	Monitor Conversion Cable *1	1	1	1	1	1	1	1	1
10	Encoder Conversion Cable	1	1	1	1	1	1	1	1
11	24V DC Power Connection Cable	1	1	1	1	1	1	1	1
12	Main Circuit Terminal Harness							2	
13	Flexible Bus Bar								2
14	Cable Tie	4	4	4	4	2	2	2	2

Note　Number (1) above does not include a servo amplifier or a servomotor. You need to purchase one from Mitsubishi Electric Corporation.

*1. Included for Type A only

3．3　Replacing Renewal Kit

<Precautions for Replacement>

Tighten each relevant screw with the torque listed in the table below.

Type of Screw	Location of Use (Note)	Tightening Torque [N·m]
M3	TE1 Bracket - Mounting Bracket (02K、06K、1K、3K) Terminal Block TE2 (02K、06K、1K)	0.72
M3	Terminal Block Cover Mounting Screw (02K、06K、1K、3K)	0.5 or lower
M4	Base⇔Amplifier Base (1K、3K) TE Bracket 2⇔Amplifier Base (15K、22K) TE Bracket 1⇔TE Bracket 2 (15K、22K) For grounding (02K、06K、1K、3K、5K、7K)	1.65
M5	For mounting the servo amplifier (02K、06K、1K、3K、5K、7K、15K)	3.24
M8	For grounding (15K)	13.23
M10	For mounting the servo amplifier (22K)	26.46

Note:The numbers in the parentheses indicate the capacity of Renewal Kit.

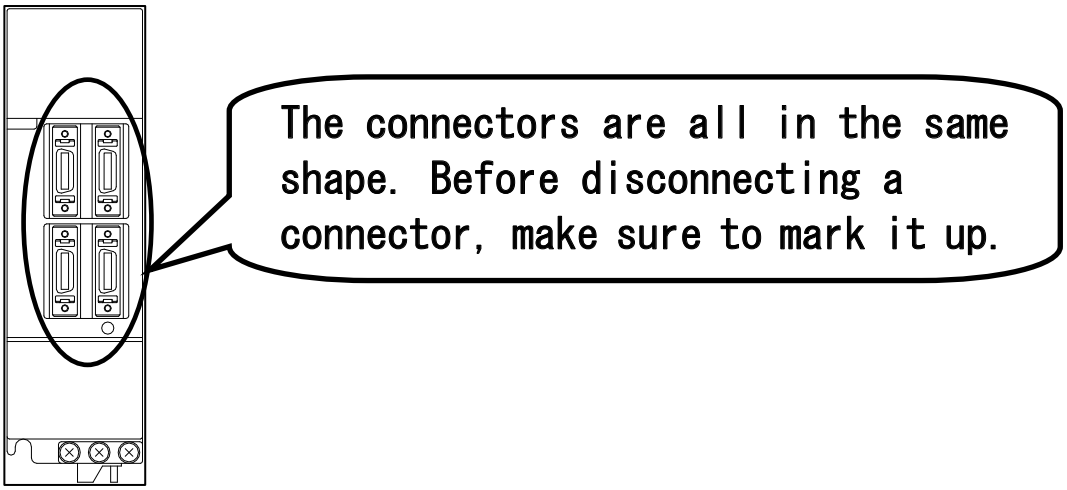
3．3．1　Precautions for Assembling Renewal Kit

(1) Distinguishing Existing Cable Connectors

⚠CAUTION

●Connectors CN1A, CN1B, CN2, and CN3 on existing MR-J2S are all in the same shape. Before removing a cable, make sure to mark up the connector so that you will know where to connect. Otherwise, you may be connecting a wrong cable after replacing the servo amplifier. Use caution because the servo amplifier, the servomotor, and/or the sequencer may break if you connect a wrong cable.

●You are not allowed to assemble this Renewal Tool before the control panel is installed. Follow this manual to correctly assemble the tool. If you follow an incorrect step, you may need to resume assembling the tool.



MR-J2S Servo Amplifier
(Front View)

３．３．２　Assembling SC-J2S(B) J4KT02K/06K

（１）Preparing to Assemble Renewal Kit

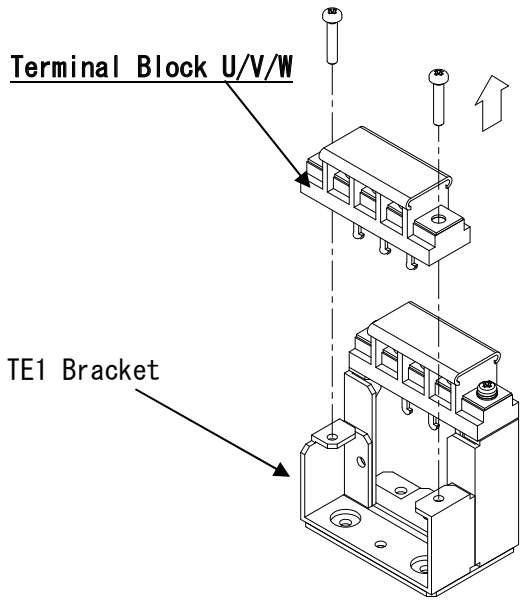
Remove the terminal block from the TE1 bracket, which was mounted at the time of shipment.

Note The terminal block you need to remove is different depending on whether a battery is used or not.

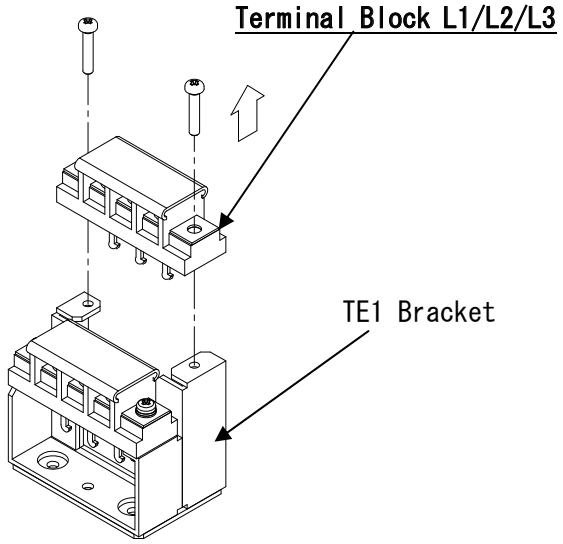
Follow the instructions below to remove one.

①In the Case of an Incremental System
(Where Servo Amplifier Battery Option "MR-BAT6V1SET" Is Not Used)
・**Remove Terminal Block U/V/W only.**

②In the Case of an Absolute Position Detection System
(Where Servo Amplifier Battery Option "MR-BAT6V1SET" Is Used)
・**Remove Terminal block L1/L2/L3 only.**



①When a battery is not used
(in the case of an incremental system)

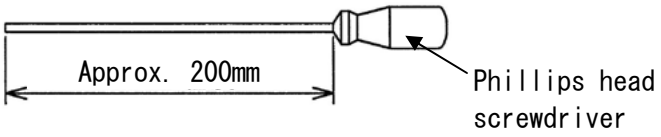


②When a battery is used
(in the case of an absolute position detection system)

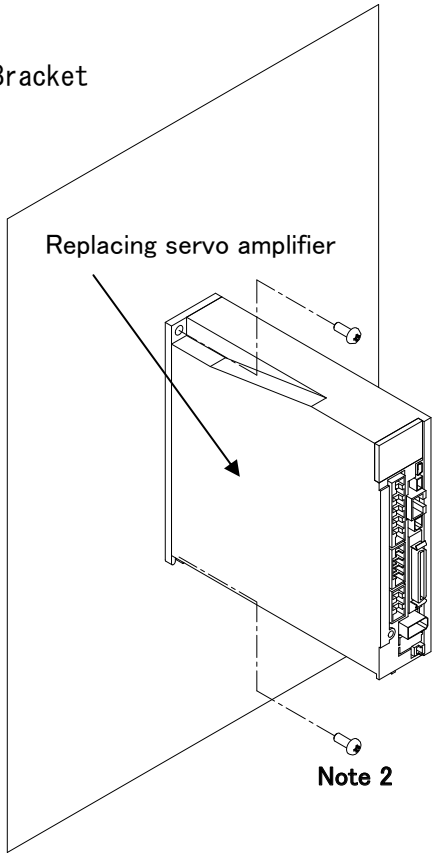
Note Cables and other components in Renewal Kit are not illustrated here for you to easily see how the components are assembled.

(２) Mounting the Replacing Servo Amplifier and the Mounting Bracket

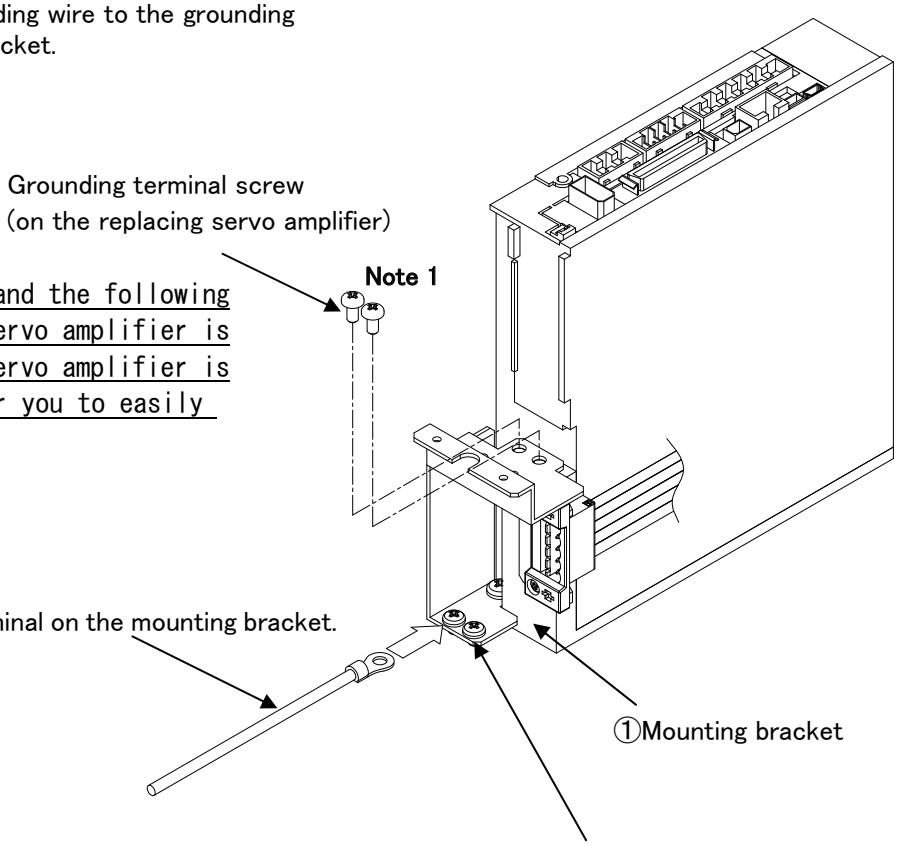
＊ You have no extra space between the servo amplifier and Renewal Kit. To mount the servo amplifier, use such a Phillips head screwdriver as shown below.



1. Remove the 2 grounding terminal screws on the replacing servo amplifier in advance.
   Note 1 Make sure to remove the grounding terminal screws in advance.
2. As shown in the drawing on the right side, mount the replacing servo amplifier on the control panel. To mount the servo amplifier, use the screws on the replaced servo amplifier and the screws in the Renewal Kit package (M5 × 12; 2 screws).
   Note 2 Do not tighten the screw in the lower part of the amplifier (screw in the screw approximately 25% of the total length).
3. As shown in the drawing below, mount the mounting bracket ① on the replacing servo amplifier, and fasten it with the fixing screw in the lower part of the amplifier and with the grounding terminal screw that you removed in advance.
4. Connect your existing grounding wire to the grounding terminal on the mounting bracket.



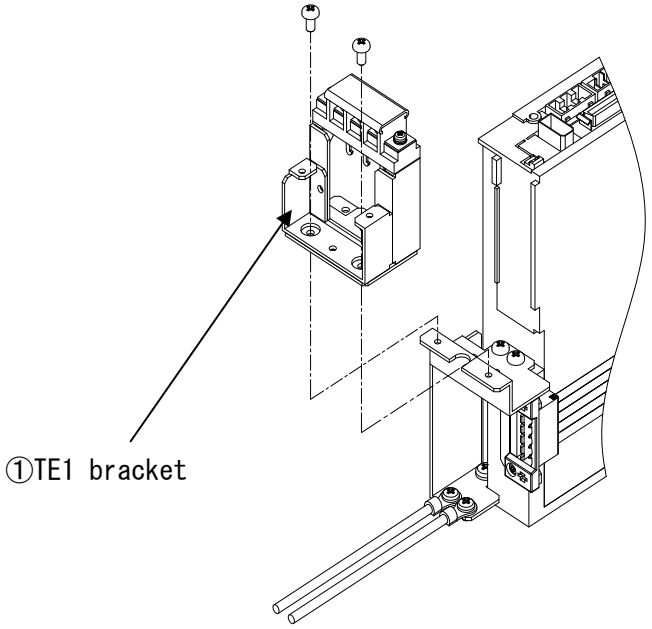
Note Step 3 in paragraph (2) and the following step are performed after the servo amplifier is mounted. In this manual, the servo amplifier is seen from a different angle for you to easily understand what to do.



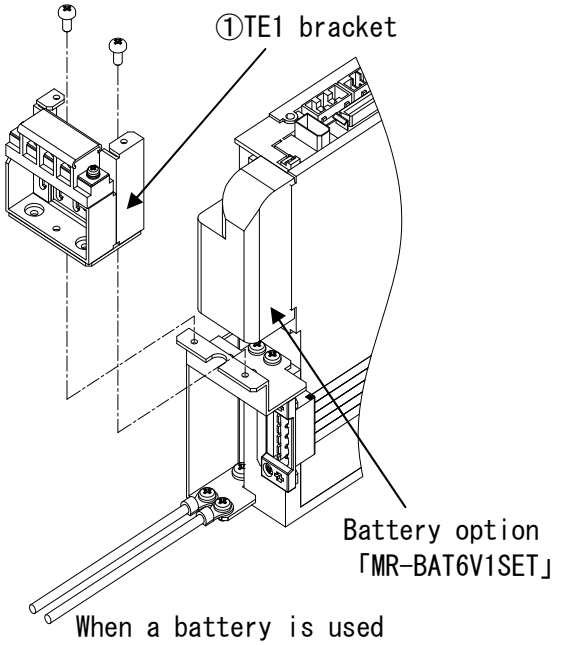
Note Cables and other components in Renewal Kit are not illustrated here for you to easily see how the components are assembled.

(３)Mounting the TE1 Bracket

Use the screws (M3 × 6; 2 screws) that come as accessories in the package to mount, depending on whether a battery is used or not, the TE1 bracket ① that you in advice removed the terminal block from.



When a battery is not used
(in the case of an incremental system)



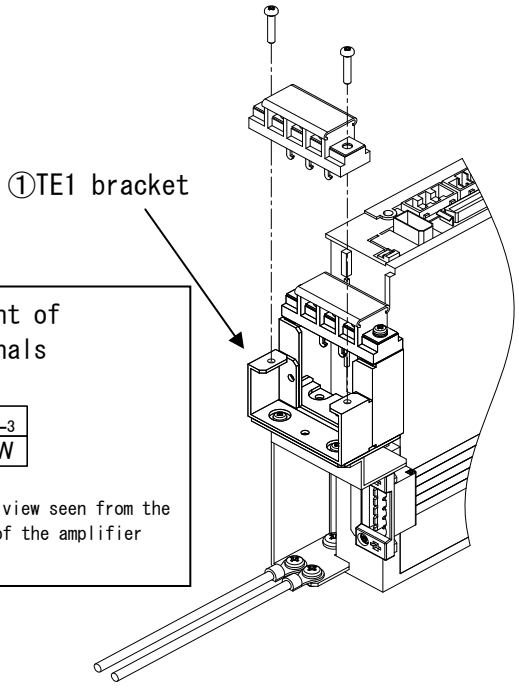
When a battery is used
(in the case of an absolute position detection system)

(４) Mounting the Terminal Block

Mount the terminal block that you removed in advance on the TE1 bracket①.

＊ When mounting the bracket, pay attention to the direction of the terminal block.

If you try to mount it in an incorrect direction, you cannot mount it correctly. Be careful.



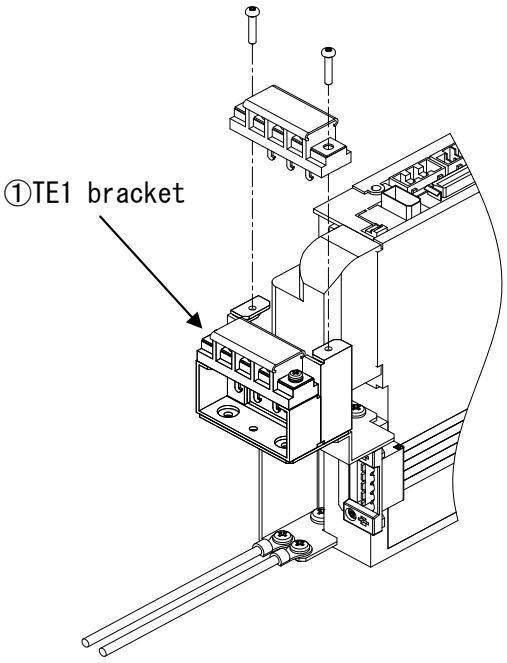
Arrangement of the Terminals

TE1

L_1	L_2	L_3
U	V	W

Note
A schematic view seen from the front side of the amplifier

When a battery is not used
(in the case of an incremental system)



When a battery is used
(in the case of an absolute position detection system)

(5) Connecting the Cables to the Replacing Servo Amplifier

①Check the names of the cables that are to be housed in Renewal Kit. Check the abbreviations and short names of the connectors to the servo amplifier. Connect the cables and the connectors.

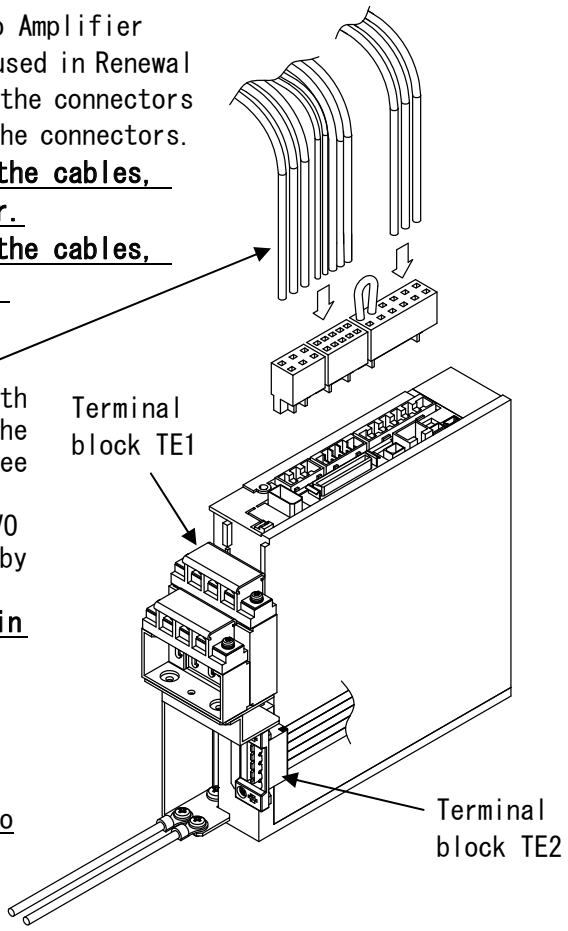
***In the case of terminal block TE1, connect the cables, starting from the right side of the amplifier.**

***In the case of terminal block TE2, connect the cables, starting from the left side of the amplifier.**

①Cables to be housed in Renewal Kit

Use the cable connector that comes with the servo amplifier for wiring. For the details of how to connect the cables, see the technical materials on servo amplifiers (Model MR-J4-_A(-RJ) SERVO AMPLIFIER INSTRUCTION MANUAL) issued by Mitsubishi Electric corporation.

*** For the connections of the built-in regeneration resistance and the regeneration option, see section 3.2.2, paragraphs (9) and (10).**

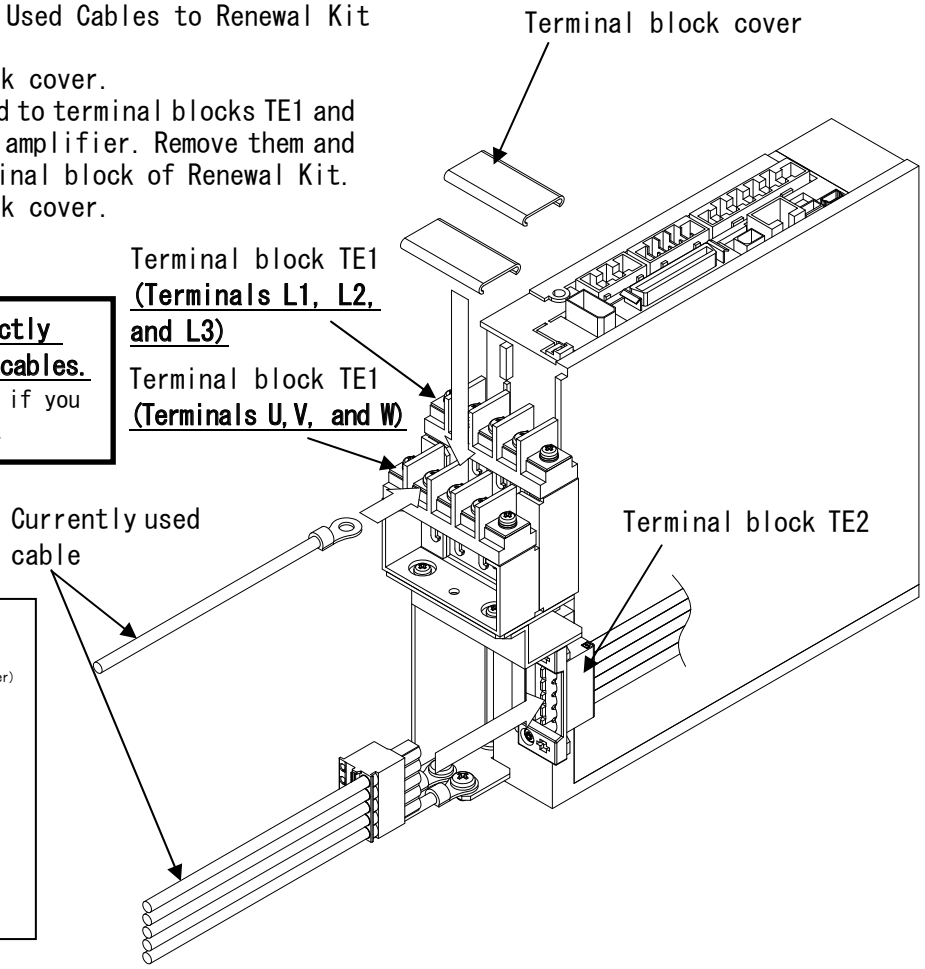


Use the cable tie (an accessory in the package) to tie up and fasten the cables in Renewal Kit.

(6) Connecting the Currently Used Cables to Renewal Kit

1. Remove the terminal block cover.
2. There are cables connected to terminal blocks TE1 and TE2 of the existing servo amplifier. Remove them and connect them to the terminal block of Renewal Kit.
3. Attach the terminal block cover.

*** Use caution not to incorrectly connect the currently used cables.**
The amplifier will be broken if you make an incorrect connection.



Arrangement of the Terminals

TE1

(A schematic view seen from the front side of the amplifier)

L_1	L_2	L_3
U	V	W

Terminal screw: M4

Tightening torque: 1.2 [N·m]

TE2

Front side of the amplifier←

D	C	P	L_{21}	L_{11}

(7) Connecting the Replacing Servo Amplifier and the Conversion Cable

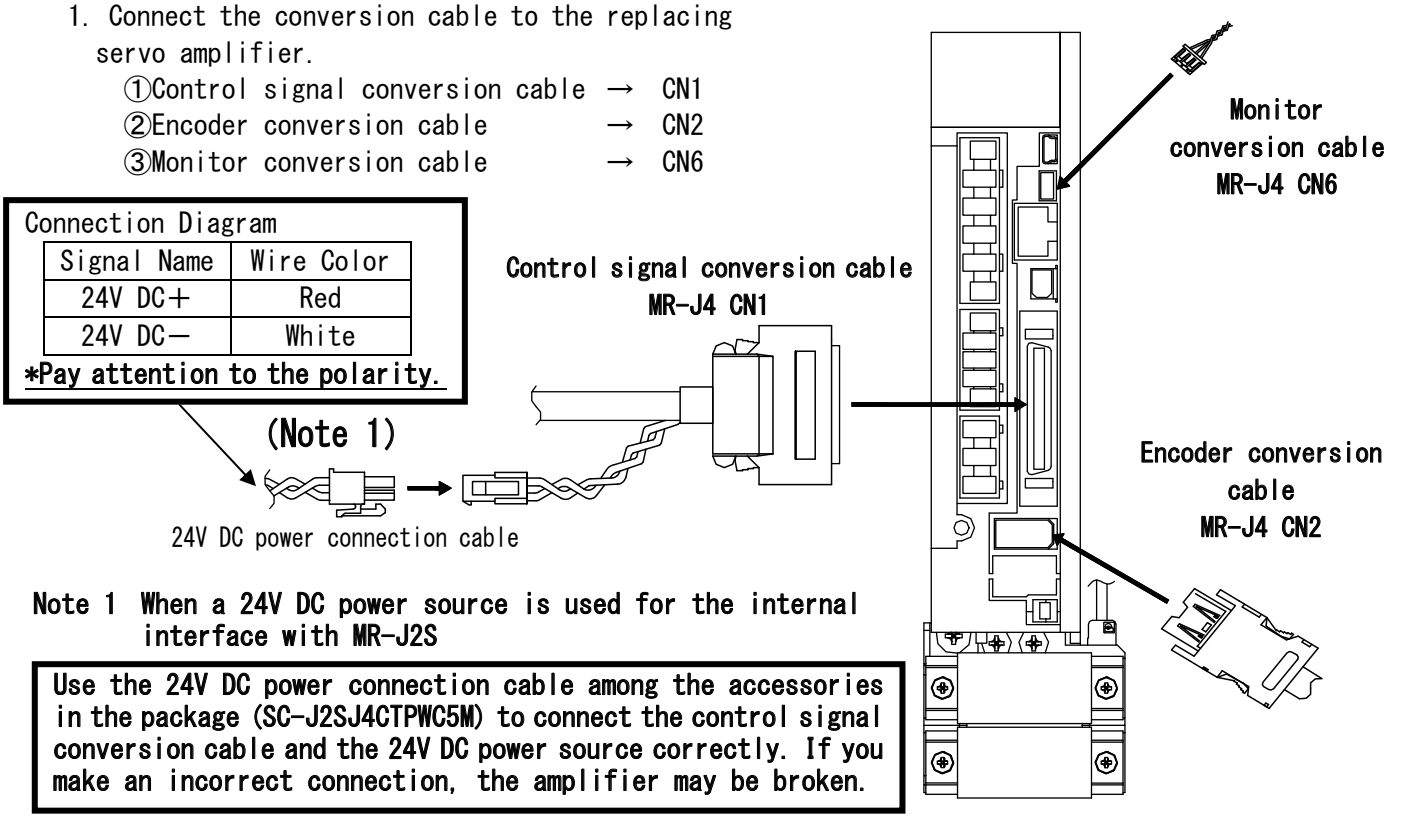
In the Case of Type A

1. Connect the conversion cable to the replacing servo amplifier.
   ①Control signal conversion cable → CN1
   ②Encoder conversion cable → CN2
   ③Monitor conversion cable → CN6

Connection Diagram

Signal Name	Wire Color
24V DC+	Red
24V DC−	White

*Pay attention to the polarity.

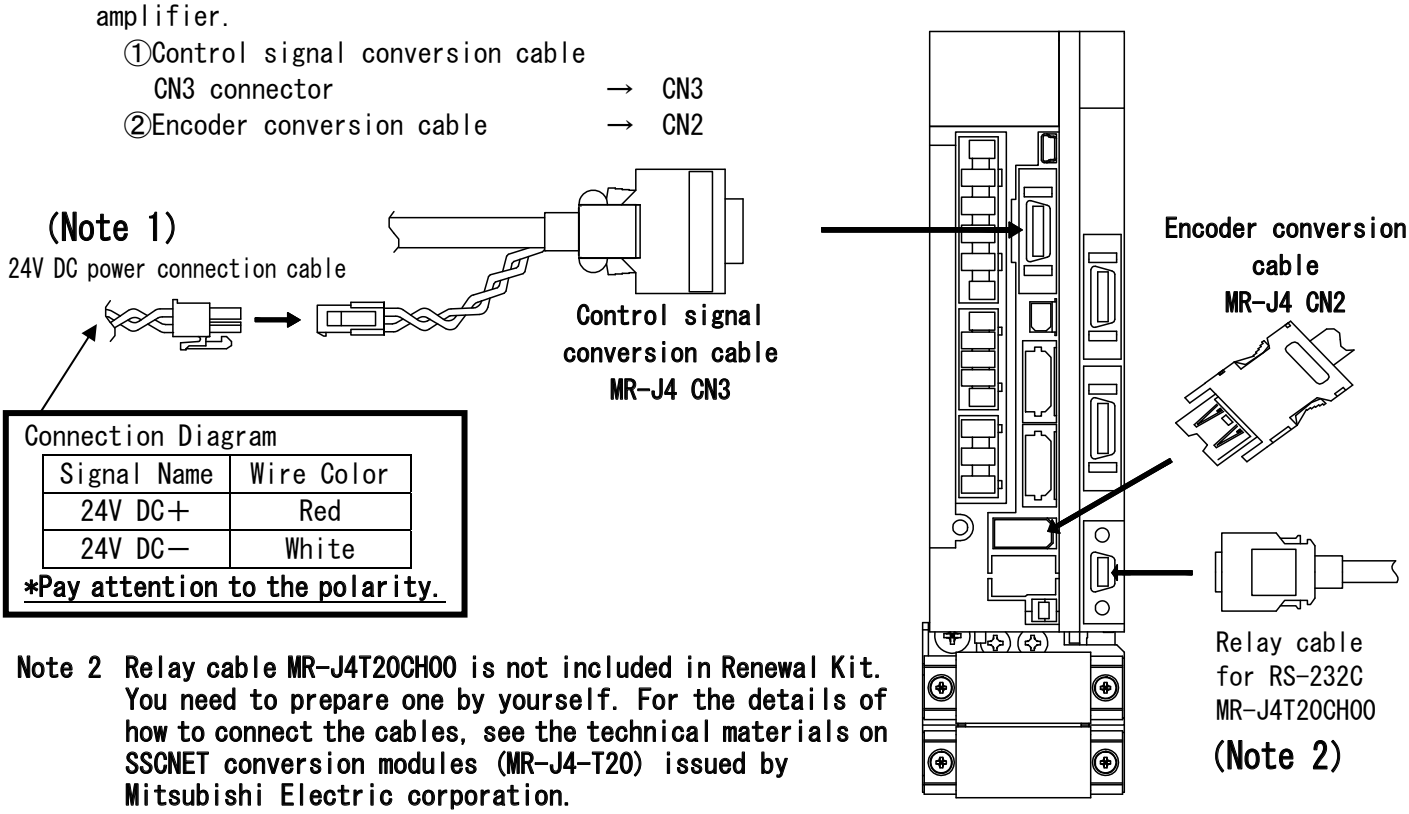


Note 1 When a 24V DC power source is used for the internal interface with MR-J2S

Use the 24V DC power connection cable among the accessories in the package (SC-J2SJ4CTPWC5M) to connect the control signal conversion cable and the 24V DC power source correctly. If you make an incorrect connection, the amplifier may be broken.

In the Case of Type B

1. Connect the conversion cable to the replacing servo amplifier.
   ①Control signal conversion cable
   CN3 connector → CN3
   ②Encoder conversion cable → CN2



Connection Diagram

Signal Name	Wire Color
24V DC+	Red
24V DC−	White

*Pay attention to the polarity.

Note 2 Relay cable MR-J4T20CH00 is not included in Renewal Kit. You need to prepare one by yourself. For the details of how to connect the cables, see the technical materials on SSCNET conversion modules (MR-J4-T20) issued by Mitsubishi Electric corporation.

⚠ CAUTION ●A 24V DC power source for the interface is not included in Renewal Kit. You need to prepare one by yourself.

(８) Connecting the Conversion Cable and the Currently Used Cable

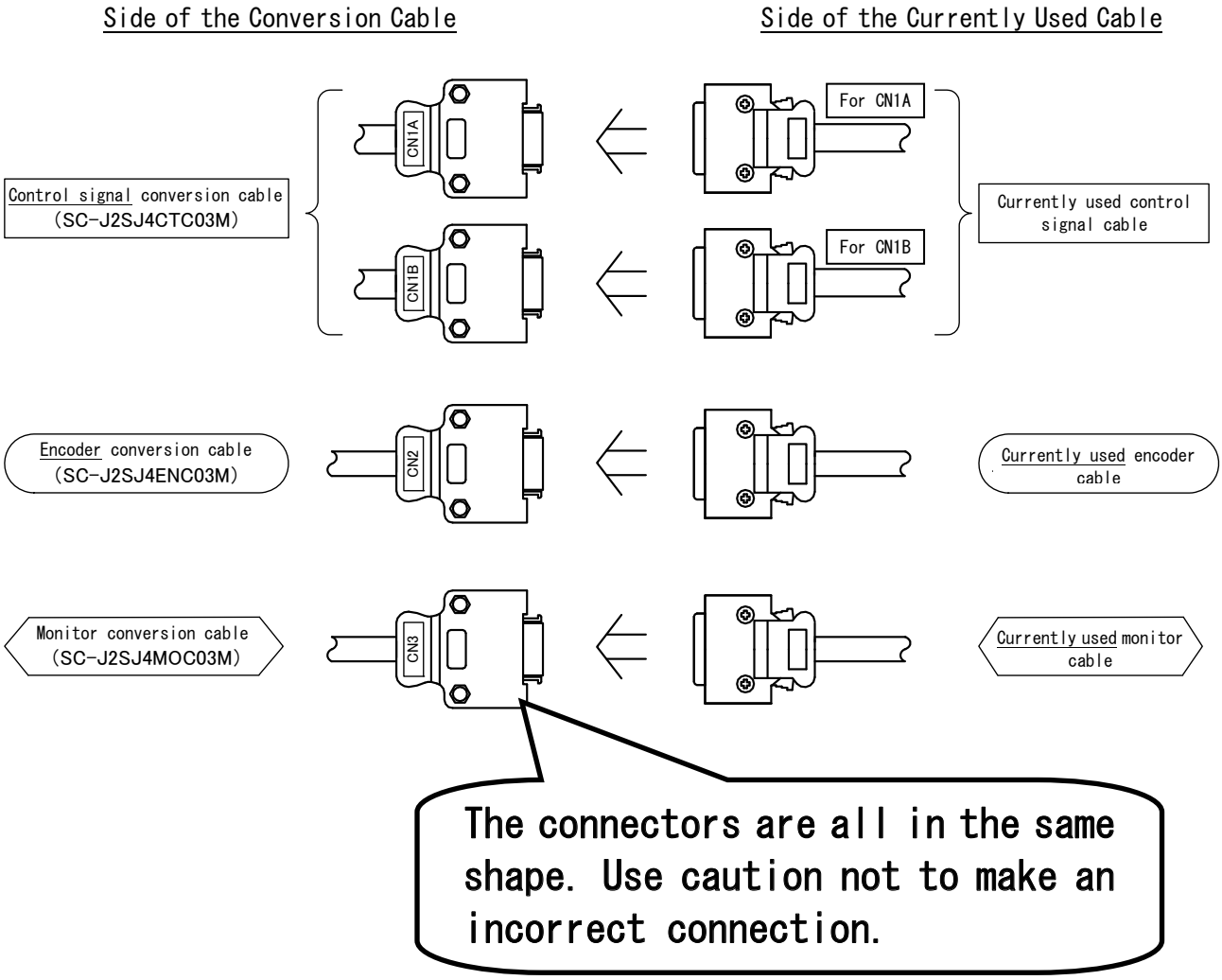
・Type of the servo amplifier: The case of Type A with the amplifier capacity of 7kW or lower

You are going to connect the currently used cable to the conversion cable.

⚠ CAUTION

●The connectors (CN1A, CN1B, CN2, and CN3) on the conversion cable are all in the same shape. Use caution not to make an incorrect connection. If you make an incorrect connection, the servo amplifier may be broken.

The connectors (CN1A, CN1B, CN2, and CN3) on servo amplifier MR-J2S-_A are all in the same shape. If you connect a currently used cable to a wrong connector and turn on power, the amplifier, the motor, and/or the like may be broken due to the difference in voltage.



⚠ CAUTION

●Do not fasten the encoder conversion cable and the control signal conversion cable on a power cable or on a drive cable. Dosing so may cause an incorrect operation.

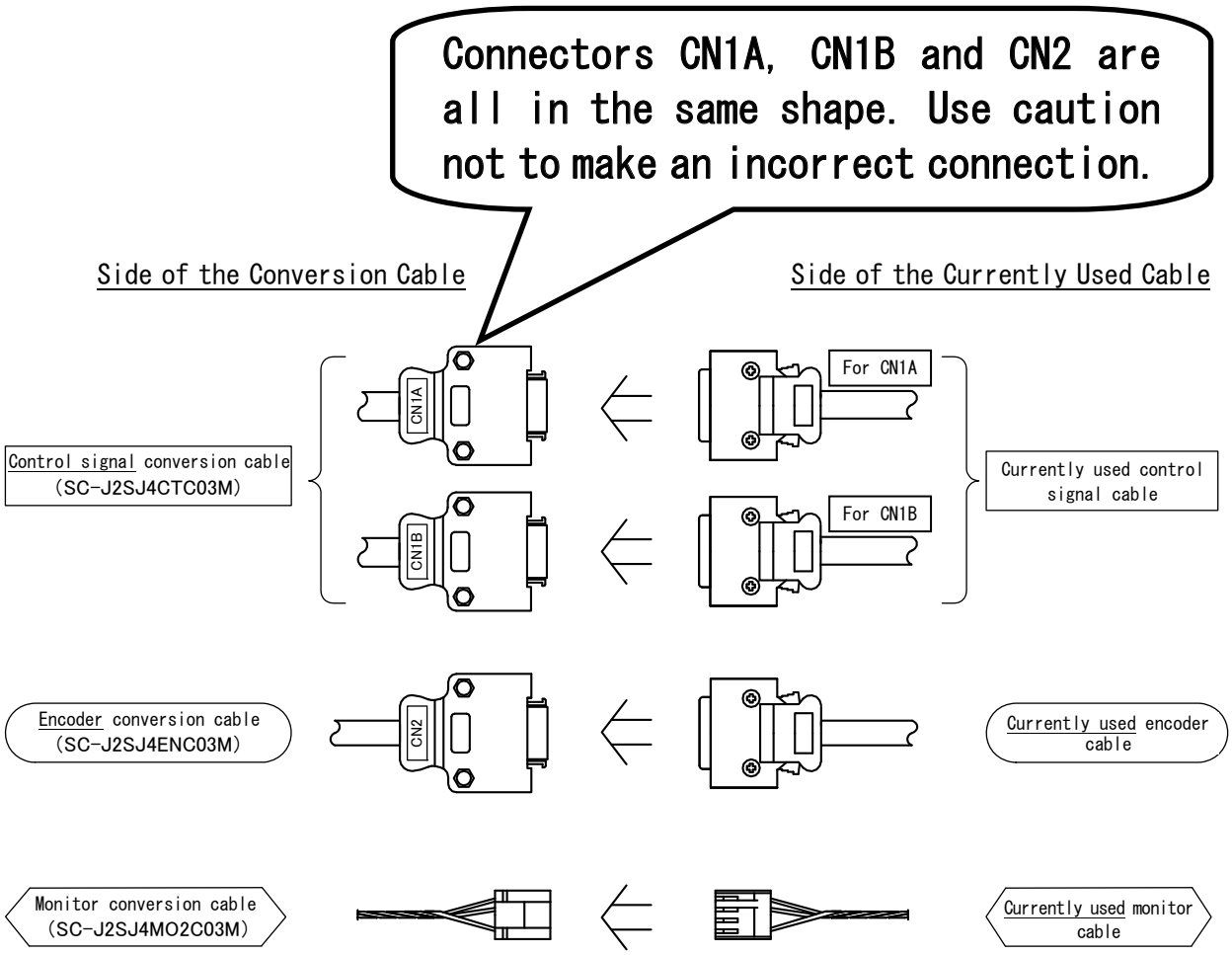
Use cable ties (accessories in the package) to fasten and fix the cables on the control signal conversion cable of Renewal Kit or on the currently used control signal connection cable.

・Type of the servo amplifier・・・**The case of Type A with the amplifier capacity of 11kW or higher**
You are going to connect the currently used cable to the conversion cable.

⚠CAUTION

●The connectors (CN1A, CN1B, and CN2) on the conversion cable are all in the same shape. Use caution not to make an incorrect connection. If you make an incorrect connection, the servo amplifier may be broken.

The connectors (CN1A, CN1B, and CN2) on servo amplifier MR-J2S-_A are all in the same shape. If you connect a currently used cable to a wrong connector and turn on power, the amplifier, the motor, and/or the like may be broken due to the difference in voltage.



⚠CAUTION

●Do not fasten the encoder conversion cable and the control signal conversion cable on a power cable or on a drive cable. Dosing so may cause an incorrect operation.

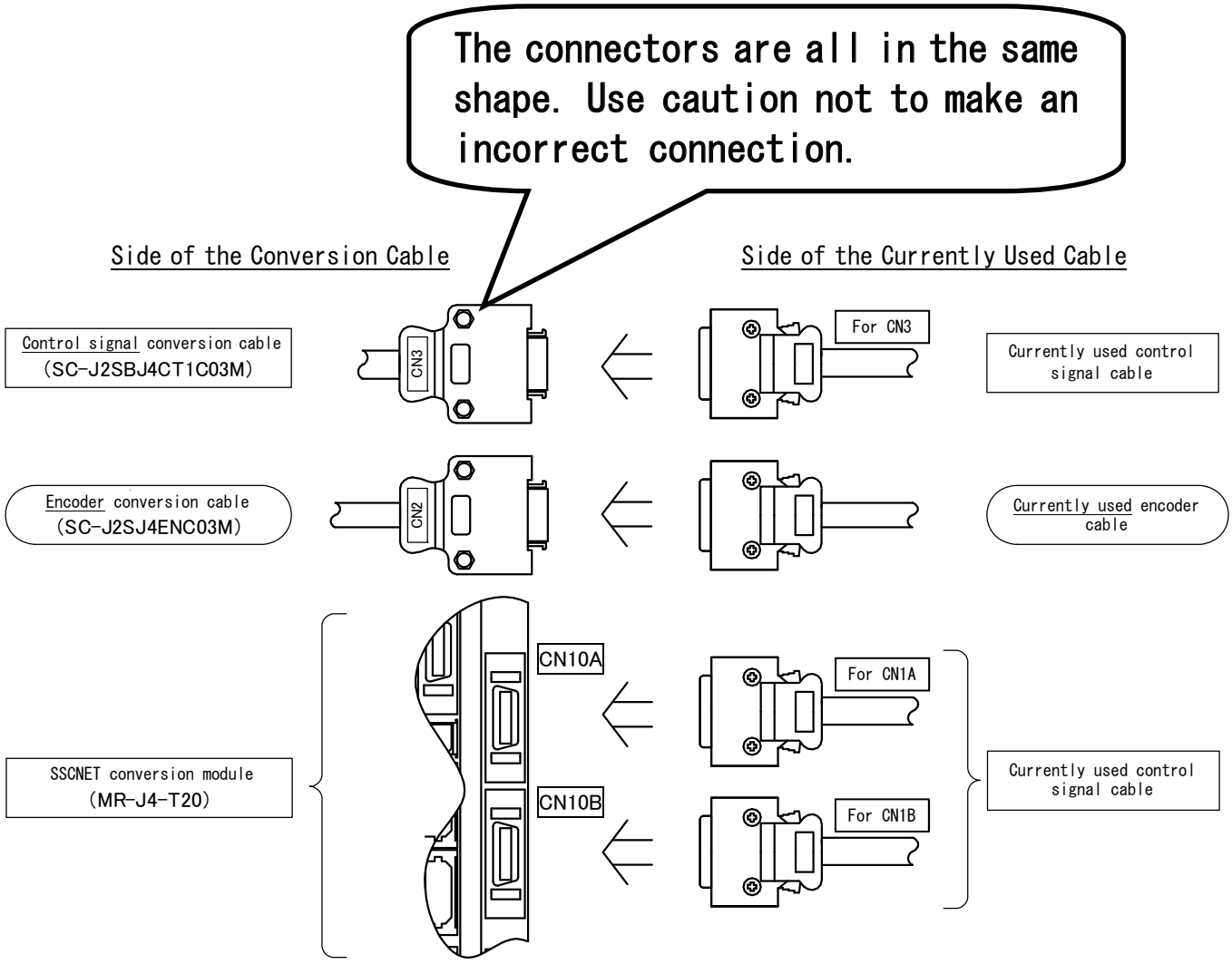
Use cable ties (accessories in the package) to fasten and fix the cables on the control signal conversion cable of Renewal Kit or on the currently used control signal connection cable.

・Type of the servo amplifier・・・**The case of Type B with the amplifier capacity of 7kW or lower**
You are going to connect the currently used cable to the conversion cable.

⚠ CAUTION

●The connectors (CN3, CN2, CN1A, and CN1B) on the conversion cable are all in the same shape. Use caution not to make an incorrect connection. If you make an incorrect connection, the servo amplifier may be broken.

The connectors (CN3 and CN2) on servo amplifier MR-J2S-_B are all in the same shape. If you connect a currently used cable to a wrong connector and turn on power, the amplifier, the motor, and/or the like may be broken due to the difference in voltage.



⚠ CAUTION

●Do not fasten the encoder conversion cable and the control signal conversion cable on a power cable or on a drive cable. Dosing so may cause an incorrect operation.

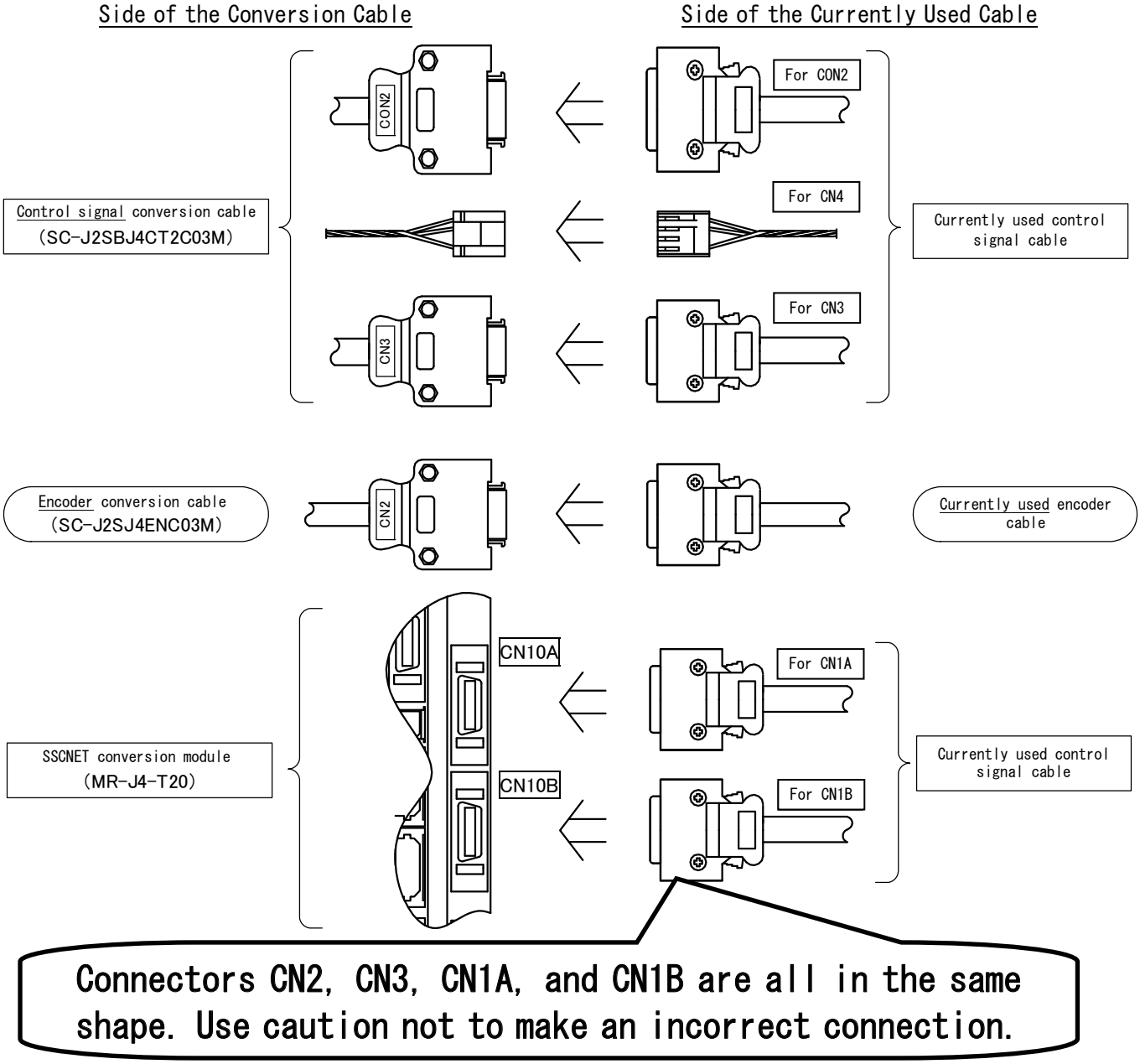
Use cable ties (accessories in the package) to fasten and fix the cables on the control signal conversion cable of Renewal Kit or on the currently used control signal connection cable.

・Type of the servo amplifier・・・**The case of Type B with the amplifier capacity of 11kW or higher**
You are going to connect the currently used cable to the conversion cable.

⚠CAUTION

●The connectors (CN2, CN3, CN1A, and CN1B) on the conversion cable are all in the same shape. Use caution not to make an incorrect connection. If you make an incorrect connection, the servo amplifier may be broken.

The connectors (CN2 and CN3) on servo amplifier MR-J2S-_B are all in the same shape. If you connect a currently used cable to a wrong connector and turn on power, the amplifier, the motor, and/or the like may be broken due to the difference in voltage.



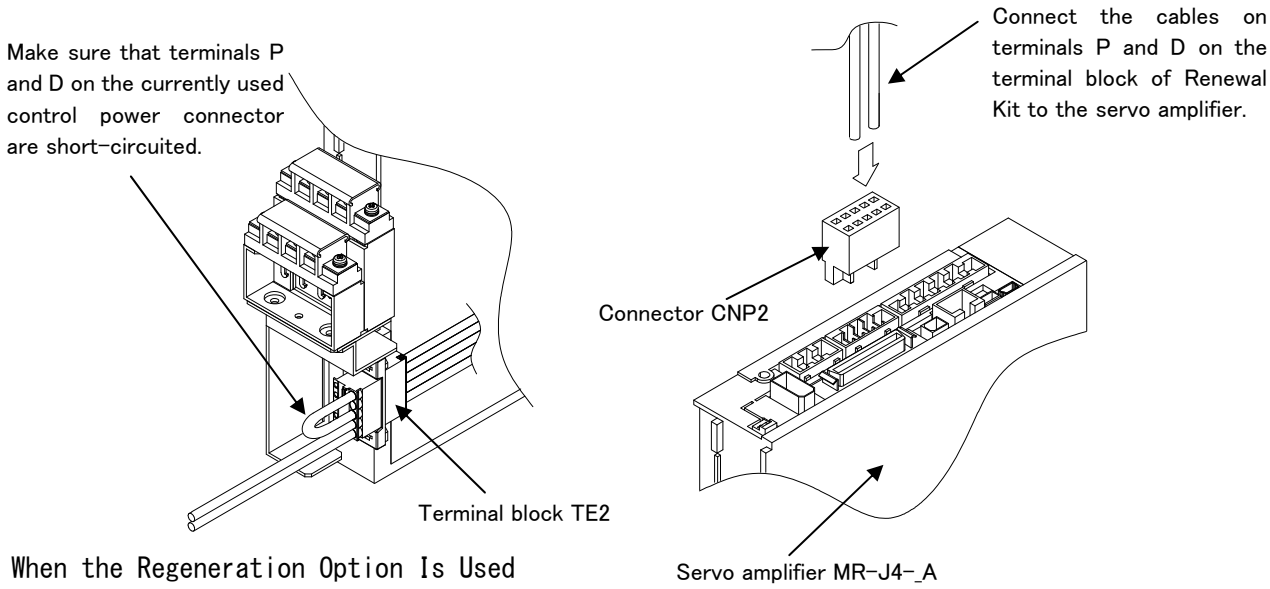
⚠CAUTION

●Do not fasten the encoder conversion cable and the control signal conversion cable on a power cable or on a drive cable. Dosing so may cause an incorrect operation.

Use cable ties (accessories in the package) to fasten and fix the cables on the control signal conversion cable of Renewal Kit or on the currently used control signal connection cable.

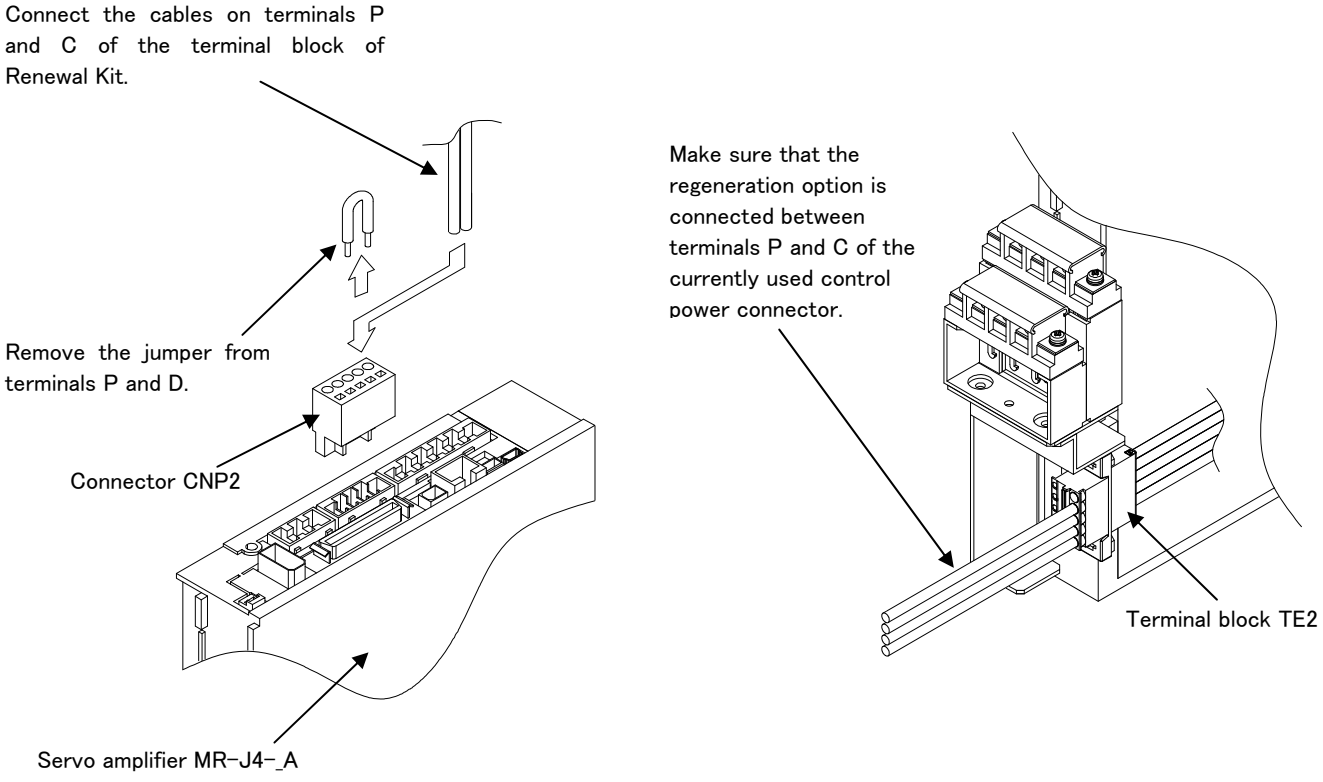
(9) When the Built-in Regeneration Resistance Is Used

1. Make sure that terminals P and D on the currently used control power connector to be connected to the terminal bock (TE2) of Renewal Kit are short-circuited.
2. Connect the cables on terminals P and D of the terminal block (TE2) of Renewal Kit to the replacing servo amplifier.
   * For the details of how to connect the cables, see the technical materials on the MR-J4 servo amplifier issued by Mitsubishi Electric Corporation.



(10) When the Regeneration Option Is Used

1. Remove the jumper between terminals P and D on the CNP2 connector of the replacing servo amplifier.
2. Connect the cables on terminals P and C on the terminal block (TE2) of Renewal Kit to the replacing servo amplifier.
3. Connect the regeneration option to terminals P and C on the currently used control power connector to be connected to the terminal block (TE2) of Renewal Kit.
   * For the details of how to connect the cables of the regeneration option, see the technical materials on the MR-J4 servo amplifier issued by Mitsubishi Electric Corporation.



3．3．3　Assembling SC-J2S(B) J4KT1K

(1) Preparing to Assemble Renewal Kit (1)

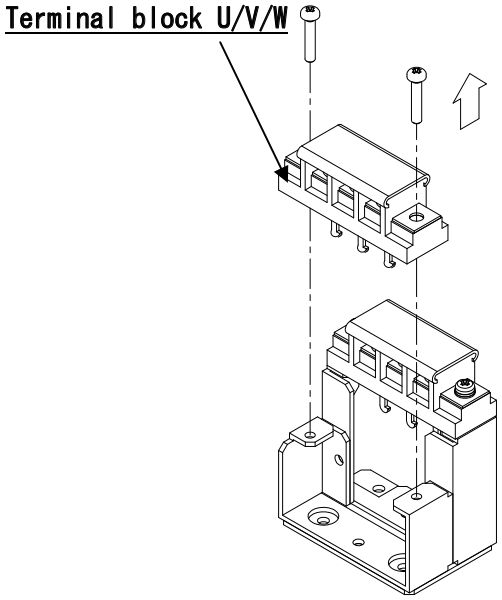
Remove the terminal block from the TE1 bracket, which was mounted at the time of shipment.

Note The terminal block you need to remove is different depending on whether a battery is used or not.

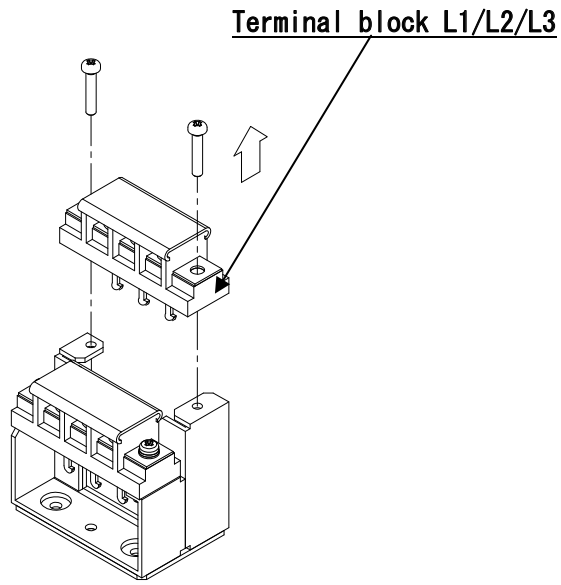
Follow the instructions below to remove one.

①In the Case of an Incremental System
(Where Servo Amplifier Battery Option "MR-BAT6V1SET" Is Not Used)
・**Remove Terminal block U/V/W only.**

②In the Case of an Absolute Position Detection System
(Where Servo Amplifier Battery Option "MR-BAT6V1SET" Is Used)
・**Remove Terminal block L1/L2/L3 only.**



①When a battery is not used
(in the case of an incremental system)



②When a battery is used
(in the case of an absolute position detection system)

Note
Cables and other components in Renewal Kit are not illustrated here for you to easily see how the components are assembled.

(2) Preparing to Assemble Renewal Kit (2)

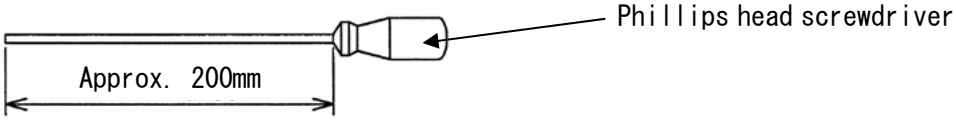
Remove the attachment, which was mounted at the time of shipment, to separate it into:

① the base, and

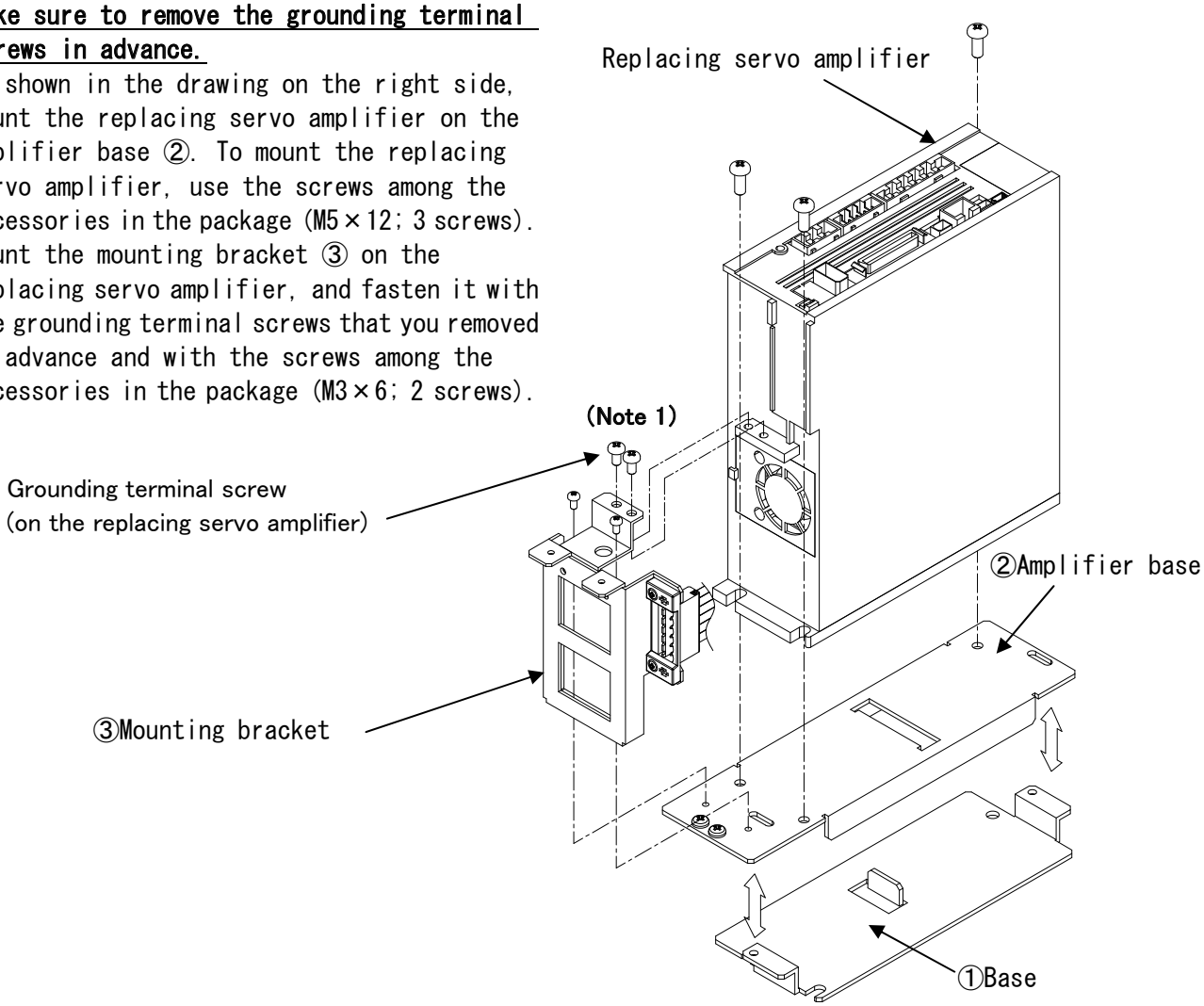
② the amplifier base.

(3) Mounting the Replacing Servo Amplifier on Renewal Kit

*** You have no extra space between the servo amplifier and Renewal Kit. To mount the servo amplifier, use such a Phillips head screwdriver as shown below.**

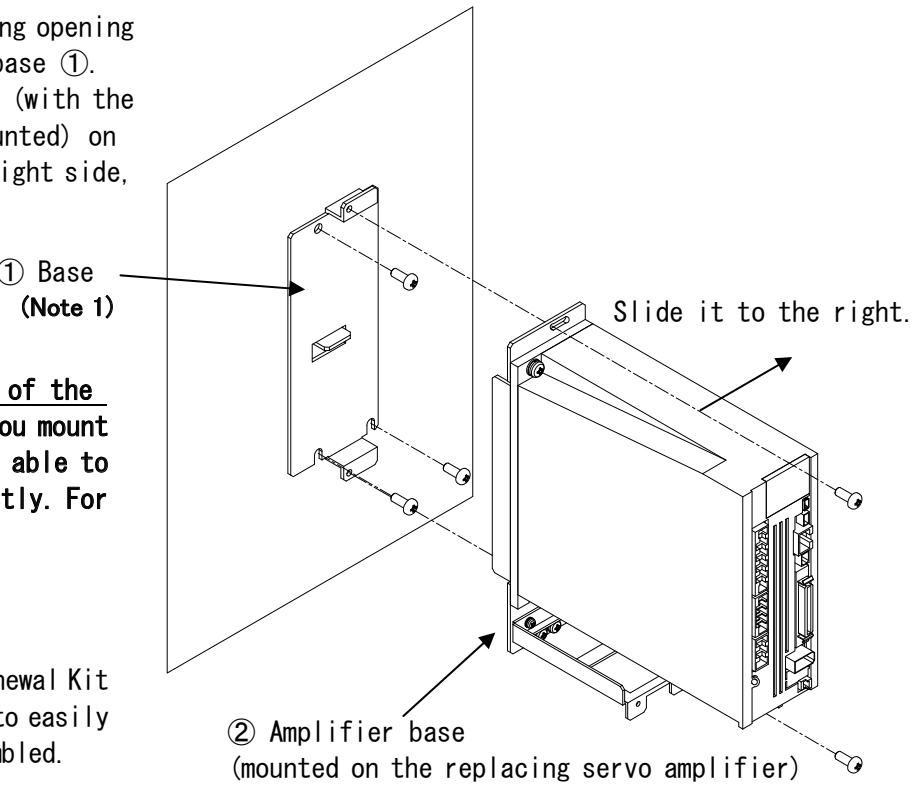


1. Remove the 2 grounding terminal screws on the replacing servo amplifier in advance.
   Note 1
   Make sure to remove the grounding terminal screws in advance.
2. As shown in the drawing on the right side, mount the replacing servo amplifier on the amplifier base ②. To mount the replacing servo amplifier, use the screws among the accessories in the package (M5×12; 3 screws).
3. Mount the mounting bracket ③ on the replacing servo amplifier, and fasten it with the grounding terminal screws that you removed in advance and with the screws among the accessories in the package (M3×6; 2 screws).



(4) Mounting Renewal Kit on the Control Panel

1. Use the currently used mounting opening and the screws to mount the base ①.
2. Attach the amplifier base ② (with the replacing servo amplifier mounted) on the base ①, slide it to the right side, and mount it there.



Note 1

Pay attention to the direction of the base ① while mounting it. If you mount it incorrectly, you will not be able to mount the servo amplifier correctly. For the details, see section 3.3.3, paragraph (8).

Note

Cables and other components in Renewal Kit are not illustrated here for you to easily see how the components are assembled.

(5) Mounting the TE1 Bracket

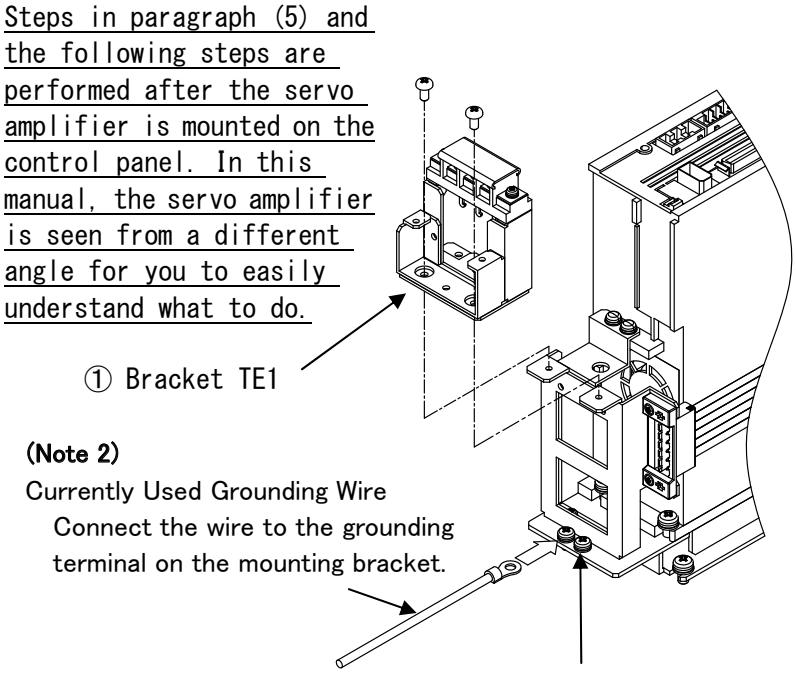
1. Connect the currently used grounding wire to the grounding contact of the mounting bracket.

Note 2 Make sure to connect the currently used grounding wire before the TE1 bracket is mounted. You will not be able to connect the grounding wire after the bracket is mounted.

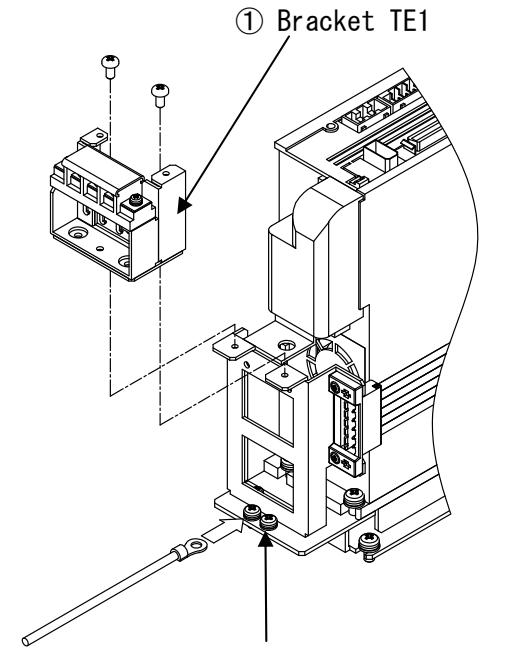
2. Use the screws (M3×6; 2 screws) that come as accessories in the package to mount, depending on whether a battery is used or not, the TE1 bracket ① that you in advice removed the terminal block from.

Note

Steps in paragraph (5) and the following steps are performed after the servo amplifier is mounted on the control panel. In this manual, the servo amplifier is seen from a different angle for you to easily understand what to do.



When a battery is not used
(in the case of an incremental system)



When a battery is used
(in the case of an absolute position detection system)

(6) Mounting the Terminal Block

You are going to mount the terminal block you removed in advance to the TE1 bracket ①.

*** When mounting the bracket, pay attention to the direction of the terminal block.**

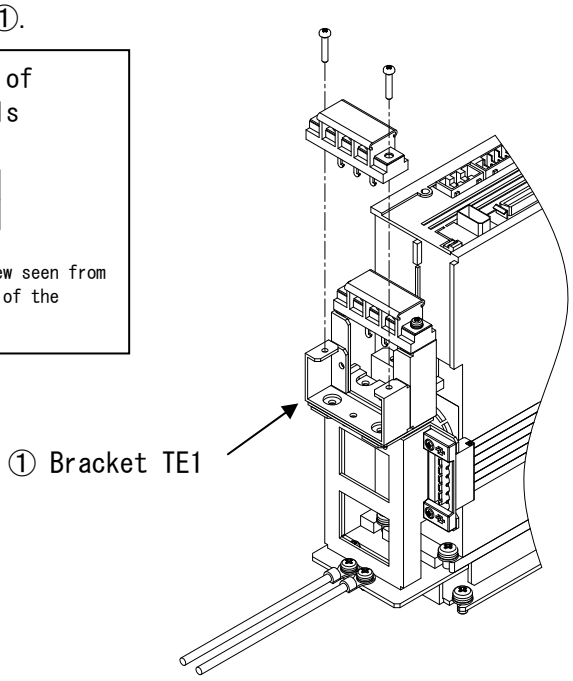
If you try to mount it in an incorrect direction, you cannot mount it correctly. Be careful.

Arrangement of the Terminals

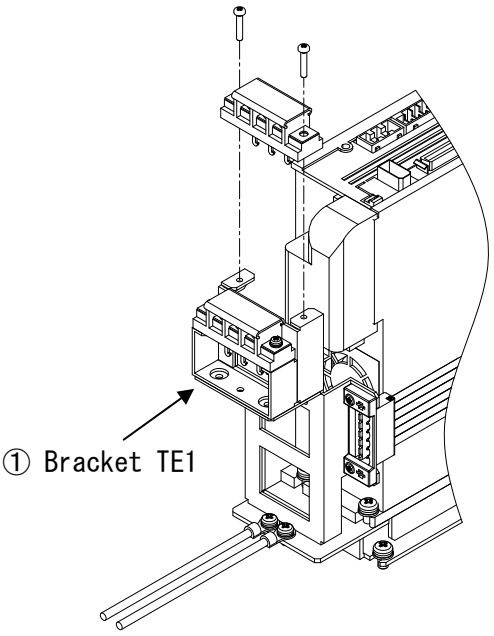
TE1

L_1	L_2	L_3
U	V	W

Note
A schematic view seen from the front side of the amplifier



When a battery is not used
(an incremental system)



When a battery is used
(absolute position detection system)

(7) Connecting the Cables to the Replacing Servo Amplifier

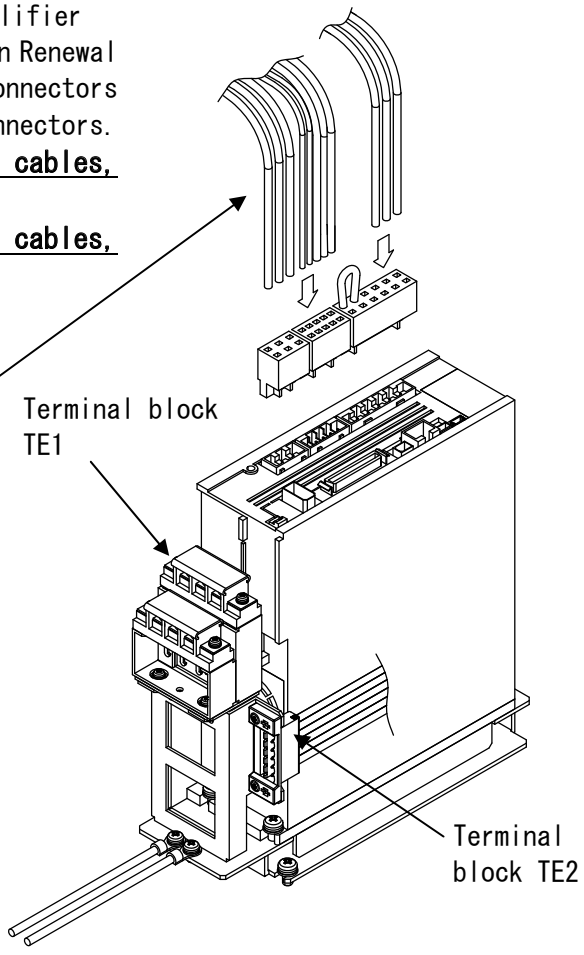
① Check the names of the cables that are to be housed in Renewal Kit. Check the abbreviations and short names of the connectors to the servo amplifier. Connect the cables and the connectors.

*** In the case of terminal block TE1, connect the cables, starting from the right side of the amplifier.**

*** In the case of terminal block TE2, connect the cables, starting from the left side of the amplifier.**

① Cables to be housed in Renewal Kit
Use the cable connector that comes with the servo amplifier for wiring. For the details of how to connect the cables, see the technical materials on servo amplifiers (Model MR-J4-_A(-RJ) SERVO AMPLIFIER INSTRUCTION MANUAL) issued by Mitsubishi Electric corpolation.

*** For the connections of the built-in regeneration resistance and the regeneration option, see section 3.3.2, paragraphs (9) and (10).**

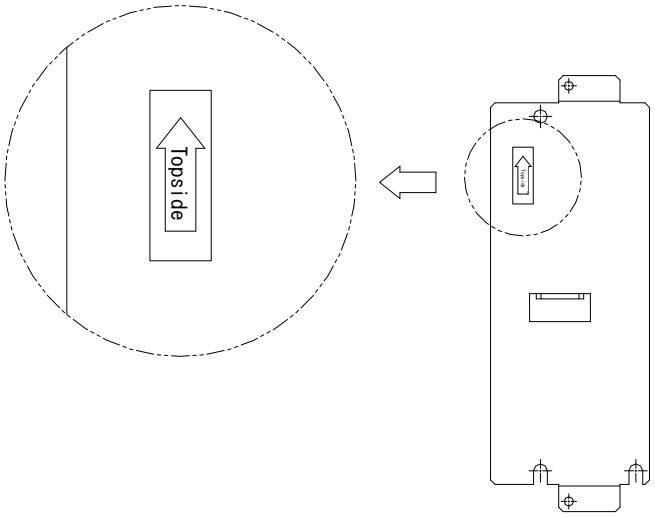


Use the cable tie (an accessory in the package) to tie up and fasten the cables in Renewal Kit.

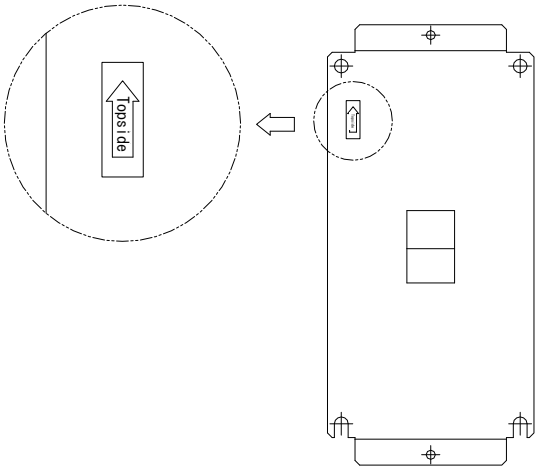
(8) Precautions for the Direction of the Base

Follow the instruction on the direction of the base to mount it.

Note Make sure to mount the base in the correct direction. Otherwise, you will not able to mount the servo amplifier correctly.



Example) The case of SC-J2SJ4KT1K



Example) The case of SC-J2SJ4KT3K

(9) Connecting the Currently Used Cables to Renewal Kit

1. Remove the terminal block cover.
2. There are cables connected to terminal blocks TE1 and TE2 of the existing servo amplifier. Remove them and connect them to the terminal block of Renewal Kit.
3. Attach the terminal block cover.

*** Use caution not to incorrectly connect the currently used cables.**

The amplifier will be broken if you make an incorrect connection.

Arrangement of the Terminals

TE1

(A schematic view seen from the front side of the amplifier)

L_1	L_2	L_3
U	V	W

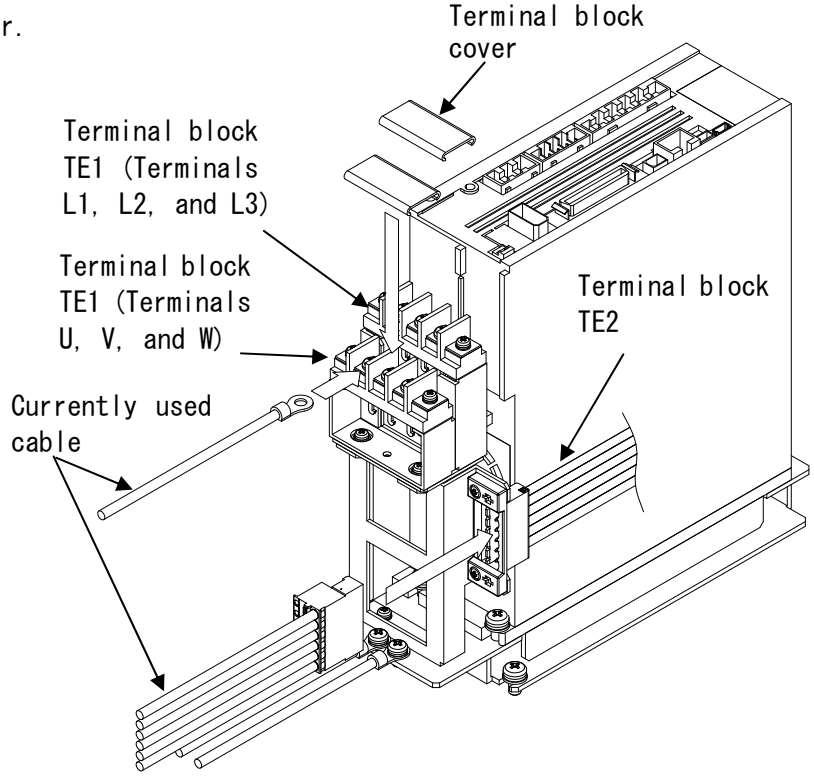
Terminal screw: M4

Tightening torque: 1.2 [N·m]

TE2

Front side of the amplifier←

D	C	P	L_{21}	L_{11}



(10) Connection between the replacing servo amplifier and the conversion cable

→ **See section 3.3.2, paragraph (7).**

(11) Connection between the conversion cable and the currently used cable

→ **See section 3.3.2, paragraph (8).**

(12) When the Built-in Regeneration Resistance Is Used

→ **See section 3.3.2, paragraph (9).**

(13) When the Regeneration Option Is Used

→ **See section 3.3.2, paragraph (10).**

3．3．4　Assembling SC-J2S(B) J4KT3K

（1）Preparing to Assemble Renewal Kit (1)

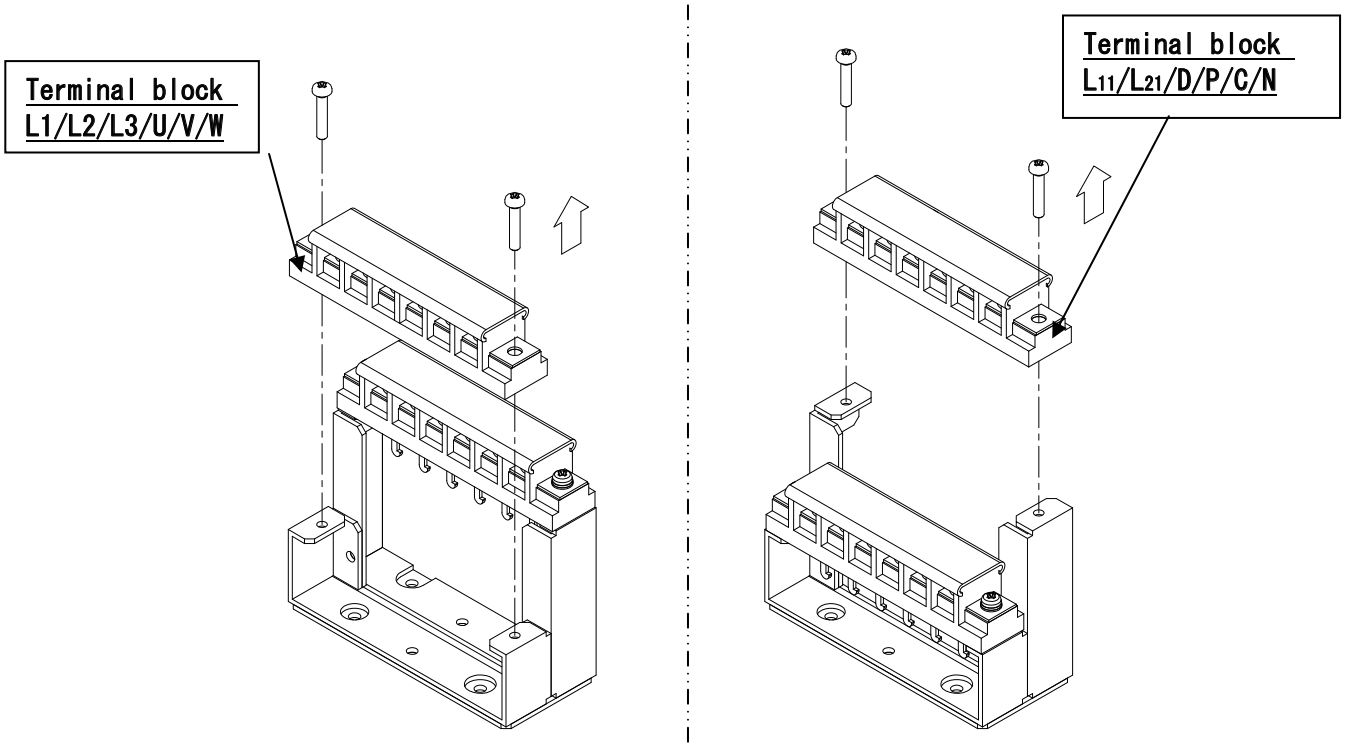
Remove the terminal block from the TE bracket, which was mounted at the time of shipment.

Note　The terminal block you need to remove is different depending on whether a battery is used or not.

Follow the instructions below to remove one.

① In the Case of an Incremental System
(Where Servo Amplifier Battery Option "MR-BAT6V1SET" Is Not Used)
・**Remove Terminal block L1/L2/L3/U/V/W only.**

② In the Case of an Absolute Position Detection System
(Where Servo Amplifier Battery Option "MR-BAT6V1SET" Is Used)
・**Remove Terminal block L_{11}/L_{21}/D/P/C/N only.**



① When a battery is not used
(in the case of an incremental system)

② When a battery is used
(in the case of an absolute position detection system)

Note
Cables and other components in Renewal Kit are not illustrated here for you to easily see how the components are assembled.

(2) Preparing to Assemble Renewal Kit (2)

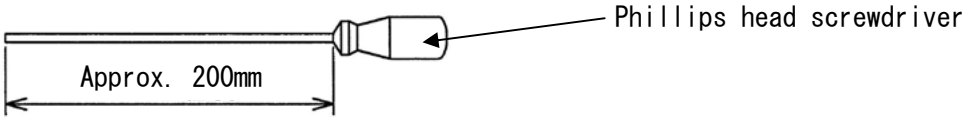
Remove the attachment, which was mounted at the time of shipment, to separate it into:

①the attachment (base), and

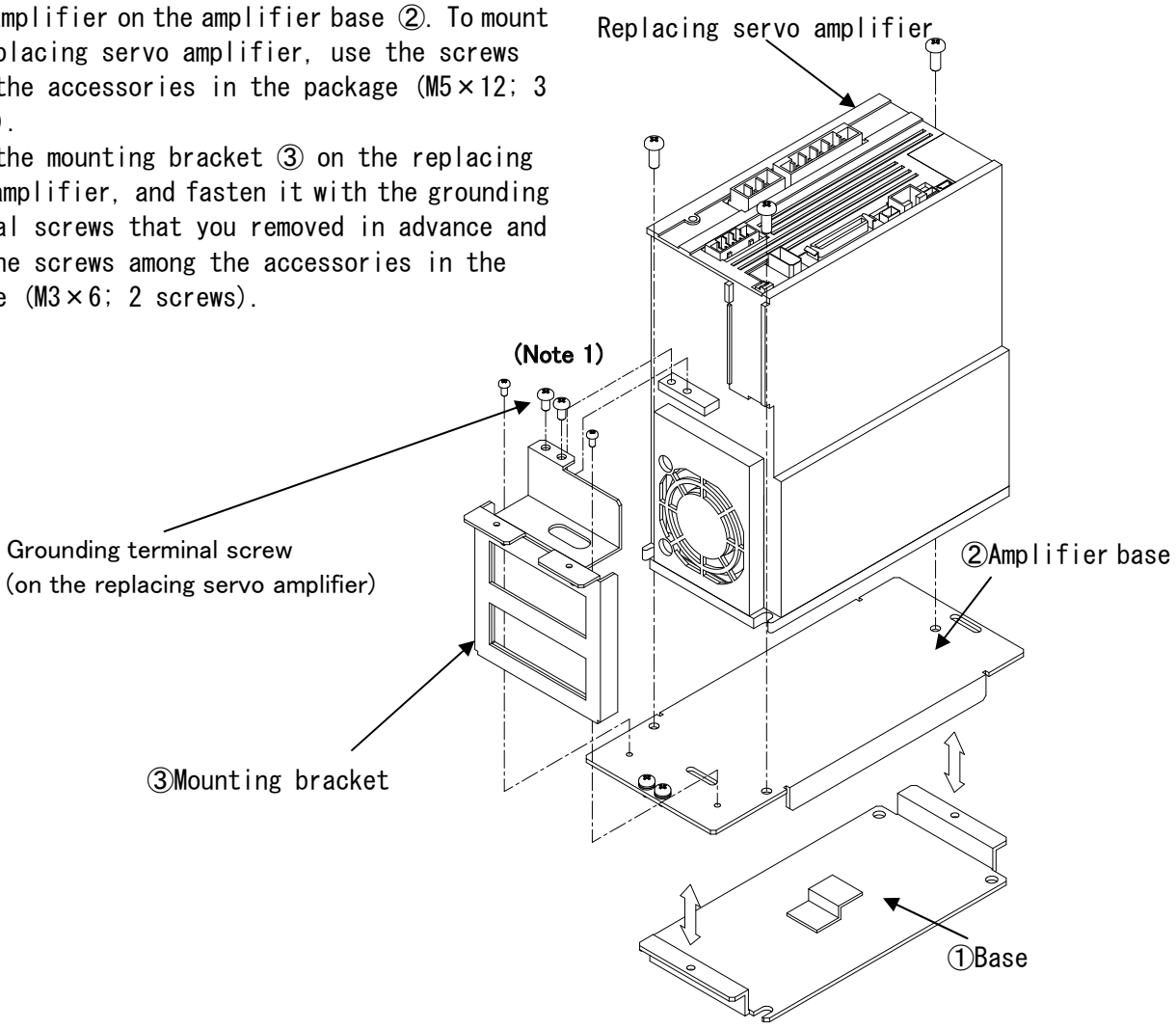
②the attachment (amplifier base).

(3) Mounting the Replacing Servo Amplifier on Renewal Kit

*** You have no extra space between the servo amplifier and Renewal Kit. To mount the servo amplifier, use such a Phillips head screwdriver as shown below.**

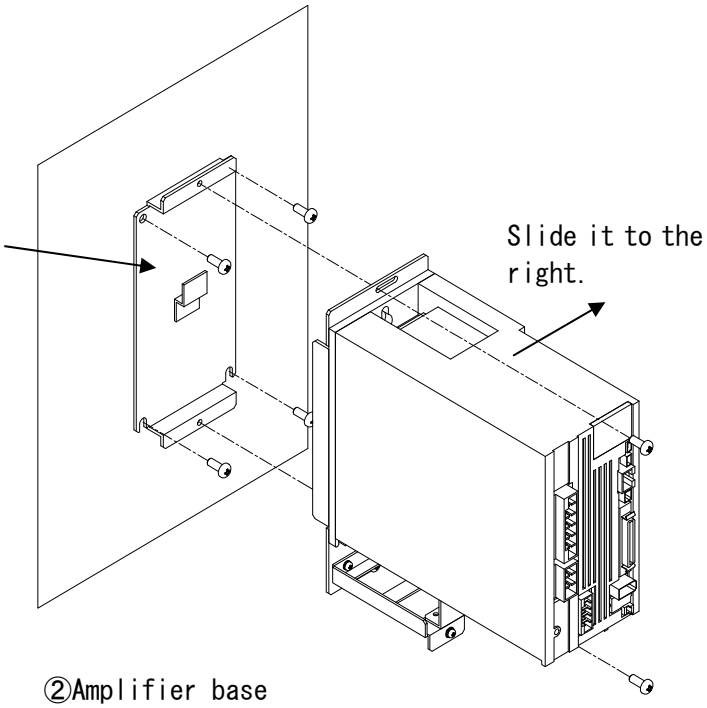


1. Remove the 2 grounding terminal screws on the replacing servo amplifier in advance.
   Note 1 Make sure to remove the grounding terminal screws in advance.
2. As shown in the drawing below, mount the replacing servo amplifier on the amplifier base ②. To mount the replacing servo amplifier, use the screws among the accessories in the package (M5×12; 3 screws).
3. Mount the mounting bracket ③ on the replacing servo amplifier, and fasten it with the grounding terminal screws that you removed in advance and with the screws among the accessories in the package (M3×6; 2 screws).



(4) Mounting Renewal Kit on the Control Panel

1. Use the currently used mounting opening and the screws to mount the base ①.
2. Attach the amplifier base ② (with the replacing servo amplifier mounted) on the base ①, slide it to the right side, and mount it there.



Note 1

Pay attention to the direction of the base ① while mounting it. If you mount it incorrectly, you will not be able to mount the servo amplifier correctly. For the details, see section 3.3.3, paragraph (8).

Note

Cables and other components in Renewal Kit are not illustrated here for you to easily see how the components are assembled.

(5) Mounting the TE Bracket

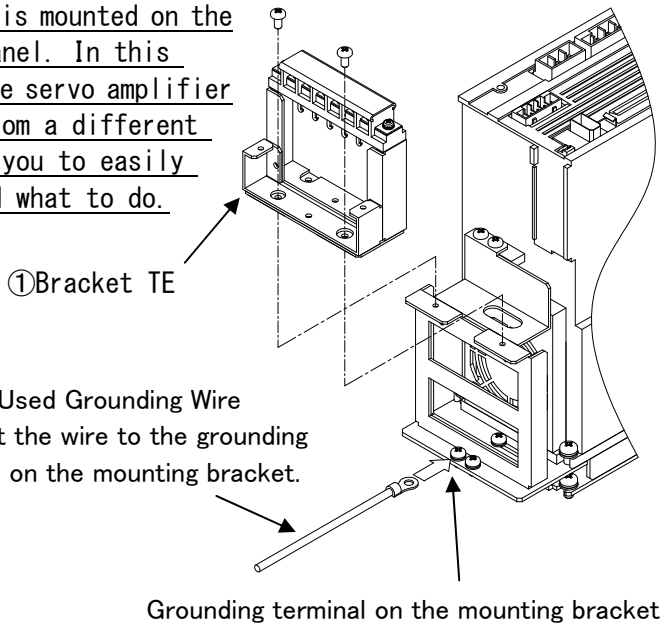
1. Connect the currently used grounding wire to the grounding contact of the mounting bracket.

Note 2 Make sure to connect the currently used grounding wire before the TE1 bracket is mounted. You will not be able to connect the grounding wire after the bracket is mounted.

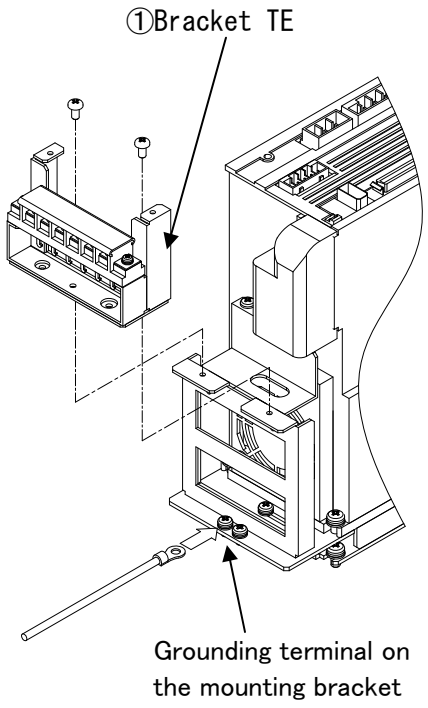
2. Use the screws (M3×6; 2 screws) that come as accessories in the package to mount, depending on whether a battery is used or not, the TE bracket ① that you in advice removed the terminal block from.

Note

Steps in paragraph (5) and the following steps are performed after the servo amplifier is mounted on the control panel. In this manual, the servo amplifier is seen from a different angle for you to easily understand what to do.



When a battery is not used
(in the case of an incremental system)



When a battery is used
(in the case of an absolute position detection system)

(6) Mounting the Terminal Block

You are going to mount the terminal block you removed in advance to the TE bracket ①.

＊ When mounting the bracket, pay attention to the direction of the terminal block.

If you try to mount it in an incorrect direction, you cannot mount it correctly. Be careful.

Arrangement of the Terminals

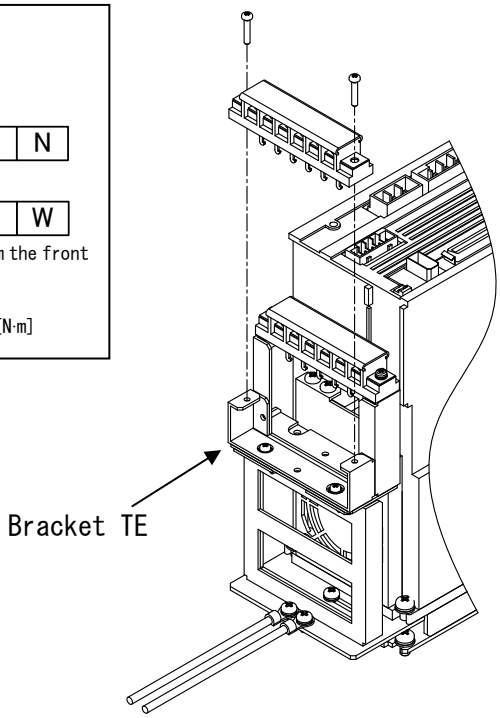
TE2

L_{11}	L_{21}	D	P	C	N

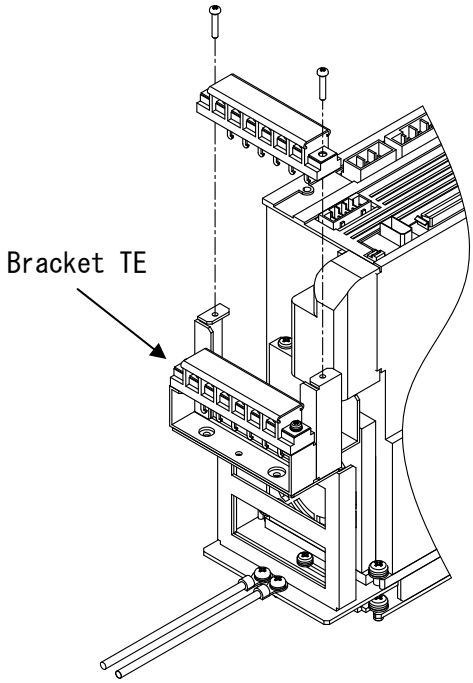
TE1

L_1	L_2	L_3	U	V	W

- A schematic view seen from the front side of the amplifier
- Terminal screw: M4
- Tightening torque: 1.2 [N·m]



When a battery is not used
(an incremental system)



When a battery is used
(absolute position detection system)

(7) Connecting the Cables to the Replacing Servo Amplifier

①Check the names of the cables that are to be housed in Renewal Kit. Check the abbreviations and short names of the connectors to the servo amplifier. Connect the cables and the connectors.

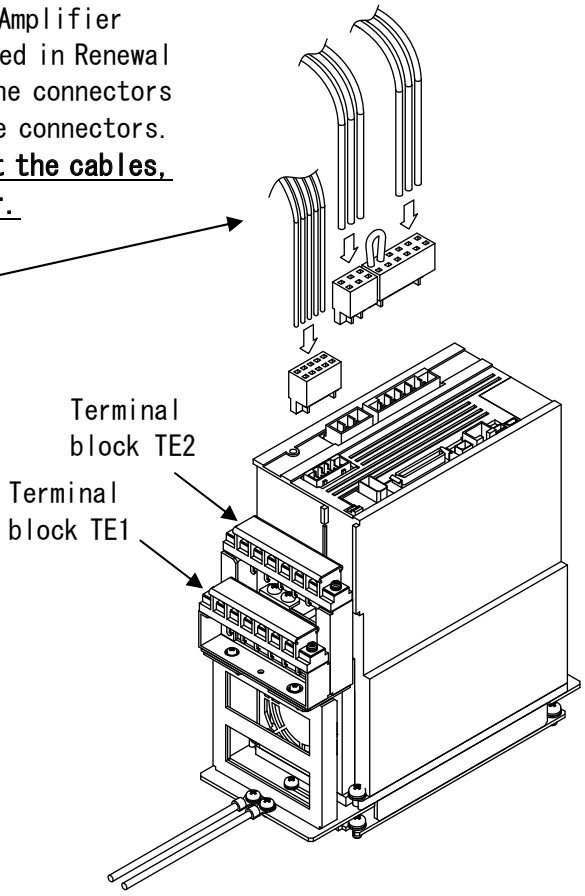
＊ In the case of terminal block TE1 or 2, connect the cables, starting from the left side of the amplifier.

①Cables to be housed in Renewal Kit

Use the cable connector that comes with the servo amplifier for wiring. For the details of how to connect the cables, see "Model MR-J4-_A(-RJ) SERVO AMPLIFIER INSTRUCTION MANUAL" issued by Mitsubishi Electric Corporation.

＊ For the connections of the built-in regeneration resistance, the regeneration option, and the power regeneration converter, see section 3.3.4, paragraphs (11), (12), and (13).

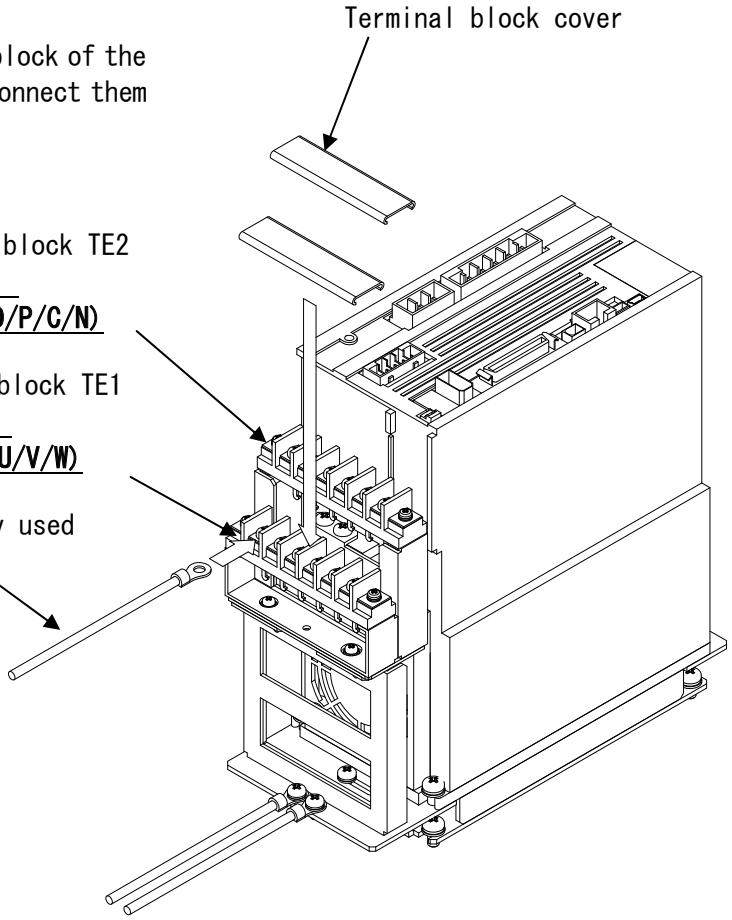
Use the cable tie (an accessory in the package) to tie up and fasten the cables in Renewal Kit.



(8) Connecting the Currently Used Cables to Renewal Kit

1. Remove the terminal block cover.
2. There are cables connected to the terminal block of the existing servo amplifier. Remove them and connect them to the terminal block of Renewal Kit.
3. Attach the terminal block cover.

*** Use caution not to incorrectly connect the currently used cables.**
The amplifier will be broken if you make an incorrect connection.



Arrangement of the Terminals

TE2

L_{11}	L_{21}	D	P	C	N

TE1

L_1	L_2	L_3	U	V	W

- A schematic view seen from the front side of the amplifier
- Terminal screw: M4
- Tightening torque: 1.2 [N·m]

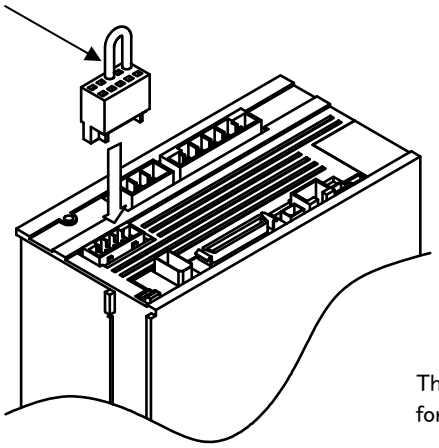
(9) Connection between the replacing servo amplifier and the conversion cable
→ See section 3.3.2, paragraph (7).

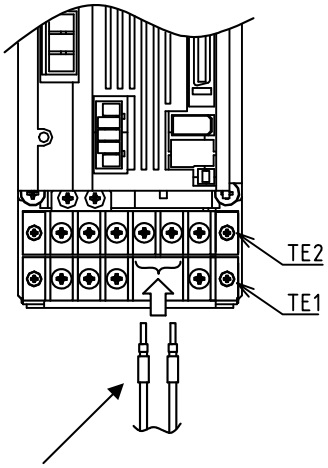
(10) Connection between the conversion cable and the currently used cable
→ See section 3.3.2, paragraph (8).

(11) When the Built-in Regeneration Resistance Is Used

1. Make sure that terminals P and D on the CNP2 connector of the replacing servo amplifier are short-circuited.
2. The cables on terminals P and C on the terminal block (TE2) of Renewal Kit are not used. Insulate them, for example, by bending them back to connect them to the terminal block of Renewal Kit.
   * For the details of how to connect the cables, see "Model MR-J4-_A(-RJ) SERVO AMPLIFIER INSTRUCTION MANUAL" issued by Mitsubishi Electric Corporation.

Make sure that terminals P and D on the CNP2 connector are short-circuited.





The cables on terminals P and C of Renewal Kit are not used. Insulate them, for example, by bending them back to the terminal block of Renewal Kit.

（１２）When the Regeneration Option Is Used

１．Remove the jumper between terminals P and D on the CNP2 connector of the replacing servo amplifier.

２．Connect the cables on terminals P and C on the terminal block (TE2) of Renewal Kit to the replacing servo amplifier.

３．Connect the regeneration option to terminals P and C on the terminal block (TE2) of Renewal Kit.

＊For the details of how to connect the cables of the regeneration option, see the technical materials on the MR-J4 servo amplifier issued by Mitsubishi Electric Corporation.

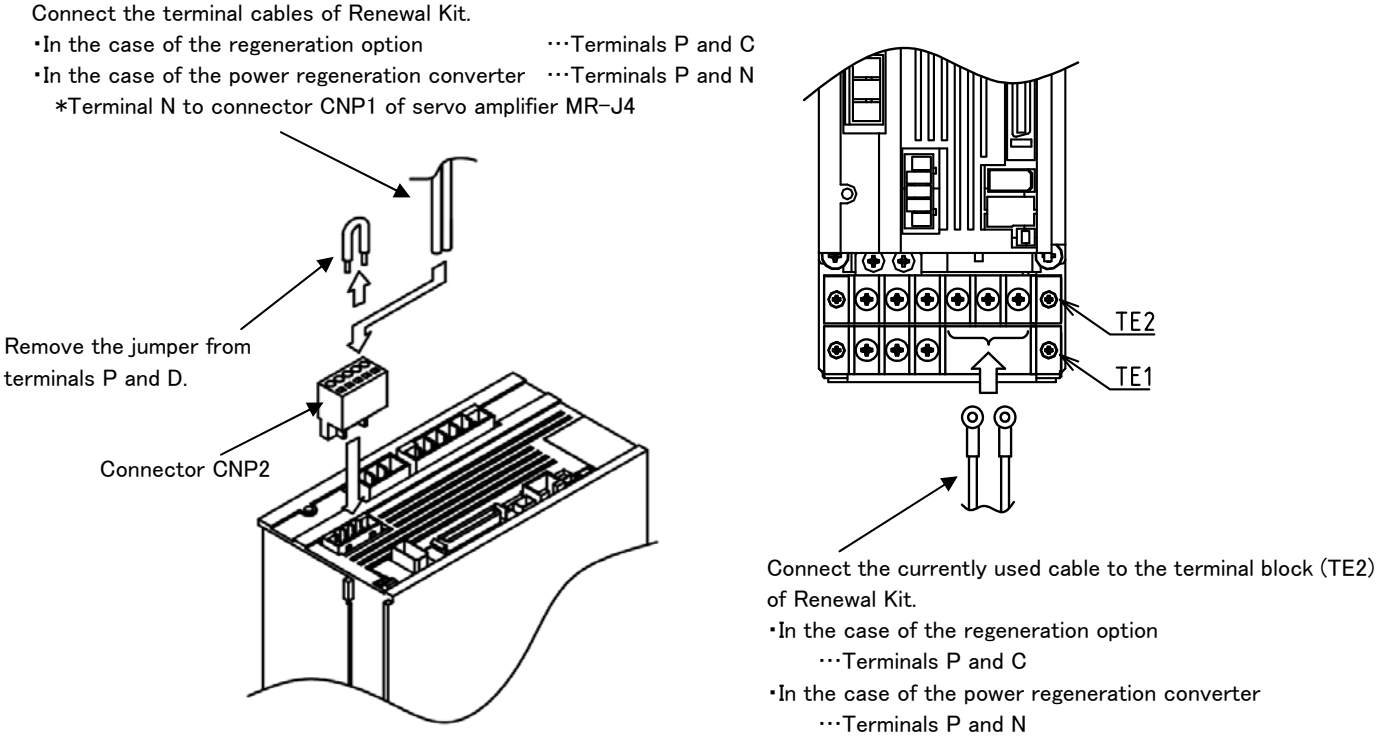
（１３）When the Power Regeneration Converter Is Used

１．Remove the jumper between terminals P and D on the CNP2 connector of the replacing servo amplifier.

２．Connect the cables on terminals P and N on the terminal block (TE2) of Renewal Kit to the replacing servo amplifier.

３．Connect the power regeneration converter to terminals P and N on the terminal block (TE2) of Renewal Kit.

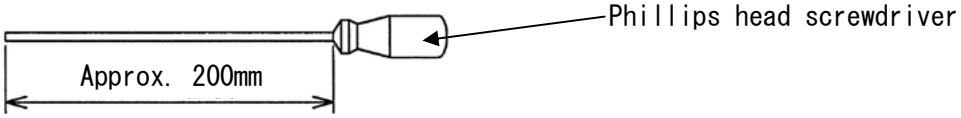
＊　For the details of how to connect the cables of the power regeneration converter, see the technical materials on the MR-J4 servo amplifier issued by Mitsubishi Electric Corporation.



３．３．５　Assembling SC-J2S(B) J4KT5K

（１）Mounting the Replacing Servo Amplifier on Renewal Kit

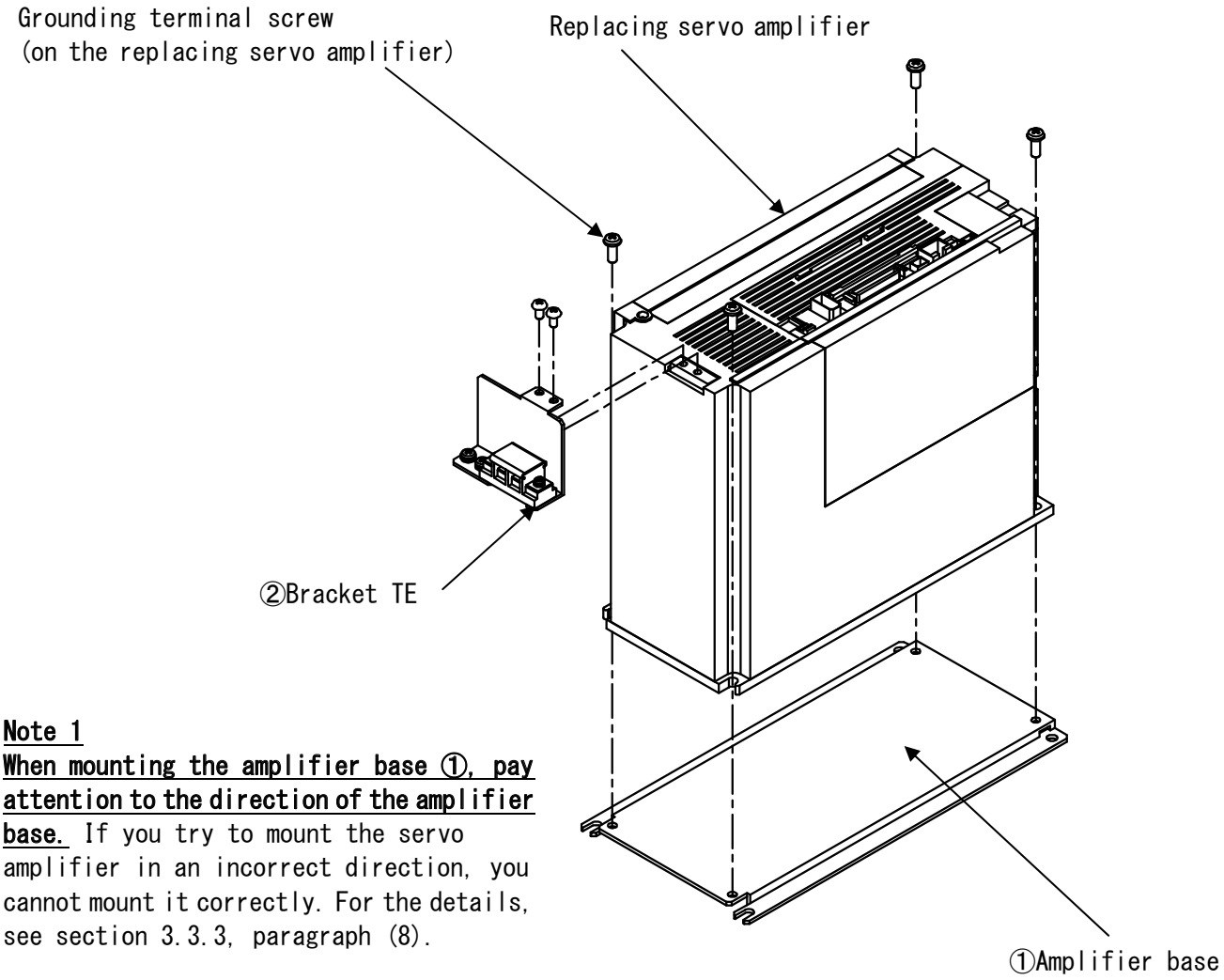
＊ You have no extra space between the servo amplifier and Renewal Kit. To mount the servo amplifier, use such a Phillips head screwdriver as shown below.



１．Remove the 2 grounding terminal screws on the replacing servo amplifier in advance.
＊ Make sure to remove the grounding terminal screws in advance.

２．As shown in the drawing below, mount the replacing servo amplifier on the amplifier base ①. To mount the replacing servo amplifier, use the screws among the accessories in the package (M5×12; 4 screws).

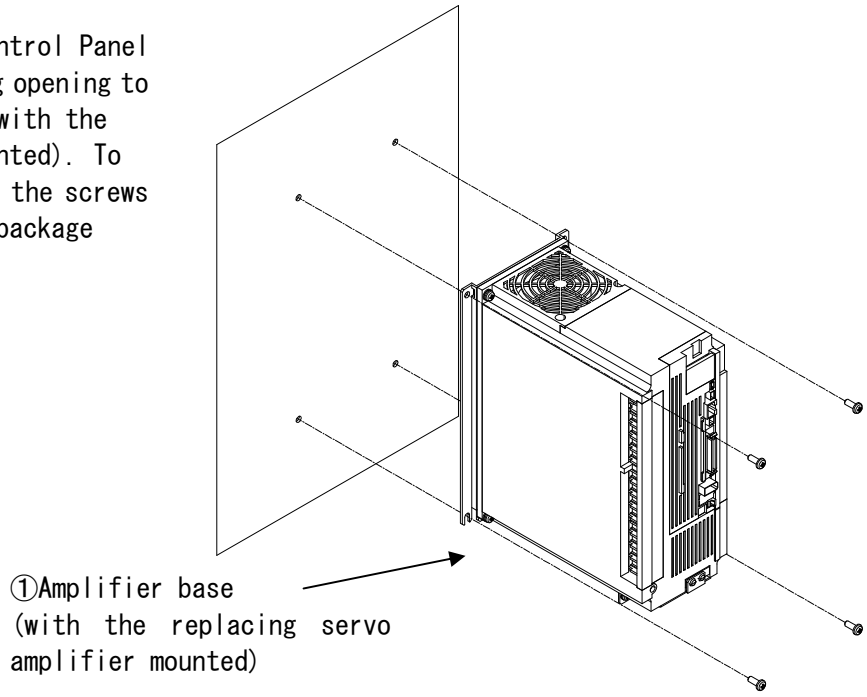
３．Mount the TE bracket ② on the replacing servo amplifier. Fasten it with the grounding terminal screws you removed in advance.



Note 1
When mounting the amplifier base ①, pay attention to the direction of the amplifier base. If you try to mount the servo amplifier in an incorrect direction, you cannot mount it correctly. For the details, see section 3.3.3, paragraph (8).

(2) Mounting Renewal Kit on the Control Panel

1. Use the currently used mounting opening to mount the amplifier base ① (with the replacing servo amplifier mounted). To fasten the amplifier base, use the screws among the accessories in the package (M5×12; 4 screws).



(3) Connecting the Cables to the Replacing Servo Amplifier

1. Check the names of the currently used cables connected to the terminal block of the currently used servo amplifier ①. Check the abbreviations and short names of the connectors to the replacing servo amplifier. Connect the cables and the connectors. (Signal names are different. See Fig. 1 to check the signal names before connecting the cables.)

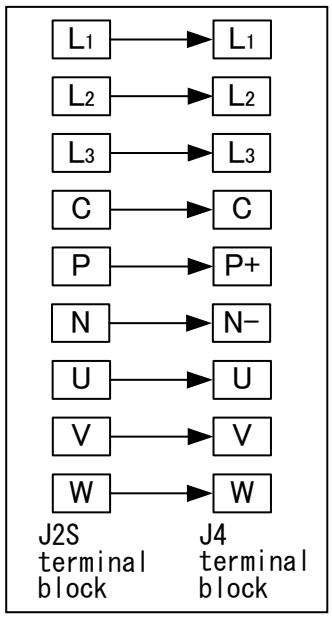
＊Connect the cables to terminal block TE, starting from the left side of the amplifier.

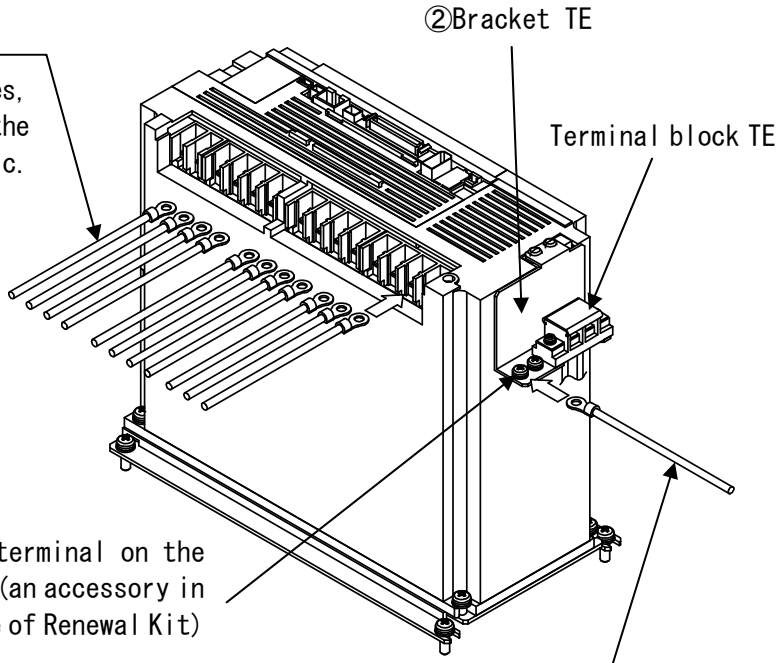
2. Connect the currently used grounding wire to the TE bracket ②. Connect the currently used grounding wire to the grounding terminal on the TE bracket.

①Currently used cable
For the details of how to connect the cables, see Fig. 1 and the technical materials on the MR-J4 amplifier issued by Mitsubishi Electric.

＊Use caution not to incorrectly connect the currently used cables.
If you make an incorrect connection, the amplifier may be broken.

Fig. 1 Destination of Connection

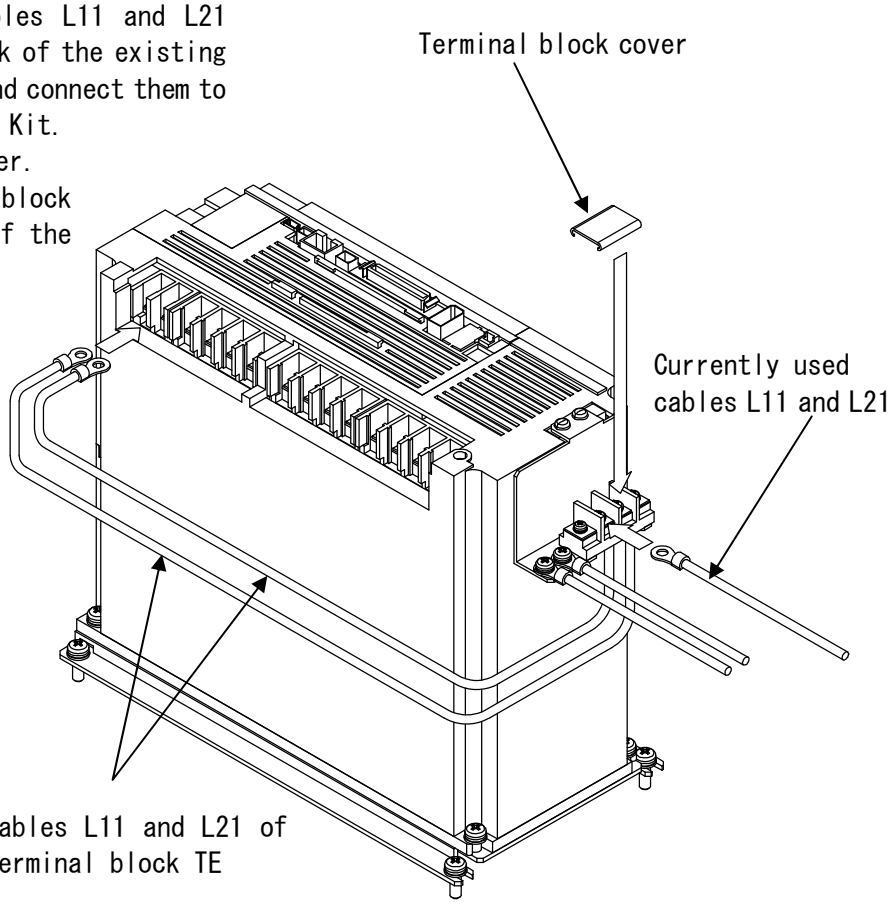




Note
Steps in paragraph (3) and the following steps are performed after the servo amplifier is mounted on the control panel. In this manual, the servo amplifier is seen from a different angle for you to easily understand what to do.

(4) Connecting Currently Used Cables L11 and L21

1. Remove the terminal block cover.
2. There are currently used cables L11 and L21 connected to the terminal block of the existing servo amplifier. Remove them and connect them to the terminal block of Renewal Kit.
3. Attach the terminal block cover.
4. Connect the cables on terminal block TE to terminals L11 and L21 of the replacing servo amplifier.



＊Use caution not to incorrectly connect the currently used cables.
The amplifier will be broken if you make an incorrect connection.

Arrangement of the Terminals

TE

L_{11}
L_{21}

- A schematic view seen from the front side of the amplifier
- Terminal screw: M4
- Tightening torque: 0.8 [N·m]

(5) Connection between the replacing servo amplifier and the conversion cable
→ See section 3.3.2, paragraph (7).

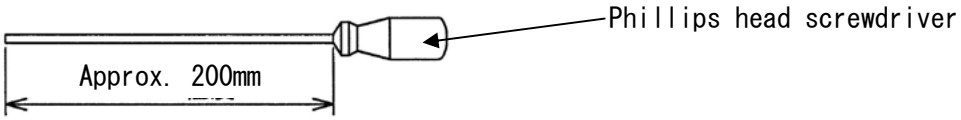
(6) Connection between the conversion cable and the currently used cable
→ See section 3.3.2, paragraph (8).

(7) When the Regeneration Option Is Used
＊ For the details of how to connect the cables of the regeneration option, see the technical materials on the MR-J4 servo amplifier issued by Mitsubishi Electric Corporation.

３．３．６　Assembling SC-J2S(B) J4KT7K

（１）Mounting the Replacing Servo Amplifier on Renewal Kit

＊ You have no extra space between the servo amplifier and Renewal Kit. To mount the servo amplifier, use such a Phillips head screwdriver as shown below.

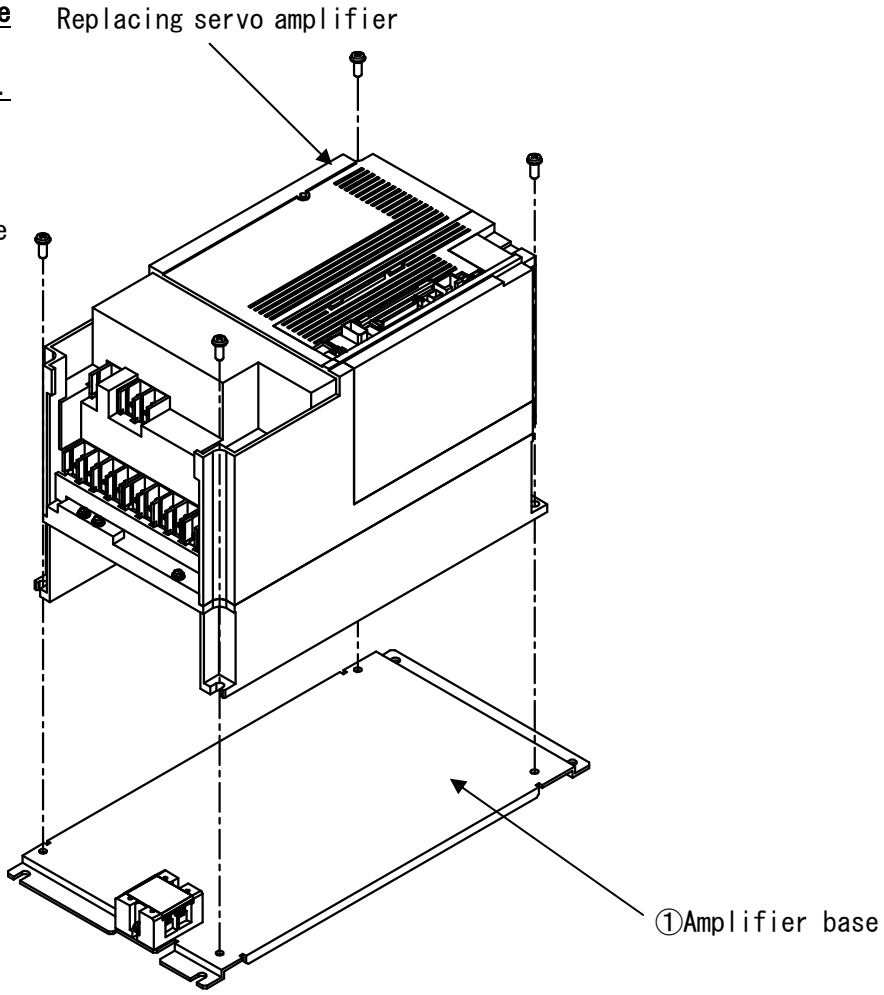


１．As shown in the drawing below, mount the replacing servo amplifier on the amplifier base ①. To mount the replacing servo amplifier, use the screws among the accessories in the package (M5×12; 4 screws).

Note 1

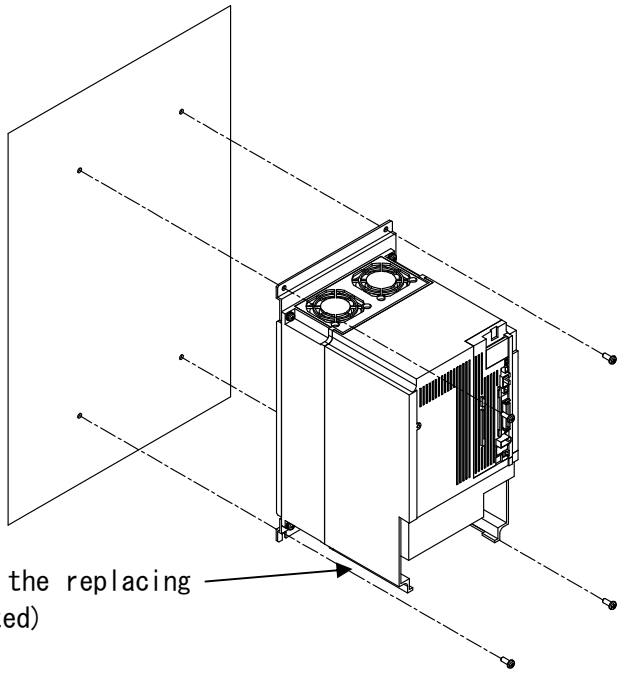
When mounting the amplifier base ①, pay attention to the direction of the amplifier base.

If you try to mount the servo amplifier in an incorrect direction, you cannot mount it correctly. For the details, see section 3.3.3, paragraph (8).



(2) Mounting Renewal Kit on the Control Panel

1. Use the currently used mounting opening to mount the amplifier base ① (with the replacing servo amplifier mounted). To fasten the amplifier base, use the screws among the accessories in the package (M5×12; 4 screws).



①Amplifier base (with the replacing servo amplifier mounted)

(3) Connecting the Cables to the Replacing Servo Amplifier

Check the names of the currently used cables connected to the terminal block of the currently used servo amplifier ①. Check the abbreviations and short names of the connectors to the replacing servo amplifier. Connect the cables and the connectors. (Signal names are different. See Fig. 1 to check the signal names before connecting the cables.)

①Currently used cable

For the details of how to connect the cables, see Fig. 1 and the technical materials on the MR-J4 amplifier issued by Mitsubishi Electric Corporation.

＊ Use caution not to incorrectly connect the currently used cables.

If you make an incorrect connection, the amplifier may be broken.

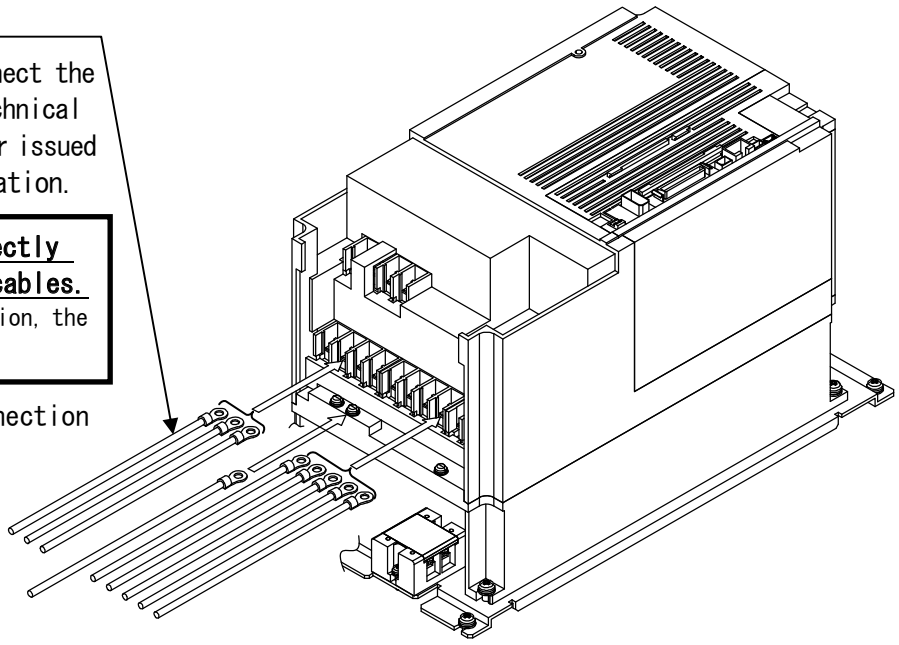
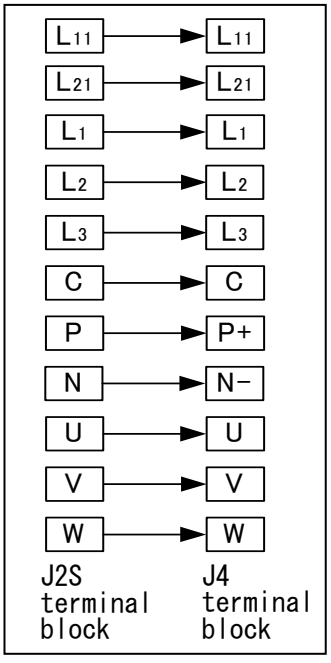


Fig. 1 Destination of Connection



Note

Steps in paragraph (3) and the following steps are performed after the servo amplifier is mounted on the control panel. In this manual, the servo amplifier is seen from a different angle for you to easily understand what to do.

＊1. If the cable on the currently used N terminal is too short, see paragraph (4).

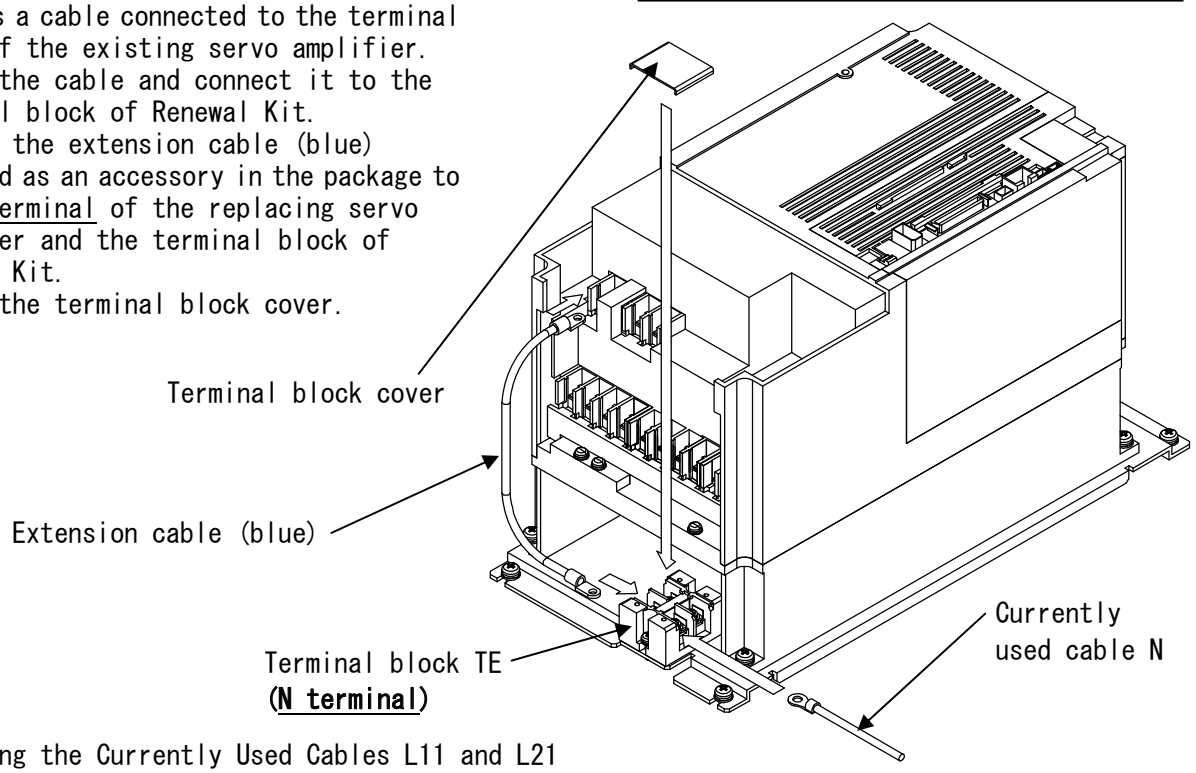
＊2. If the cables on the currently used L11 and L21 terminals are too short, see paragraph (5).

(4) Connecting the Currently Used Cable on the N Terminal

* If you do not use the N terminal, you do not need to follow the assembly instructions in this paragraph.

1. Remove the terminal block cover.
2. There is a cable connected to the terminal block of the existing servo amplifier. Remove the cable and connect it to the terminal block of Renewal Kit.
3. Connect the extension cable (blue) provided as an accessory in the package to the N terminal of the replacing servo amplifier and the terminal block of Renewal Kit.
4. Attach the terminal block cover.

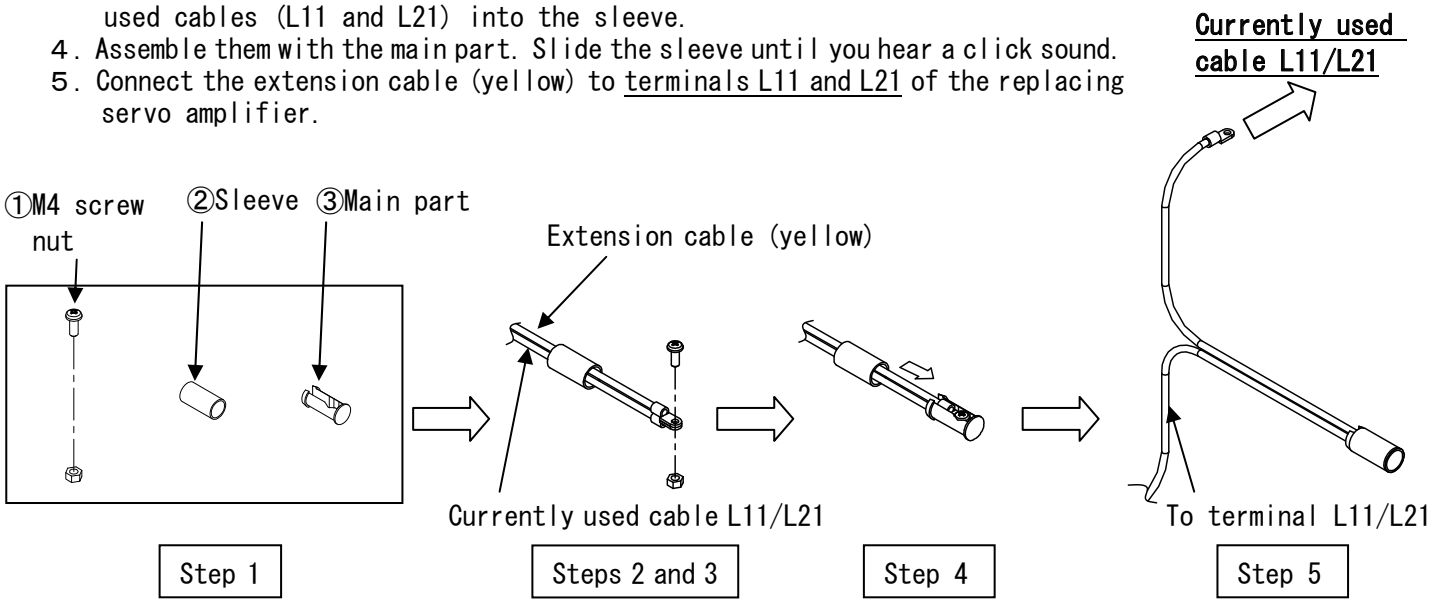
*** Use caution not to incorrectly connect the currently used cables.**
The amplifier will be broken if you make an incorrect connection.



(5) Connecting the Currently Used Cables L11 and L21

* Follow this assembly procedure only when the currently used cables L11 and L21 are too short to directly reach the terminal of the replacing servo amplifier.

1. Separate the insulation cap provided as an accessory in the package into the M4 screw and nut ①, the sleeve ②, and the main part ③.
2. Connect the extension cable (yellow) provided as an accessory in the package to the currently used cables (L11 and L21) with the M4 screw and nut.
3. Insert the extension cable (yellow) provided as an accessory in the package and the currently used cables (L11 and L21) into the sleeve.
4. Assemble them with the main part. Slide the sleeve until you hear a click sound.
5. Connect the extension cable (yellow) to terminals L11 and L21 of the replacing servo amplifier.



(6) Connecting between the replacing servo amplifier and the conversion cable
→ See section 3.3.2, paragraph (7).

(7) Connecting between the conversion cable and the currently used cable
→ See section 3.3.2, paragraph (8).

(8) When the Regeneration Option Is Used

* For the details of how to connect the cables of the regeneration option, see the technical materials on the MR-J4 servo amplifier issued by Mitsubishi Electric Corporation.

3．3．7　Assembling SC-J2S(B) J4KT15K, 22K

（1）Preparing to Assemble Renewal Kit (2)

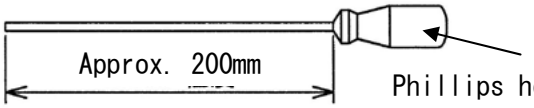
Remove the attachment, which was mounted at the time of shipment, to separate it into:

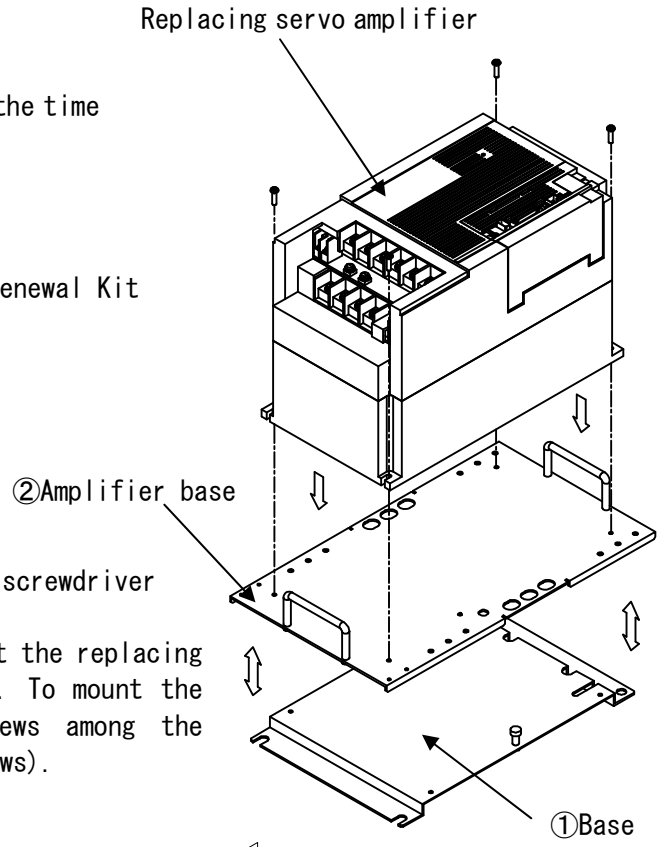
①the base, and

②the amplifier base.

（2）Mounting the Replacing Servo Amplifier on Renewal Kit

＊ You have no extra space between the servo amplifier and Renewal Kit. To mount the servo amplifier, use such a Phillips head screwdriver as shown below.





1．As shown in the drawing on the right, mount the replacing servo amplifier on the amplifier base ②. To mount the replacing servo amplifier, use the screws among the accessories in the package (M5×12; 4 screws).

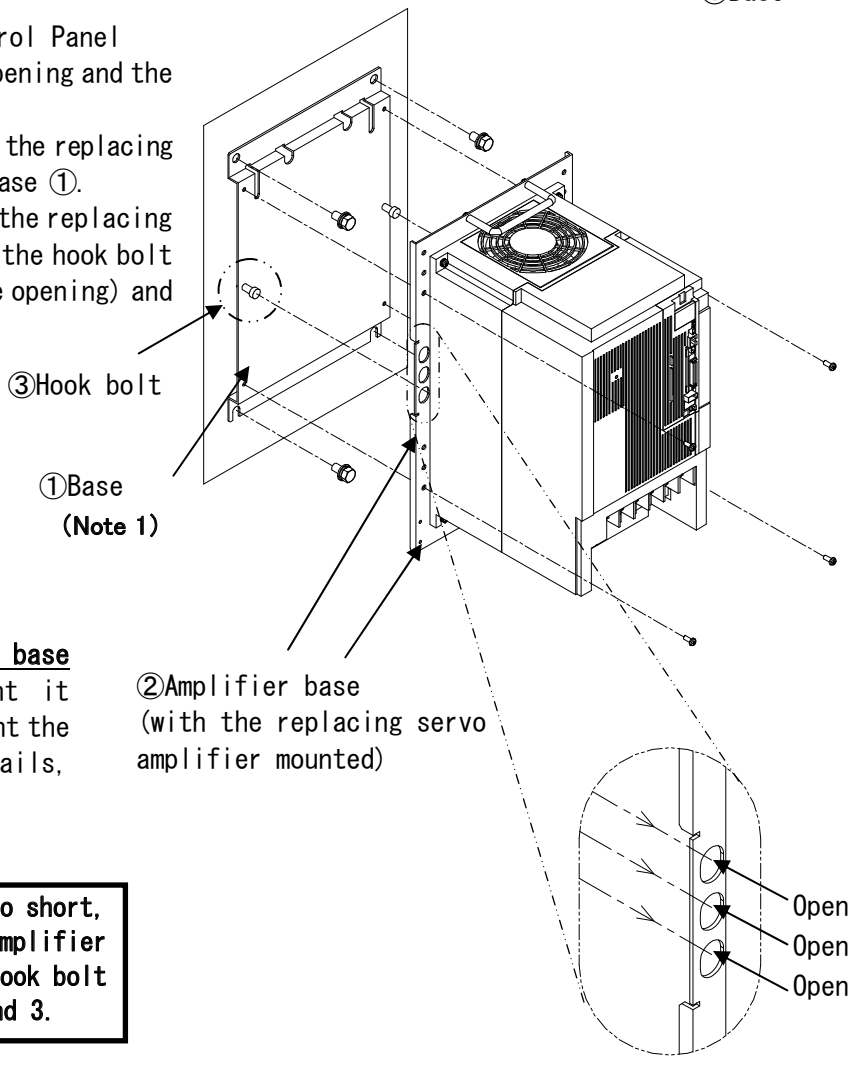
（3）Mounting Renewal Kit on the Control Panel

1．Use the currently used mounting opening and the screws to mount the base ①.

2．Attach the amplifier base ② (with the replacing servo amplifier mounted) on the base ①.

＊ To mount the amplifier base (with the replacing servo amplifier mounted), insert the hook bolt ③ into the catch opening ④ (one opening) and mount the amplifier safely.

＊ The servo amplifier is heavy. Use caution when you mount it.



Note1

Pay attention to the direction of the base ① while mounting it. If you mount it incorrectly, you will not be able to mount the servo amplifier correctly. For the details, see section 3.3.3, paragraph (8).

＊ If the currently used cables are too short, you can mount the replacing servo amplifier up to 30mm lower by inserting the hook bolt into one of catch openings 1, 2, and 3.

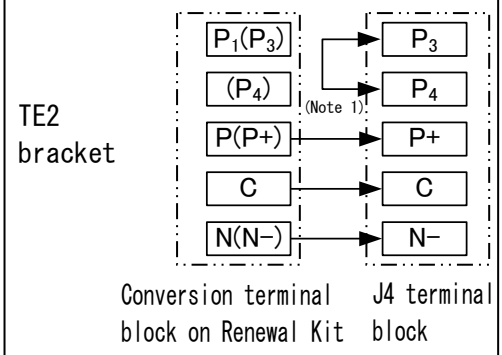
(4) Mounting TE Bracket 2

1. Check the names of the cables that are to be housed in Renewal Kit ①. Check the abbreviations and short names of the connectors to the servo amplifier. Connect the cables and the connectors. (Signal names are different. See Fig. 1 to check the signal names before connecting the cables.)
2. Use the screws provided as accessories in the package (M4×8; 4 screws) to mount the TE bracket 2 ③ on the amplifier base ② (with the replacing servo amplifier mounted).

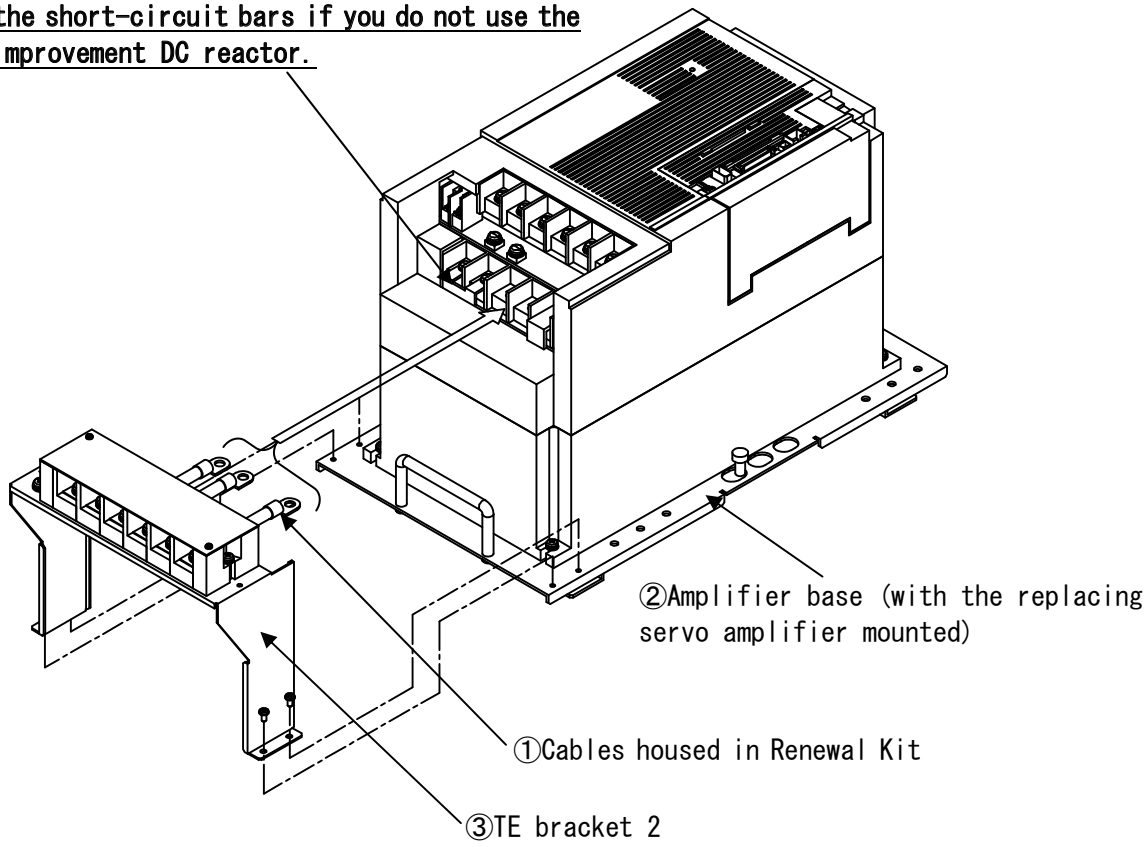
*** When you are going to use the power-factor improvement DC reactor, go on to paragraph (6).**
When you are not going to use the power-factor improvement DC reactor, go on to paragraph (5).

Steps in paragraph (4) and the following step are performed after the servo amplifier is mounted on the control panel. In this manual, the servo amplifier is seen from a different angle for you to easily understand what to do.

Fig. 1 Destination of Connection



Note 1
Short-circuit bar (on the replacing servo amplifier)
Do not remove the short-circuit bars if you do not use the power-factor improvement DC reactor.



(5) Connecting Currently Used Cables (When the Power-factor Improvement DC Reactor Is Not Used)

1. Remove the terminal block cover ①. There are cables connected to the currently used servo amplifier. Remove them and connect them to the terminal block of Renewal Kit. (Signal names are different. See Fig. 1 to check the signal names before connecting the cables.)

＊ If you are going to use the power-factor improvement DC reactor, you need to follow different steps to make connections. See paragraph (6).

＊ Use caution not to incorrectly connect the currently used cables.
The amplifier will be broken if you make an incorrect connection.

Arrangement of the Terminals
The terminal block on TE bracket 2

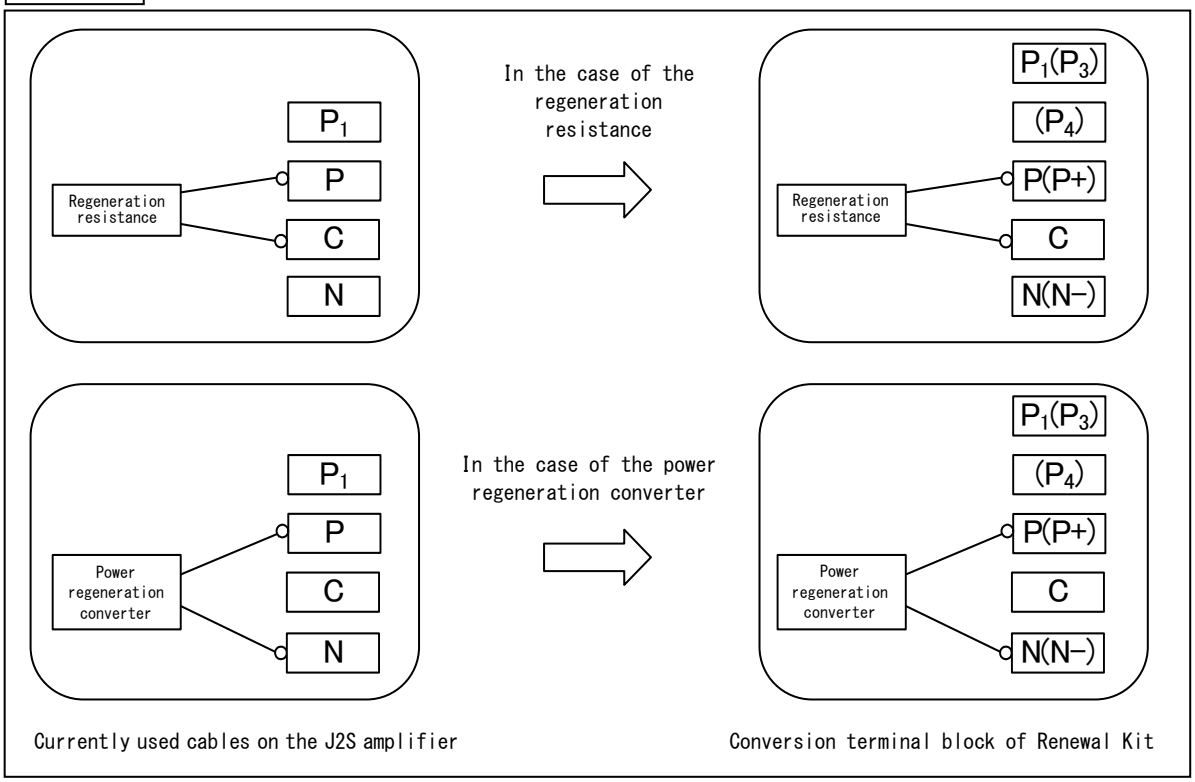
⊕	$P_1(P_3)$	(P_4)	P(P+)	C		N(N−)

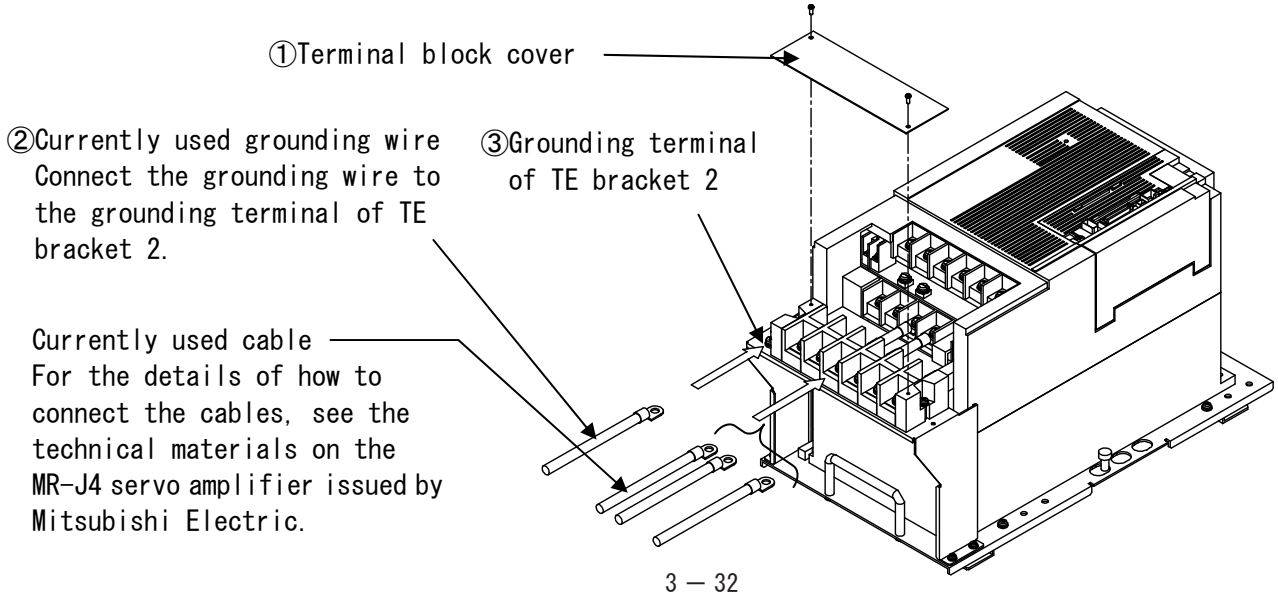
・A schematic view seen from the front side of the amplifier
・Terminal screw: M6
・Tightening torque: 2.5 [N·m]

2. Attach the terminal block cover ① on the terminal block of Renewal Kit.
3. Connect the currently used grounding wire ② to the grounding terminal on TE bracket 2 ③.

To paragraph (8)

Fig. 1 Destination of Connection



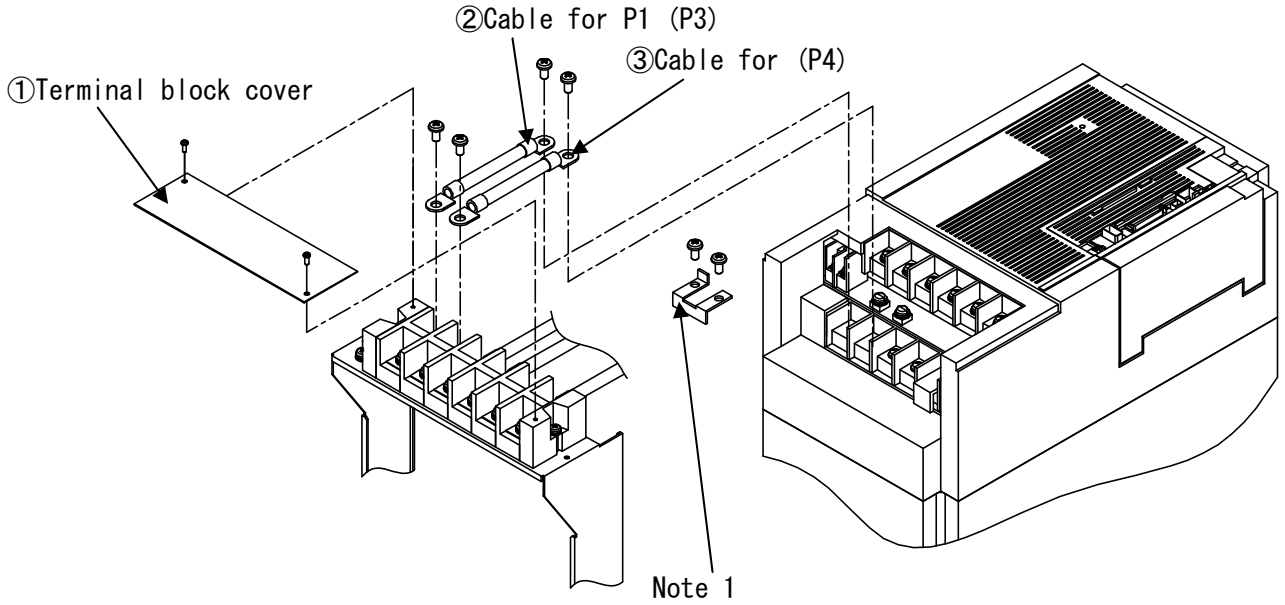


(6) When the Power Regeneration Converter Is Used

＊ If you do not use the DC reactor, go on to paragraph (8).

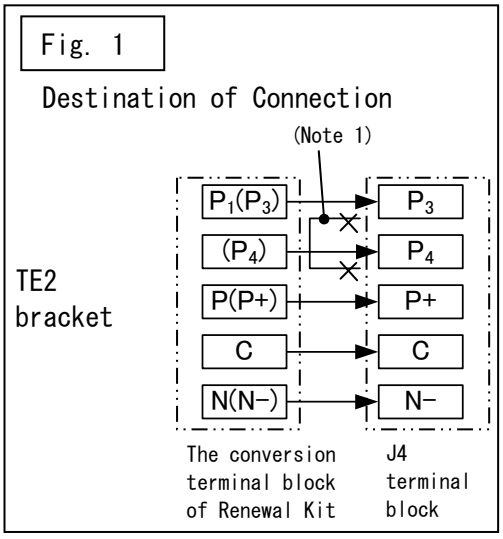
1. Remove the short-circuit bar (Note 1) on the replacing servo amplifier.
(You do not need the short-circuit bar you have removed. Never try to use them. Using them may break the DC reactor.)

2. Remove the terminal block cover ①. Connect the cables provided as accessories in the package (one for P1 (P3) terminal ②; one for (P4) terminal ③) to the terminal block of TE bracket 2.



3. Check the names of the cables for P1 (P3) ② and (P4) ③. Check the abbreviations and short names of the connectors to the replacing servo amplifier. Connect the cables and the connectors. (Signal names are different. See Fig. 1 to check the signal names before connecting the cables.)

Fig. 1



(7) Connecting Currently Used Cables (When the Power-factor Improvement DC Reactor Is Used)

1. There are cables connected to the currently used servo amplifier. Remove them and connect them to the terminal block of Renewal Kit. (Signal names are different. See Fig. 1 to check the signal names before connecting the cables.)
2. Attach the terminal block cover ① on the terminal block of Renewal Kit.
3. Connect the currently used grounding wire ② to the grounding terminal on TE bracket 2 ③.

To paragraph (8)

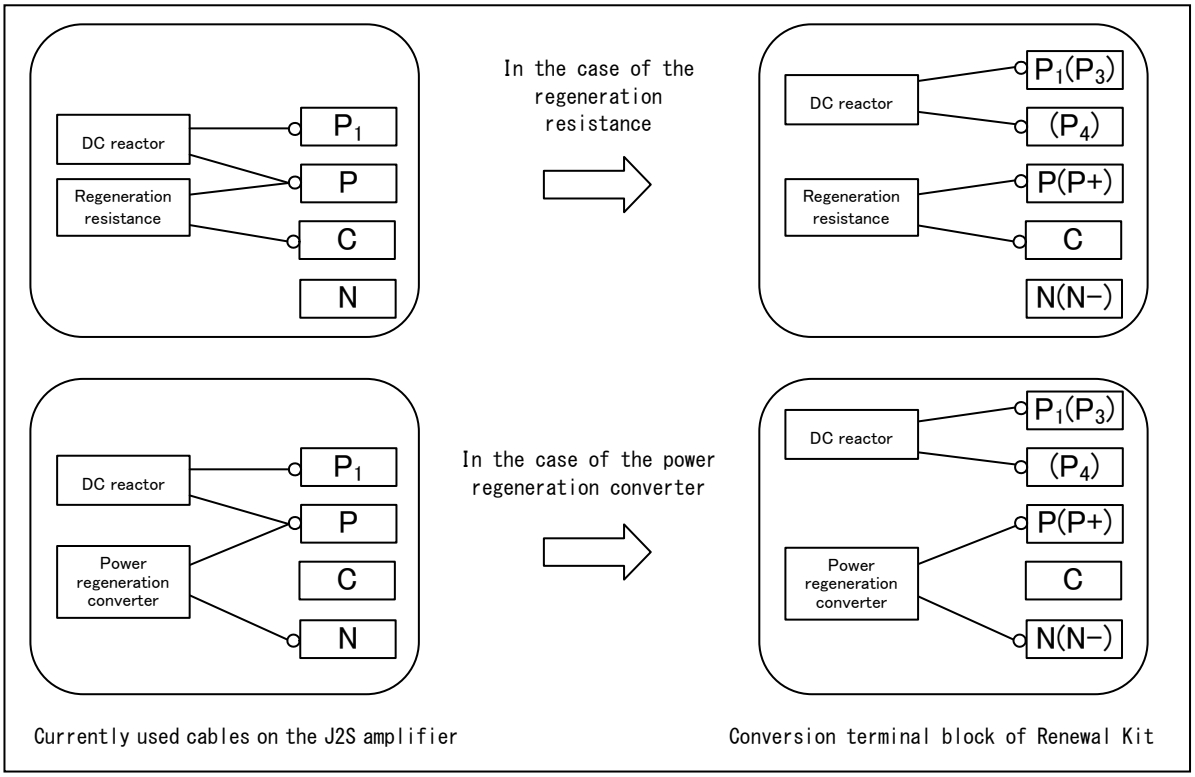
Arrangement of the Terminals

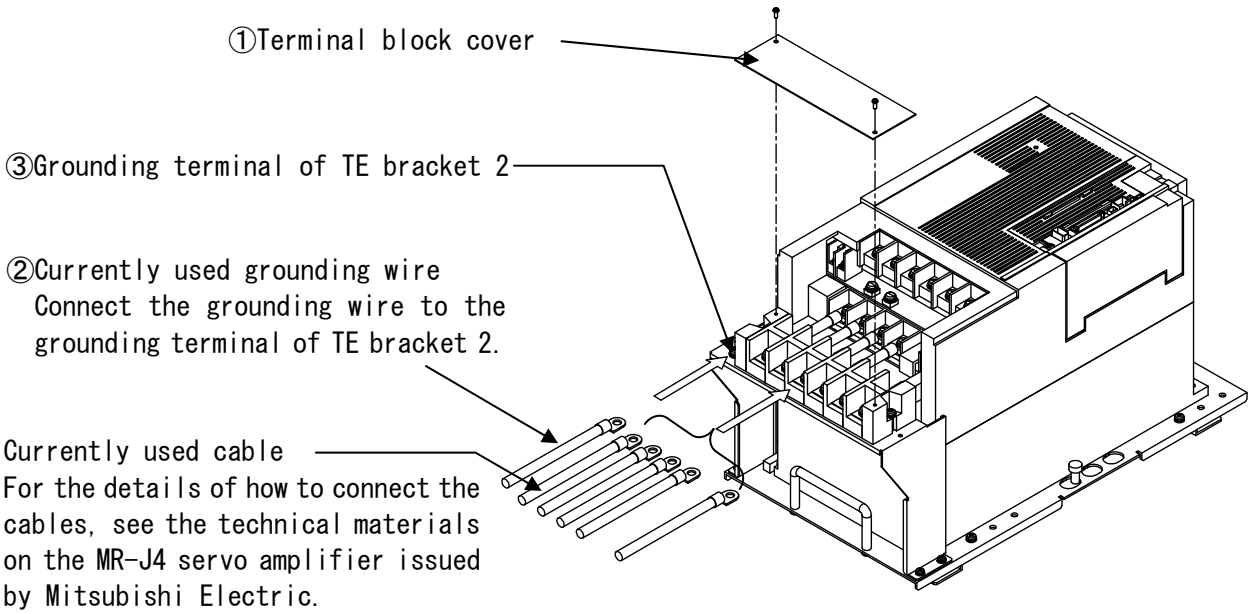
The terminal block on TE bracket 2

⊕	$P_1(P_3)$	(P_4)	P(P+)	C		N(N−)

・A schematic view seen from the front side of the amplifier
・Terminal screw: M6
・Tightening torque: 2.5 [N·m]

Fig. 1 Destination of Connection



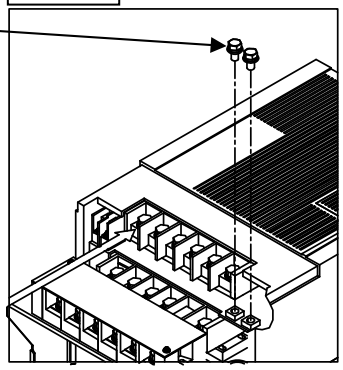


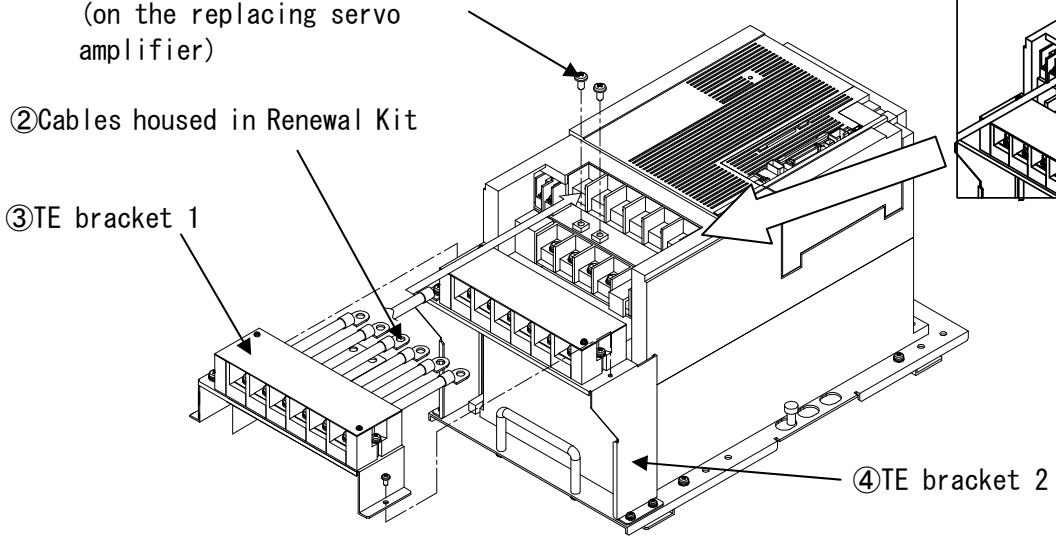
(8) Mounting TE Bracket 1

1. Remove the 2 grounding terminal screws ① on the replacing servo amplifier.
   * In the case of 22K, the locations of the grounding terminal screws ① are different. See Fig. 1.
2. Check the names of the cables that are to be housed in Renewal Kit ②. Check the abbreviations and short names of the connectors in the upper bank to the servo amplifier. Connect the cables and the connectors.
3. Use the screws provided as accessories in the package (M4×8; 2 screws) to mount the TE bracket 1 ③ on the TE bracket 2 ④.

*** Use caution not to incorrectly connect the currently used cables.**
If you make an incorrect connection, the amplifier may be broken.

Fig. 1 In the case of 22K





(9) Connecting Currently Used Cables

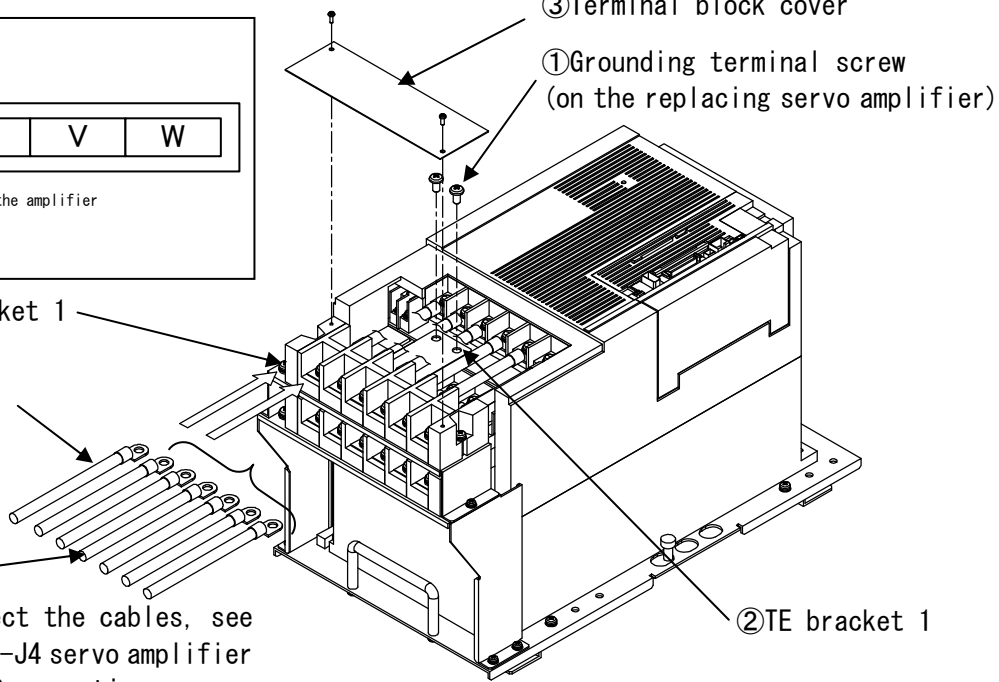
1. Use the grounding terminal screws ① that you removed to mount TE bracket 1 ②.
2. Remove the terminal block cover ③. There are cables connected to the existing servo amplifier. Remove them and connect them to the terminal block of Renewal Kit.
3. Attach the terminal block cover ③ on the terminal block of Renewal Kit.
4. Connect the currently used grounding wire ④ on the grounding terminal on TE bracket 1 ⑤.

*** Use caution not to incorrectly connect the currently used cables.**
If you make an incorrect connection, the amplifier may be broken.

Arrangement of the Terminals
The terminal block on TE bracket 1

⏚	L1	L2	L3	U	V	W

・A schematic view seen from the front side of the amplifier
・Terminal screw: M6
・Tightening torque: 2.5 [N·m]

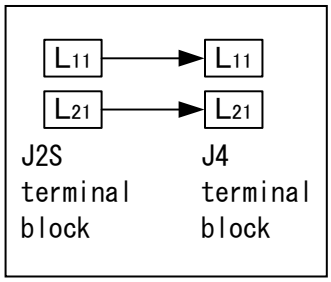


For the details of how to connect the cables, see the technical materials on the MR-J4 servo amplifier issued by Mitsubishi Electric Corporation.

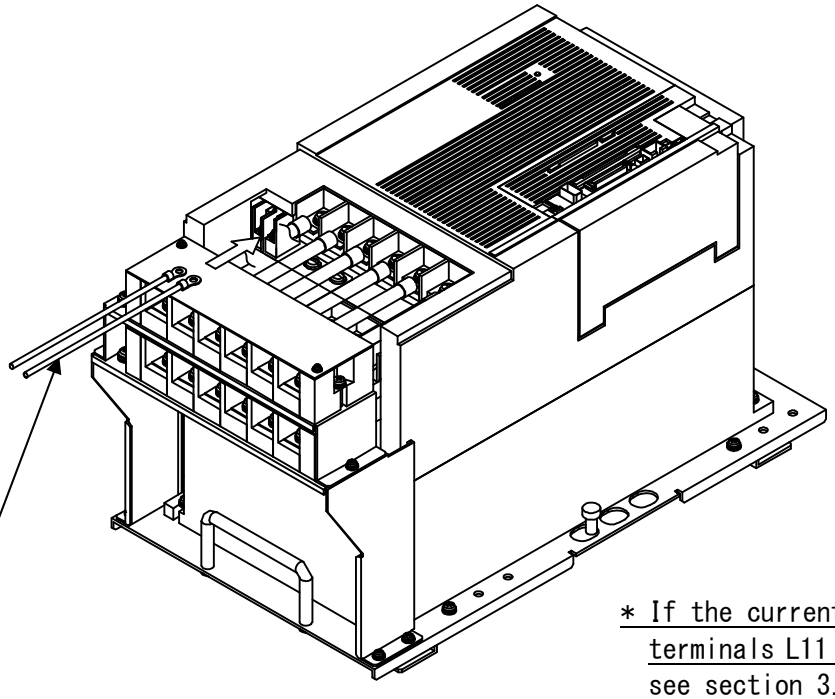
(１０) Connecting Currently Used Cables L11 and L21

１. There are currently used cables L11 and L21 connected to the terminal block on the existing servo amplifier ①. Check the names of the currently used cables. Check the abbreviations and short names of the connectors to the replacing servo amplifier. Connect the cables and the connectors. (See Fig. 1 to make sure which terminals you must connect.)

Fig. 1 Destination of Connection



＊ Use caution not to incorrectly connect the currently used cables.
If you make an incorrect connection, the amplifier may be broken.



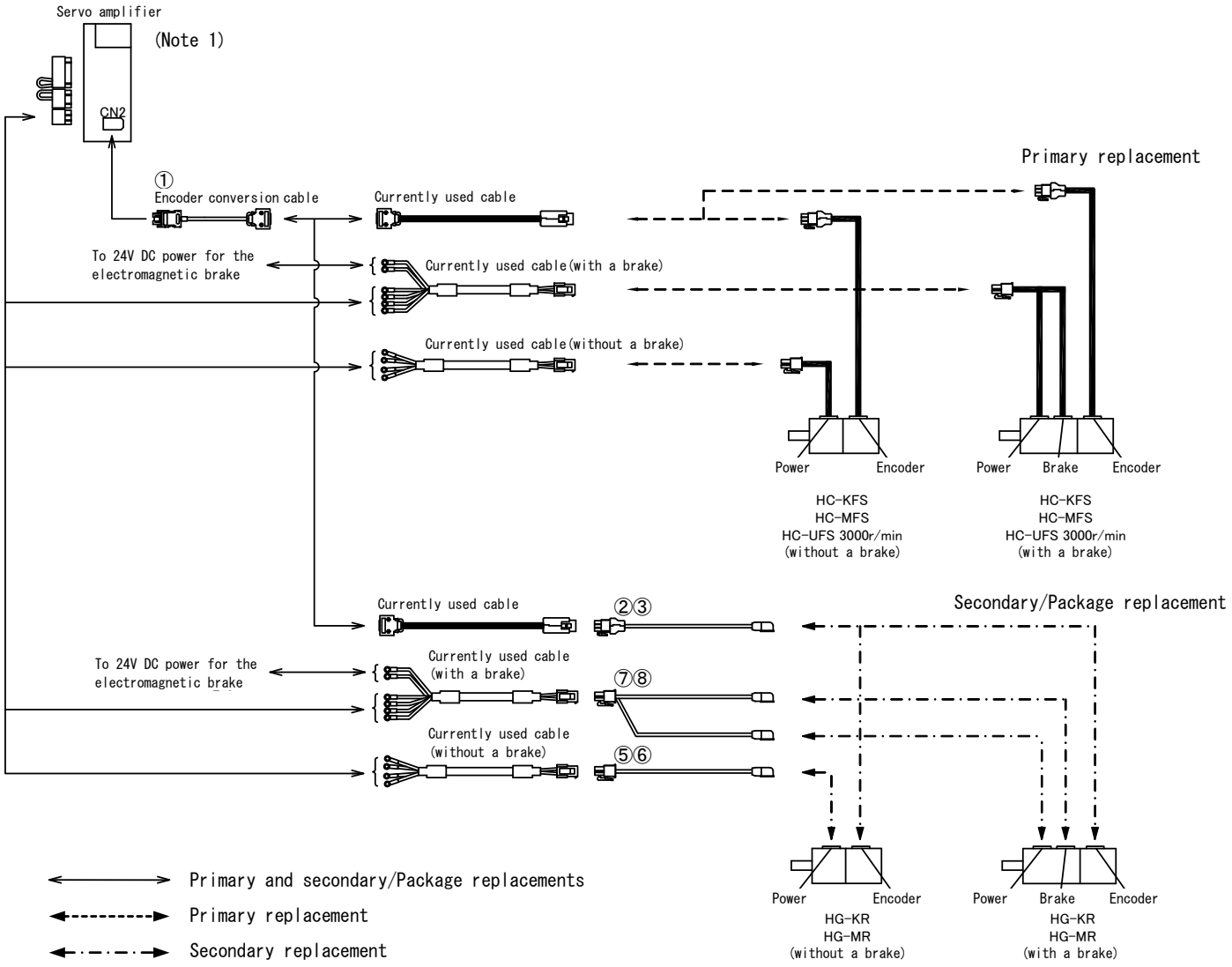
＊ If the currently used cables on terminals L11 and L21 are too short, see section 3.3.6, paragraph (5).

①Currently Used Cables L11 and L21
For the details of how to connect the cables, see Fig. 1 and the technical materials on the MR-J4 servo amplifier issued by Mitsubishi Electric.

3.4 Combination of Cables

See section 2.3 to select a combination cables. See section 2.5 for their connections.

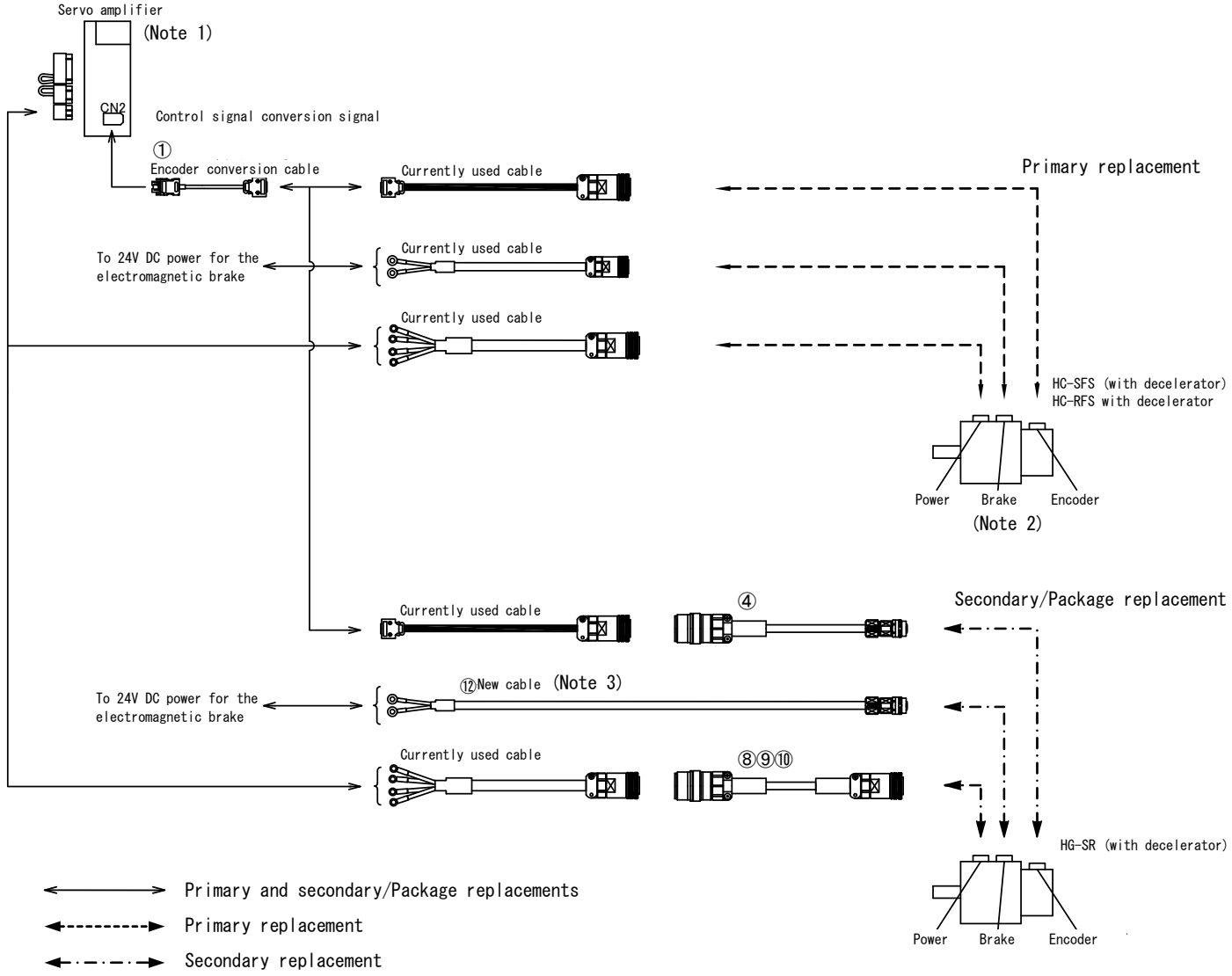
(1) In the Case of the HC-KFS, MFS, and UFS 3000 r/min Motors



Note 1
For the cables between the servo amplifier and the control panel/sequencer, see the connection diagram in section 2.5.

For the types of the cables indicated with the numbers, see page 3-43.

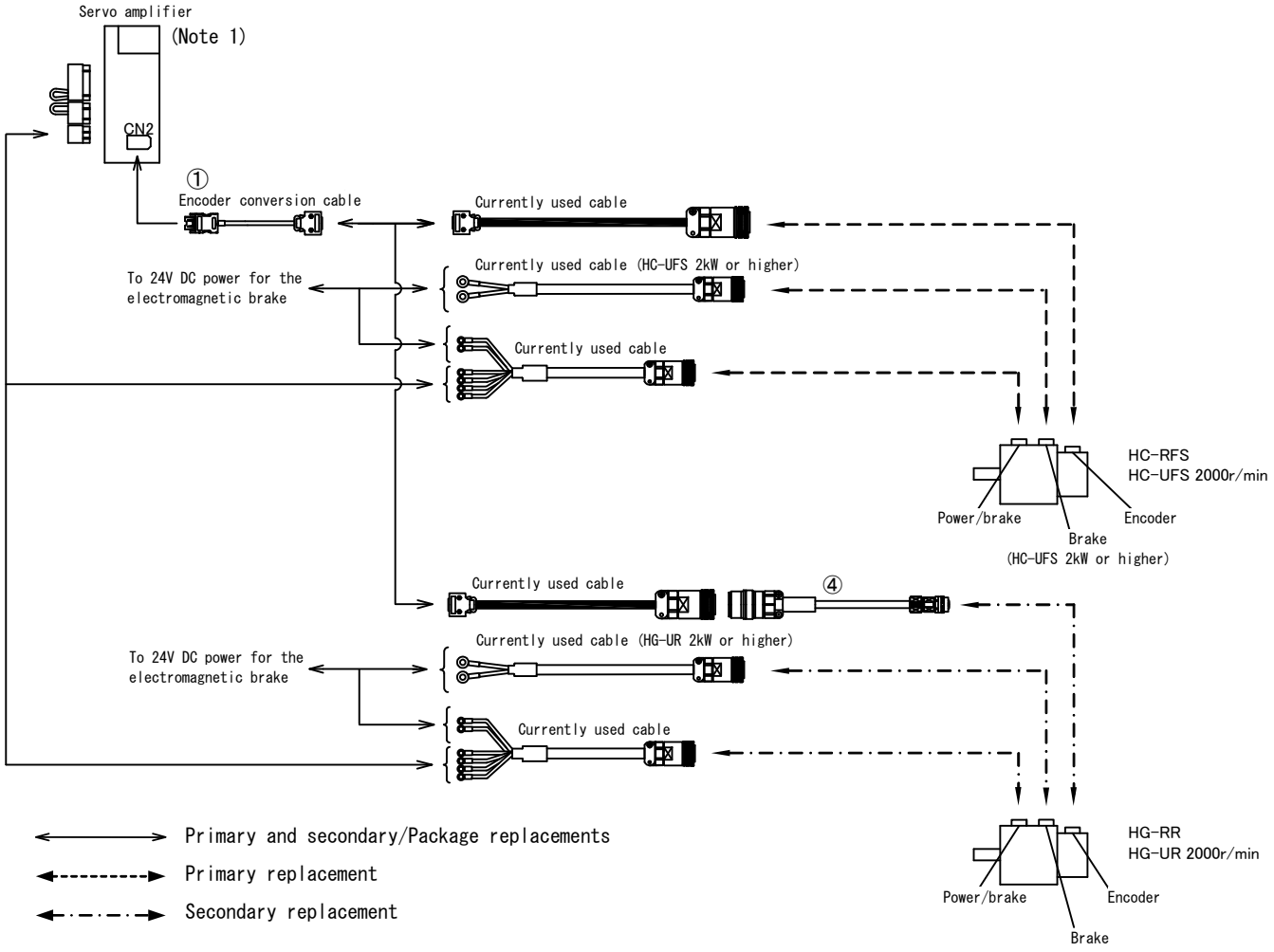
(2) In the Case of the HC-SFS and RFS Motors with a Decelerator



Note 1
For the cables between the servo amplifier and the control panel/sequencer, see the connection diagram in section 2.5.
Note 2
The brake connectors of the HC-SFS52B, 53B, 81B, 102B, 103B, 152B, and 153B motors are included in the power connectors. There are not separate connectors.
Note 3
If you are going to conduct a secondary replacement of a brake-equipped motor or to conduct a package replacement, you need to prepare a new electromagnetic brake cable. Note that you cannot use the currently used cable.

For the types of the cables indicated with the numbers, see page 3-43.

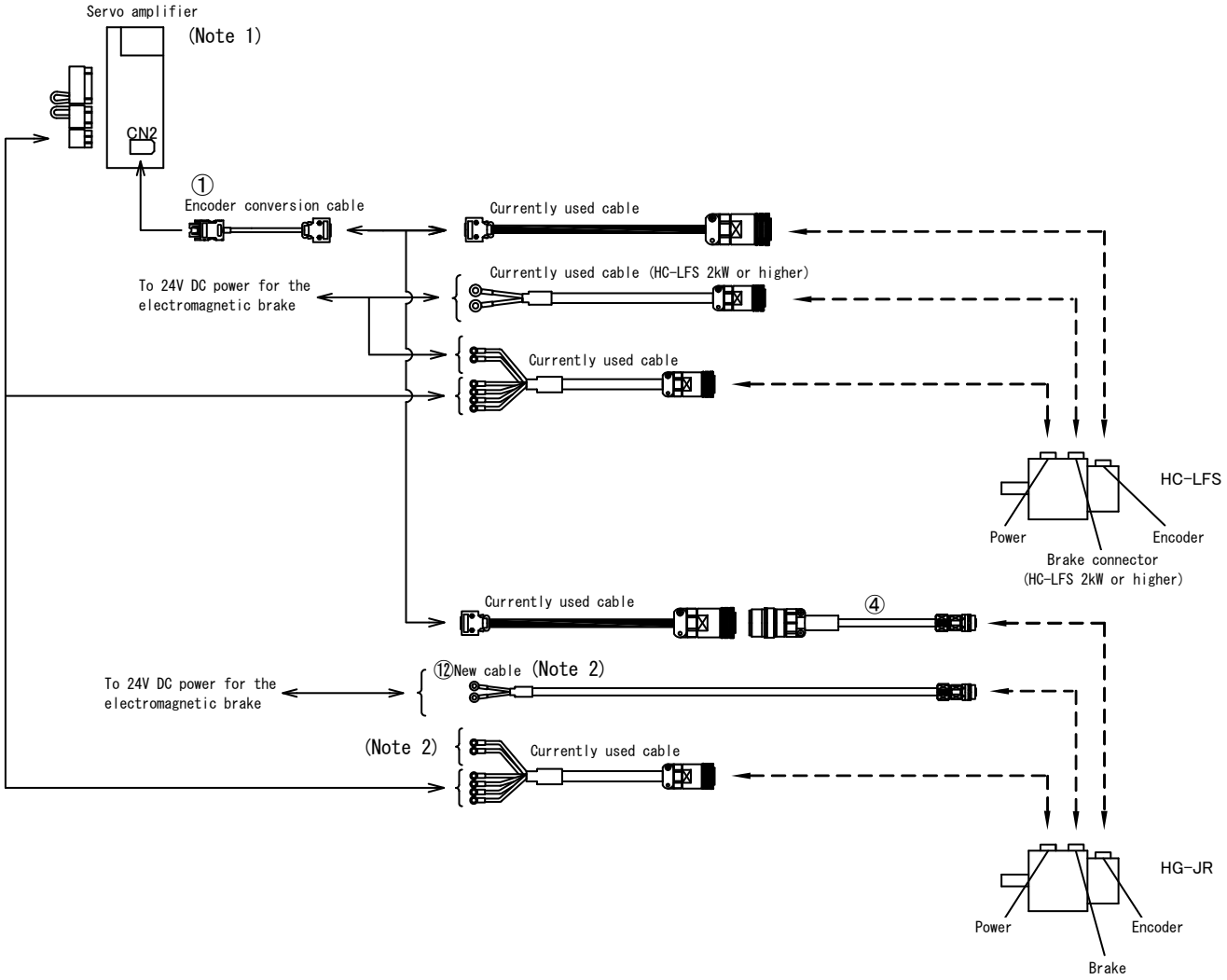
(3) In the case of the HC-RFS and UFS 2000 r/min Motors



Note 1
For the cables between the servo amplifier and the control panel/sequencer, see the connection diagram in section 2.5.

For the types of the cables indicated with the numbers, see page 3-43.

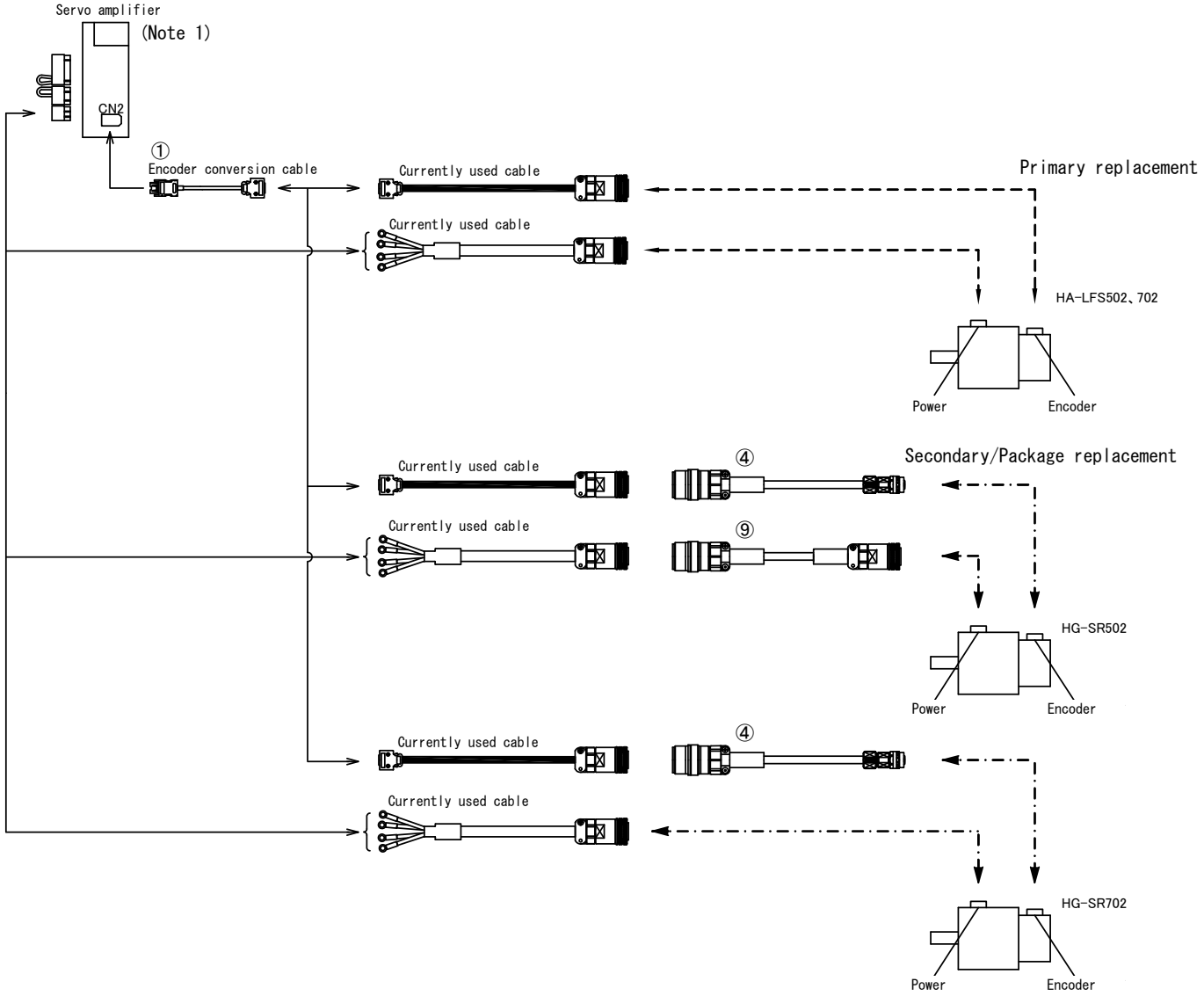
(4) In the case of the HC-LFS Motor



Note 1
For the cables between the servo amplifier and the control panel/sequencer, see the connection diagram in section 2.5.
Note 2
You need to arrange a new electromagnetic brake cable if you perform a secondary replacement or a package replacement of the (MOTOR TYPE NAME TO BE ADDED) brake-equipped motor when the HC-LFS ○○ motor is replaced. You do not need the existing brake. Provide some insulation means.

For the types of the cables indicated with the numbers, see page 3-43.

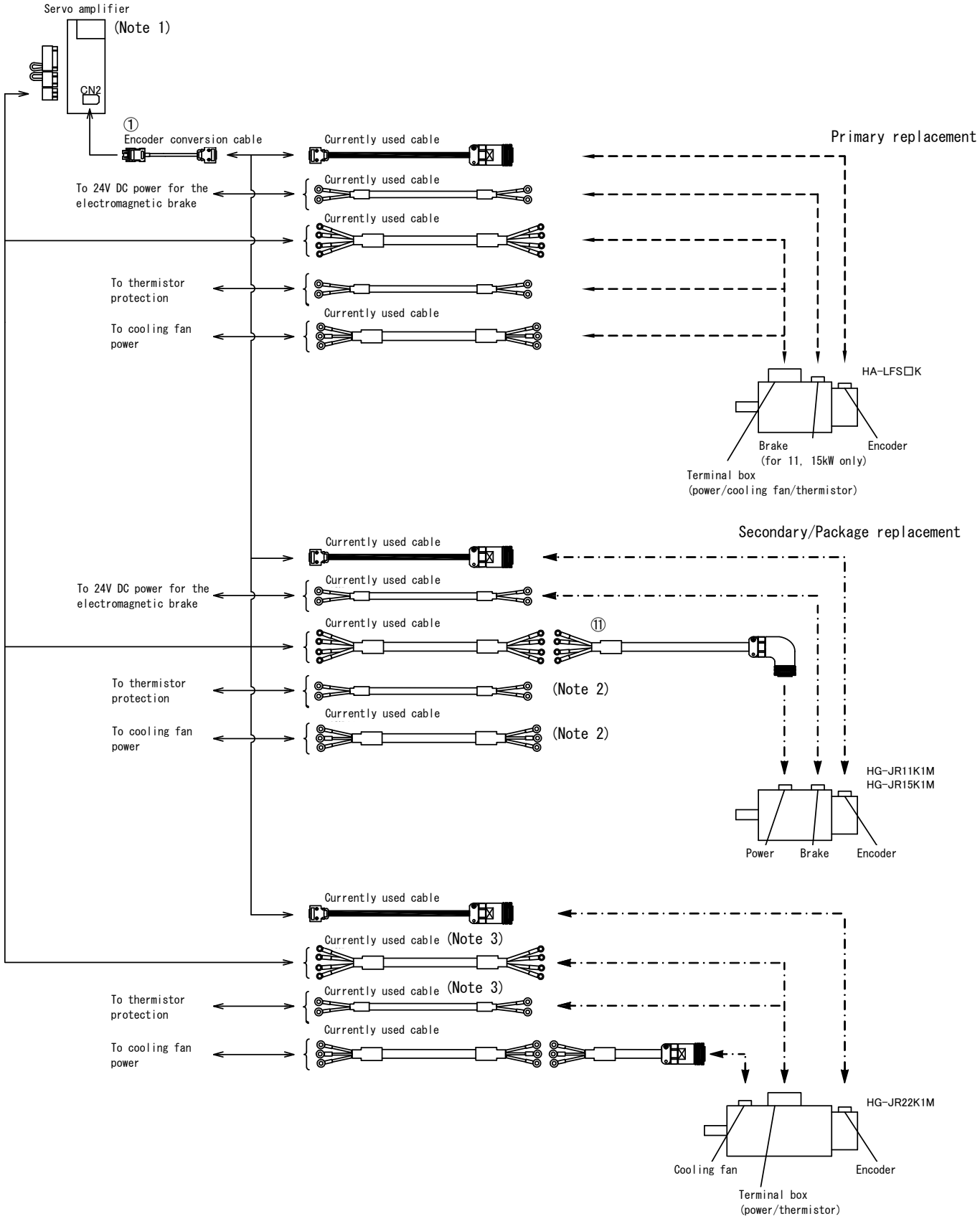
(5) In the Case of HA-LFS502, 702 Motors



Note 1
For the cables between the servo amplifier and the control panel/sequencer, see the connection diagram in section 2.5.

For the types of the cables indicated with the numbers, see page 3-43.

(6) In the Case of HA-LFS_K Motor



Note 1 For the cables between the servo amplifier and the control panel/sequencer, see the connection diagram in section 2.5.

Note 2 If you replace the motor, there are no cooling fans or thermistor terminals on the replacing motor. You do not need the currently used cables. Provide some insulation means.

Note 3 If you replace the motor, you need to alter the crimp terminals on the currently used cables. (Screw size - UVW terminal: From M8 to M10; Grounding terminal: From M6 to M10; Thermistor terminal: From M4 to M3.5)

For the types of the cables indicated with the numbers, see page 3-43.

No.	Item	Type	Use
1	Encoder conversion cable	SC-J2SJ4ENCO3M Cable length: 0.3m	Common for all types
2	Encoder conversion cable on motor side	SC-HAJ3ENM1CO3M-A1 Cable length: 0.3m	For HC-KFS, HC-MFS → HG-KR, HG-MR For HC-UFS 3000 r/min → HG-KR On load side
3		SC-HAJ3ENM1CO3M-A2 Cable length: 0.3m	For HC-KFS,HC-MFS → HG-KR,HG-MR For HC-UFS 3000 r/min → HG-KR On non-load side
4		SC-HAJ3ENM3C1M Cable length: 1m	For HC-SFS → HG-SR For HC-RFS → HG-RR For HC-UFS 2000 r/min → HG-UR For HC-LFS → HG-JR For HA-LFS → HG-SR
5	Motor power conversion cable	SC-J2SJ4PW1CO3M-A1 Cable length: 0.3m	For HC-KFS,HC-MFS → HG-KR,HG-MR For HC-UFS 3000r/min → HG-KR On load side
6		SC-J2SJ4PW1CO3M-A2 Cable length: 0.3m	For HC-KFS,HC-MFS → HG-KR,HG-MR For HC-UFS 3000 r/min → HG-KR On non-load side
7		SC-J2SJ4PWBK1CO3M-A1 Cable length: 0.3m	For HC-KFS,HC-MFS → HG-KR,HG-MR For HC-UFS 3000 r/min → HG-KR On load side (with brake)
8		SC-J2SJ4PWBK1CO3M-A2 Cable length: 0.3m	For HC-KFS,HC-MFS → HG-KR,HG-MR For HC-UFS 3000 r/min → HG-KR On non-load side (with brake)
9		SC-SAJ3PW2KC1M-S2 Cable length: 1m	For HC-SFS → HG-SR For HC-LFS → HG-JR (1.5kW or lower) For HC-LFS → HG-JR (3.5 to 5kW or less) For HA-LFS502 → HG-SR502
10		SC-HAJ3PW1C1M Cable length: 1m	
11		SC-J2SJ4PW2C1M Cable length: 1m	For HC-LFS152 → HG-JR353
12		SC-J2SJ4PW3C1M-A1 Cable length: 1m	HA-LFS_K → HG-JR_K (11 to 15kW) On load side
		SC-J2SJ4PW3C1M-A2 Cable length: 1m	HA-LFS_K → HG-JR_K (11 to 15kW) On non-load side
13	Conversion cable for motor-side brake	SC-BKC1CBL1M-L Cable length: 1m	For HC-SFS → HG-SR
14	Conversion cable for motor-side cooling fan	SC-J2SJ4FAN1C1M Cable length: 1m	HA-LFS22K1M → HG-JR22K1M

Section 4　Starting Up the System

⚠ DANGER

- Do not touch the switch with your hand wet. An electric shock may be caused.

⚠ CAUTION

- Check the parameters before starting operation. Otherwise, an unexpected operation may be made depending on the system.
- While the system is energized, or for a while after the system is turned off, the servo-amplifier radiator, regeneration resistance, servomotor, and so forth may be hot. To prevent anybody from carelessly touching them with hand, and to prevent any components (such as a cable) from touching them, provide a cover or any safety measures. Otherwise, a burn and/or some component damage may be caused.
- Never touch the turning part of the servomotor during operation. Otherwise, you may be injured.

4.1 When You Turn On the System for the First Time

When you turn on the system for the first time, follow the instructions in this section.

4.1.1 Steps to Start Up the System

Check the parameter settings of the previously installed modules.	View the servo amplifier display or the setup software (MRZJW3-SETUP161E) to check the parameter settings of the MR-J2S amplifier previously installed. Write down the parameter settings.
↓ Check the wiring.	Conduct a visual check of the wiring to Renewal Tool and the servo amplifier and servomotor to see if the wiring is correct.
↓ Check the ambient environment.	Check the ambient environment of Renewal Tool and the servo amplifier and servomotor. (See section 4.1.2.)
↓ Set up each parameter. (*1)	Set up the parameters, depending on your necessity, to select a control mode, generation option, and so forth that you want to use. For the parameter setting, see the following materials issued by Mitsubishi Electric: Type A "Guide for Replacing MR-J2S/J2M Series with J4 Series L(NA)03093", Part 2, Section 3.5 Type B "MODEL (Servo Amplifier) MR-J4-_B_-RJ020, MODEL (Conversion Unit for SSCNET of MR-J2S-B) MR-J4-T20 SERVO AMPLIFIER INSTRUCTION MANUAL SH(NA)030125-B", Section 5
↓ Use the test operation mode to make a separate test operation of the servomotor. (*1) (*2) (*3)	For the test operation, disconnect the servomotor from the system. Operate the servomotor at as low a speed as possible. Check that the servomotor turns correctly.
↓ Issue commands to conduct a separate test operation of the servomotor. (*1) (*2)	For the test operation, disconnect the servomotor from the system. Issue a command to the servo amplifier to operate the servomotor at as low a speed as possible. Check that the servomotor turns correctly.
↓ Connect the system for test operation.	Connect the servomotor and the system. Issue an operation command from a commanding module at a higher hierarchy. Check the behavior of the system.
↓ Make a gain adjustment. (*1)	Make a gain adjustment to optimize the behavior of the system.
↓ Start productive operation. (*2)	If you are going to use the position control mode, reset the components to the home positions as necessary.
↓ Stop the system.	Issue a stop command to stop operation. At this time, observe how the servomotor stops to go back its original status.

For precautions, see page 4-2.

Precautions

*1. For the details of the setting and test operation of each servo amplifier and so forth, see technical materials on the MR-J4 servo amplifier issued by Mitsubishi Electric Corporation.

If the existing servo amplifier has an extremely high gain, the characteristics may slightly vary after a primary replacement. Make sure to readjust the gain setting.

*2. When turning on the power source to the system, turn on the 24V DC power to the external interface at the same time. Otherwise, AL.E6.1 occurs.

*3. When you perform a secondary/package replacement, the monitor output (the rotational speed of the motor) will be different from the existing amplifier. If you are using the monitor output with the existing system, note that you need to change the program.

(Example: If you replace HC-KFS13 with HG-KR13, the output voltage of the rotational speed of the monitored motor will be 3/4 of that with J2S.)

４．１．２　Ambient Environment

（１）Arrangement of Cables

（ａ）No excessive force must be applied on the wiring cables.

（ｂ）The encoder cable must not exceed the lifetime of its flexibility.

（ｃ）No excessive force must be applied on the connector of the servomotor.

（２）Environment

The signal cables and the power cables in any part must not be short-circuited due to wire dust, metal dust, or the like.

4．2 Setting Up Parameters

4．2．1 Table of the Parameters You Need to Set Up - Type A

(1) In the Case of Primary Replacement

＊ Listed below in the table are the parameters you, at least, need to set up when performing a primary replacement. You may need to set up parameters other than the parameters listed below depending on the setting of the existing amplifier. For the details, see "Guide for Replacing MR-J2S/J2M Series with J4 Series L(NA)03093", Part 2, Section 3.5.

Parameter No.	Setting Item	Setting	Description
*Required			
PA04	Function selection A-1	0000h	Selection of forced stop/deceleration function To make the same setting as MR-J2S, select "Forced stop/deceleration function not valid (EM1 is used)."
PC22	Function selection C-1	□1□□h	Selection of serial encoder This is a setting for communications with the encoder of MR-J2S. If you do not make a correct setting, the encoder causes an initial communication data error 1 (AL 16.1).
PA09	Automatic tuning response	8	Automatic tuning response setting After replacement, set "8" to this setting. Turn on the system. ＊ After replacement, you need to readjust the gain. This setting is equivalent to the low response of MR-J2S. The low response may make the gain too low. Make adjustment. For the details of how to adjust gains, see Section 6 in "Model MR-J4-_A(-RJ) SERVO AMPLIFIER INSTRUCTION MANUAL" issued by Mitsubishi Electric Corporation.
PD27	Output device selection 2 ＊ For 11kW or higher only when this function is used	0006h	Selection of dynamic brake interlock (DB) If you use this function with MR-J2S of 11kW or higher, set up this parameter. DB signals are assigned to the CN1-48 pins.
*For position control mode only			
PA06	Electronic gear numerator (CMX) (Numerator of the increment of the command input pulse)	8 (Note 1)	If you use an electronic gear, you need to change the setting. If you perform a primary replacement, specify the same numbers as those of parameter Nos. 3 and 4 of the MR-J2S-_A servo amplifier.
PA07	Electronic gear denominator (CDV) (Denominator of the increment of the command input pulse)	1 (Note 1)	
PA13	Input form of command pulse	□2□□h	Selection of pulse row filter The setting shown in the left-side column is a filter setting of the command pulse row that is equivalent to that with MR-J2S-_A (when the differential line driver type is set). *Make sure to set up the filter. Otherwise, positioning may be incorrect. In addition, you need to make the logic of the command pulse correspond to the positioning module. For the details, see section 2.6.5. *If you do not set up the logic, the motor will not turn. Make sure to make the setting.
PA10	In-position range	100 (Note 2)	In-position range Set up the in-position range in the unit of a command pulse. Specify the same number as that of parameter No. 5 of the MR-J2S-_A servo amplifier.
*For speed control mode only			
PA01	Control mode	□□□2h	Select the control mode of the servo amplifier. The speed control mode is set.
PC12	Maximum rotational speed of analog speed command	3000 (Note 3)	Maximum rotational speed of analog speed command
*For torque control mode only			
PA01	Control mode	□□□4h	Select the control mode of the servo amplifier. The torque control mode is set.
PC12	Maximum rotational speed of analog speed limit	3000 (Note 3)	Maximum rotational speed of analog speed limit
PC13	Maximum output of analog torque command	100	Maximum output of analog torque command Specify the same number as that of the MR-J2S-_A servo amplifier.

Note 1 This is an example of the case where the electronic gear of the existing servo amplifier is set to "8/1".

Note 2 This is an example of the case where the in-position range of the existing servo amplifier is set to "100".

Note 3 This is an example of the case where the setting of the existing servo amplifier is "3000".

Continuing from the previous page

*When pulses output from the encoder are used			
PA15	Encoder output pulse	4 (Note 4)	Select the encoder pulse (phase A or phase B) output from the servomotor.
PC19	Selection of encoder output pulse setting	0□1□h (Note 4)	Selection of encoder output pulse setting Set up the encoder pulse output from the servo amplifier. The setting shown in the left-side column is a setting of a division ratio.

Note 4

This is an example of the case where the output pulse setting of the existing HC-KFS motor (with the encoder resolution of 131072 pulse/rev) is "Division ratio: 1/4".

(2) In the Case of Secondary Replacement

* Listed below in the table are the parameters you, at least, need to set up when performing a secondary replacement. You may need to set up parameters other than the parameters listed below depending on the setting of the existing amplifier. For the details, see "Guide for Replacing MR-J2S/J2M Series with J4 Series L(NA)03093", Part 2, Section 3.5.

Parameter No.	Setting Item	Setting		Description
		Before Change (Note 1)	After Change	
*Required				
PC22	Function selection C-1	□1□□h	□0□□h	Selection of the serial encoder Set up the communications with the encoder of MR-J4. If you do not make a correct setting, the encoder causes an initial communication data error (AL. 16.1).
*For position control mode only				
PA06	Electronic gear numerator (CMX) (Numerator of the increment of the command input pulse)	8 (Note 2)	256	If you use an electronic gear, you need to change the setting. If you perform a secondary replacement, follow the equation below to calculate the setting: $\frac{CMX}{CDV} = \frac{\text{Encoder resolution of replacing servomotor}}{\text{Encoder resolution of servomotor for MR-J2S}} \cdot \frac{\text{Current CMX}}{\text{Current CDV}} = \frac{4194304}{131072} \cdot \frac{8}{1} = \frac{256}{1}$ * If the motor is equipped with a decelerator, the actual gear ratios of the motors before and after replacement may be different. If the actual gear ratios are different, consider the actual gear ratio to make the setting.
PA07	Electronic gear denominator (CDV) (Denominator of the increment of the command input pulse)	1 (Note 2)	1	
PA10	In-position range	100	3200	Specify the range of the accumulated pulse to output the positioning-completed signal (INP). Multiply the value of parameter No. 5 of the MR-J2S-_A servo amplifier by 32, and specify this value.
*For speed control mode only				
PC12	Maximum rotational speed of analog speed command	0	3000	Maximum rotational speed of analog speed command The setting in the left-side column is of the case where the HC-SFS53 motor is replaced by the HG-SR52 motor.
*For torque control mode only				
PC12	Maximum rotational speed of analog speed limit	0	3000	Maximum rotational speed of analog speed limit The setting in the left-side column is of the case where the HC-SFS53 motor is replaced by the HG-SR52 motor.
*When encoder output pulses are used				
PA15	Encoder output pulse	4 (Note 3)	128	Select the encoder pulse (phase A or phase B) output from the servo amplifier. You need to set up the output pulse.
PC19	Selection of encoder output pulse setting	0□1□h (Note 3)	1□1□h	Selection of encoder output pulse setting Set up the encoder pulse output from the servo amplifier. The setting shown in the left-side column is a setting of a division ratio.

Note 1 This is an example of the setting at the time of a primary replacement.

Note 2 This is an example of the case where the electronic gear of the existing servo amplifier is set to "8/1" with the existing servomotor (with the encoder resolution of 131072 pulse/rev).

Note 3 This is an example of the case where the output pulse setting of the existing HC-KFS motor (with the encoder resolution of 131072 pulse/rev) is "Division ratio: 1/4".

(3) In the Case of Package Replacement

* Listed below in the table are the parameters you, at least, need to set up when performing a package replacement. You may need to set up parameters other than the parameters listed below depending on the setting of the existing amplifier. For the details, see "Guide for Replacing MR-J2S/J2M Series with J4 Series L(NA)03093", Part 2, Section 3.5.

Parameter No.	Setting Item	Setting	Description
*Required			
PA04	Function selection A-1	0000h	Selection of forced stop/deceleration function To make the same setting as MR-J2S, select "Forced stop/deceleration function not valid (EM1 is used)."
PA09	Automatic tuning response	8	Automatic tuning response setting After replacement, set "8" to this setting. Turn on the system. * After replacement, you need to readjust the gain. This setting is equivalent to the low response of MR-J2S. The low response may make the gain too low. Make adjustment. For the details of how to adjust gains, see Section 6 in the technical materials on servo amplifiers (MR-J4A) issued by Mitsubishi Electric Corporation.
PD27	Output device selection 2 * For 11kW or higher only when this function is used	0006h	Selection of dynamic brake interlock (DB) If you use this function with MR-J2S of 11kW or higher, set up this parameter. DB signals are assigned to the CN1-48 pins.
*For position control mode only			
PA06	Electronic gear numerator (CMX) (Numerator of the increment of the command input pulse)	256 (Note 1)	If you use an electronic gear, you need to change the setting. If you perform a package replacement, follow the equation below to calculate the setting: $\frac{CMX}{CDV} = \frac{\text{Encoder resolution of replacing servomotor}}{\text{Encoder resolution of servomotor for MR-J2S}} \cdot \frac{\text{Current CMX}}{\text{Current CDV}} = \frac{4194304}{131072} \cdot \frac{8}{1} = \frac{256}{1}$ * If the motor is equipped with a decelerator, the actual gear ratios of the motors before and after replacement may be different. If the actual gear ratios are different, consider the actual gear ratio to make the setting.
PA07	Electronic gear denominator (CDV) (Denominator of the increment of the command input pulse)	1 (Note 1)	
PA13	Input form of command pulse	□2□□h	Selection of pulse row filter The setting shown in the left-side column is a filter setting of the command pulse row that is equivalent to that with MR-J2S-_A (when the differential line driver type is set). * Make sure to set up the filter. Otherwise, positioning may be incorrect. In addition, you need to make the logic of the command pulse correspond to the positioning module. For the details, see section 2.6.5. * If you do not set up the logic, the motor will not turn. Make sure to make the setting.
PA10	In-position range	3200 (Note 2)	Specify the range of the accumulated pulse to output the positioning-completed signal (INP). Multiply the value of parameter No. 5 of the MR-J2S-_A servo amplifier by 32, and specify this value.
*For speed control mode only			
PA01	Control mode	□□□2h	Select the control mode of the servo amplifier. The speed control mode is set.
PC12	Maximum rotational speed of analog speed command	3000	Maximum rotational speed of analog speed command The setting in the left-side column is of the case where the HC-SFS53 motor is replaced by the HG-SR52 motor.
*For torque control mode only			
PA01	Control mode	□□□4h	Specify the control mode of the servo amplifier. The torque control mode is set.
PC12	Maximum rotational speed of analog speed limit	3000	Maximum rotational seed of analog speed limit The setting in the left-side column is of the case where the HC-SFS53 motor is replaced by the HG-SR52 motor.
PC13	Maximum output of analog torque command	100	Maximum output of analog torque command Specify the same value as the MR-J2S-_A servo amplifier.
*When encoder output pulses are used			
PA15	Encoder output pulse	128 (Note 3)	Select the encoder pulse (phase A or phase B) output from the servo amplifier.
PC19	Selection of encoder output pulse setting	0□1□h (Note 3)	Selection of encoder output pulse setting Set up the encoder pulse output from the servo amplifier. The setting shown in the left-side column is a setting of a division ratio.

Note 1 This is an example of the case where the electronic gear of the existing servo amplifier is set to "8/1".

Note 2 This is an example of the case where the in-position range of the existing servo amplifier is set to "100".

Note 3 This is an example of the case where the output pulse setting of the existing HC-KFS motor (with the encoder resolution of 131072 pulse/rev) is "Division ratio: 1/4".

4.2.2 Table of the Parameters You Need to Set Up - Type B

POINT

- When you integrate the MR-J4-_B-RJ020 servo amplifier and the MR-J4-T20 SSCNET conversion module, the controller recognizes them as MR-J2S. So, you do not need to change programs or parameters.
- For the details of the parameter settings, see "MODEL (Servo Amplifier) MR-J4-_B_-RJ020, MODEL (Conversion Unit for SSCNET of MR-J2S-B) MR-J4-T20 SERVO AMPLIFIER INSTRUCTION MANUAL" (SH(NA)030125-B), Section 5.

4．3 Troubleshooting at a Startup

⚠CAUTION	●Never make any extreme adjustment/change in parameters. Doing so makes operation unstable. ●After setting up the parameters, check the settings carefully, and conduct test operations. If a parameter is incorrect, operation will be unstable.

This section shows some troubles that may occur at the time of startup along with their countermeasures.

4．3．1 In the Case of Type A

No.	Startup Flow	Trouble	Investigation	Possible Cause	Countermeasures
1	Turn on power.	･The LED does not turn on. ･The LED blinks.	Connectors CN1, CN2, and CN6 on the side of the servo amplifier are disconnected, but no improvement is seen.	1. Defective power source/voltage 2. Defective servo amplifier	1. Check the power supply voltage. 2. Replace the servo amplifier.
			Connectors CN1A, CN1B, CN2, and CN3 of the conversion cable of Renewal Kit are disconnected, but no improvement is seen.	1. Short circuit in power supply to the conversion cable wiring of Renewal Kit 2. Defective conversion cable of Renewal Kit	Replace the conversion cable.
			Connector CN1A or CN1B of the conversion cable of Renewal Kit is disconnected, and an improvement is seen.	Short circuit in power supply to the cable wiring of currently used CN1A or CN1B	Replace the currently used cable.
			Connector CN2 of the conversion cable of Renewal Kit is disconnected, and an improvement is seen.	1. Short circuit in power supply to the cable wiring of the currently used encoder 2. Defective encoder	1. Replace the currently used encoder cable. 2. Replace the currently used encoder.
		An alarm occurs.	See the MR-J4 Servo Amplifier Technical Materials (Troubleshooting) issued by Mitsubishi Electric Corporation, and remove the cause.		
		AL.E6.1	1. Check if power is supplied to Renewal Kit (terminals L11 and L21). 2. Connectors CN1A and CN1B on the servo amplifier side and connectors CN1A and CN1B on the conversion cable of Renewal Kit are reconnected, and an improvement is seen.	1. 24V DC power is not supplied to the power input signal source (DICOM) for the digital interface. 2. 24V DC power is not supplied because of an incorrect connection of a connector.	1. Supply 24V DC power correctly. 2. Connect the connectors correctly.
2	Turn on servo-on (SON).	An alarm occurs.	See the MR-J4 Servo Amplifier Technical Materials (Troubleshooting) issued by Mitsubishi Electric Corporation, and remove the cause.		
		A servo lock does not occur. (The servomotor shaft is free.)	1. Check if power is supplied to Renewal Kit (terminals L1, L2, L3, L11, and L21). 2. Check if the display indicates that the system is ready. 3. Use the external input signal display (MR-J4-□A Servo Amplifier Technical Materials, Section 4.5, issued by Mitsubishi Electric Corporation) to check if servo-on (SON) is on. 4. Use the external input signal display (MR-J4-□A Servo Amplifier Technical Materials, Section 4.5, issued by Mitsubishi Electric Corporation.) to check if reset (RES) is on.	1. Servo-on (SON) is not on (defective connection or incorrect connection of a connector). 2. 24V DC power is not supplied to the power input signal source (DICOM) for the digital interface. 3. Reset (RES) is on or short-circuited.	1. Connect the connectors correctly. 2. Supply 24V DC power correctly. 3. Turn off reset (RES).

＊For what to do when an alarm occurs, see section 6.1.

Continuing from the previous page

No.	Startup Flow	Trouble	Investigation	Possible Cause	Countermeasures
Steps specific to the position control mode					
3	Input the command pulse (test operation).	The servomotor does not start.	See the status display (MR-J4-_A Servo Amplifier Technical Materials, Section 4.5, issued by Mitsubishi Electric Corporation) to check the command pulse accumulation.	1. If this is a case of an open corrector pulse row input, 24V DC power is not supplied to OPC (Pins 11 and 9 of the currently used cable at CN1A are short-circuited (the circuit is broken).) 2. Pulses are not input (incorrect setting of parameter PA13). 3. Pulses are not input (an incorrect connection of a connector). 4. The setting of the electronic gear is incorrect.	1. Replace the currently used cable. 2. Make a correct setting of parameter PA13 (see section 2.6.5 for the details). 3. Connect the connector correctly. 4. Make a correct setting of parameters PA06 and 07 (see section 4.2 for the details).
		The servomotor turns in the reverse direction.		The setting of parameter PA14 is incorrect.	Make a correct setting of parameter PA14.
Steps specific to the speed control mode					
4	Turn on forward start (ST1) or reverse start (ST2).	The servomotor does not start.	See the status display (MR-J4-_A Servo Amplifier Technical Materials, Section 4.5, issued by Mitsubishi Electric Corporation) to check the input voltage of the analog speed command (VC).	1. The analog speed command indicates 0V. 2. An incorrect connector connection interrupts application of voltage.	1. Apply correct voltage. 2. Connect the connector correctly.
			See the external input signal display (MR-J4-_A Servo Amplifier Technical Materials, Section 4.5, issued by Mitsubishi Electric Corporation) to check the on/off status of the input signal.	1. Both ST1 and ST2 are off. Both ST1 and ST2 are on. 2. An incorrect connector connection interrupts normal signal inputs.	1. Turn on ST1/ST2 correctly. 2. Connect the connector correctly.
			Check internal speed commands 1 to 7 (parameters PC05 to PC11).	The parameter is set to 0.	Make correct settings of internal speed commands 1 to 7 (parameters PC05 to PC11).
			Check the forward rotation torque limit (parameter PA11) and the reverse rotation torque limit (parameter PA12).	The torque limit level is too low in comparison with the load torque.	Make correct settings of the forward rotation torque limit (parameter PA11) and the reverse rotation torque limit (parameter PA12).
			If the analog torque limit (TLA) is in the status that enables its use, see the status display to check the input voltage.	The torque limit level is too low in comparison with the load torque.	Apply correct voltage to the analog torque limit (TLA).
Steps specific to the torque control mode					
5	Turn on the forward rotation selection (RS1) or the reverse rotation selection (RS2).	The servomotor does not start.	See the status display (MR-J4-_A Servo Amplifier Technical Materials, Section 4.5, issued by Mitsubishi Electric Corporation) to check the input voltage of the analog torque command (TC).	1. The analog speed command indicates 0V. 2. An incorrect connector connection interrupts application of voltage.	1. Apply correct voltage. 2. Connect the connector correctly.
			See the external input signal display (MR-J4-_A Servo Amplifier Technical Materials, Section 4.5, issued by Mitsubishi Electric Corporation) to check the on/off status of the input signal.	1. Both RS1 and RS2 are off. Both RS1 and RS2 are on. 2. An incorrect connector connection interrupts normal signal inputs.	1. Turn on RS1/RS2 correctly. 2. Connect the connector correctly.
			Check internal speed limit commands 1 to 7 (parameters PC05 to PC11).	The parameter is set to 0.	Make correct settings of internal speed limits 1 to 7 (parameters PC05 to PC11).
			Check the value of the maximum output of the analog torque command (parameter PC13).	The torque command level is too low in comparison with the load torque.	Make correct settings of the forward rotation torque limit (parameter PA11) and the reverse rotation torque limit (parameter PA12).
			Check the forward rotation torque limit (parameter PA11) and the reverse rotation torque limit (parameter PA12).	The parameter is set to 0.	Apply correct voltage to the analog torque limit (TLA).

* For what to do when an alarm occurs, see section 6.1.

4．3．2　In the Case of Type B

No.	Startup Flow	Trouble	Investigation	Possible Cause	Countermeasures
1	Turn on power.	･The LED does not turn on. ･The LED blinks.	Connectors CN2 and CN3 on the servo amplifier side and connectors CN10A and CN10B on the SSCNET conversion module side are disconnected, but no improvement is seen.	1. Defective power source/voltage 2. Defective servo amplifier	1. Check power supply voltage. 2. Replace the servo amplifier.
			Connectors CN2 and CN3 of the conversion cable of Renewal Kit are disconnected, but no improvement is seen.	1. Short circuit in power supply to the conversion cable wiring of Renewal Kit 2. Defective conversion cable of Renewal Kit	Replace the conversion cable.
			Connectors CN2 and CN3 on the conversion cable of Renewal Kit or connectors CN10A and CN10B on the SSCNET conversion module side are disconnected, and an improvement is seen.	Short circuit in power supply to the cable wiring of currently used CN2 and CN3 or CN10A and CN10B on the SSCNET conversion module	Replace the currently used cable.
			Connector CN2 on the conversion cable of Renewal Kit is disconnected, and an improvement is seen.	1. Short circuit in power supply to the cable wiring of the currently used encoder 2. Defective encoder	1. Replace the currently used encoder cable. 2. Replace the currently used encoder.
		An alarm occurs.	See the MELSERVO-J4 Servo amplifier INSTRUCTION MANUAL TROUBLE SHOOTING issued by Mitsubishi Electric Corporation, and remove the cause.		
		AL.E6.1	1. Check if power is supplied to Renewal Kit (terminals L11 and L21). 2. Connectors CN2 and CN3 on the servo amplifier side, connectors CN10A and CN10B on the SSCNET conversion module side, and connectors CN2 and CN3 on the conversion cable of Renewal Kit are reconnected, and an improvement is seen.	1. 24V DC power is not supplied to the power input signal source (DICOM) for the digital interface. 2. 24V DC power is not supplied because of an incorrect connection of a connector.	1. Supply 24V DC power correctly. 2. Connect the connectors correctly.
2	Turn on servo-on (SON).	An alarm occurs.	See the MELSERVO-J4 Servo amplifier INSTRUCTION MANUAL TROUBLE SHOOTING issued by Mitsubishi Electric Corporation, and remove the cause.		
		A servo lock does not occur. (The servomotor shaft is free.)	1. Check if power is supplied to Renewal Kit (terminals L1, L2, L3, L11, and L21). 2. Use MR-Configurator (SETUP161E) to check if the system is ready. 3. Use MR-Configurator (SETUP161E) to check if servo-on (SON) is on. 4. Use MR-Configurator (SETUP161E) to check if reset (RES) is on.	1. Servo-on (SON) is not on (defective connection or incorrect connection of a connector). 2. 24V DC power is not supplied to the power input signal source (DICOM) for the digital interface. 3. Reset (RES) is on or short-circuited.	1. Connect the connectors correctly. 2. Supply 24V DC power correctly. 3. Turn off reset (RES).
3	See the MELSERVO-J4 Servo amplifier INSTRUCTION MANUAL TROUBLE SHOOTING issued by Mitsubishi Electric Corporation for any other troubles that do not trigger an alarm.				

＊For what to do when an alarm occurs, see section 6.1.

Section 5 Parameters

> POINT
> ● Manufacturer setting parameters are not described here.

5.1.1 A Type Parameter Comparison Table

MR-J2S-_A_ parameters						MR-J4-_A_ parameters				
No.	Symbol	Parameter name		Initial value	Customer setting value	No.	Symbol	Parameter name	Initial value	Customer setting value
0	*STY	Control mode, Regenerative option selection	Control mode	0000 h		PA01	*STY	Operation mode	1000 h	
			Regenerative option			PA02	*REG	Regenerative option	0000 h	
1	*OP1	Function selection 1	Input signal filter	0002 h		PD29	*DIF	Input filter setting	0004 h	
			Electromagnetic brake interlock selection			PD24	*DO2	Output device selection2 (electromagnetic brake interlock selection)	000Ch	
			Dynamic brake interlock selection (11 kW or more)			PD23	*DO1	Output device selection 1	0004 h	
						PD25	*DO3	Output device selection 3	0004 h	
						PD26	*DO4	Output device selection 4	0007 h	
						PD28	*DO6	Output device selection 6	0002 h	
			Absolute position detection system selection			PA03	*ABS	Absolute position detection system selection	0000 h	
2	ATU	Auto tuning	Mode setting Response level setting	7 kW or less: 0105 h 11 kW or more: 0102 h		PA08	ATU	Auto tuning mode (Note)	0001 h	
						PA09	RSP	Auto tuning response (Note)	16	
3	CMX	Electronic gear numerator (command pulse multiplication numerator)		1		PA06	CMX	Electronic gear numerator (command pulse multiplication numerator)	1	
						PA21	*AOP3	Electronic gear selection	0001 h	
4	CDV	Electronic gear denominator (command pulse multiplication denominator)		1		PA07	CDV	Electronic gear denominator (command pulse multiplication denominator)	1	
						PA21	*AOP3	Electronic gear selection	0001 h	
5	INP	In-position range		100		PA10	INP	In-position range	100	
6	PG1	Position loop gain 1		7 kW or less: 35 11 kW or more: 19		PB08	PG2	Position loop gain (Note)	37.0	
7	PST	Position command acceleration/deceleration time constant (position smoothing)		3		PB03	PST	Position command acceleration/deceleration time constant (position smoothing)	0	
8	SC1	Internal speed command 1		100		PC05	SC1	Internal speed command 1	100	
		Internal speed limit 1						Internal speed limit 1		
9	SC2	Internal speed command 2		500		PC06	SC2	Internal speed command 2	500	
		Internal speed limit 2						Internal speed limit 2		
10	SC3	Internal speed command 3		1000		PC07	SC3	Internal speed command 3	1000	
		Internal speed limit 3						Internal speed limit 3		
11	STA	Acceleration time constant		0		PC01	STA	Acceleration time constant	0	
12	STB	Deceleration time constant		0		PC02	STB	Deceleration time constant	0	
13	STC	S-pattern acceleration/deceleration time constant		0		PC03	STC	S-pattern acceleration/deceleration time constant	0	
14	TQC	Torque command time constant		0		PC04	TQC	Torque command time constant	0	
15	*SNO	Station number setting		0		PC20	*SNO	Station number setting	0	
16	*BPS	Serial communication function selection - Alarm history clear		0000 h		PC21	*SOP	RS-422 communication function selection	0000 h	
17	MOD	Analog monitor output		0100 h		PC14	MOD1	Analog monitor 1 output	0000 h	
						PC15	MOD2	Analog monitor 2 output	0001 h	
18	*DMD	Status display selection		0000 h		PC36	*DMD	Status display selection	0000 h	
19	*BLK	Parameter writing inhibit		0000 h		PA19	*BLK	Parameter writing inhibit	00AA h	
20	*OP2	Function selection 2	Restart after instantaneous power failure selection	0000 h				No corresponding parameter		
			Servo-lock upon stop selection			PC23	*COP2	Servo-lock selection at speed control stop	0000 h	
			Slight vibration suppression control			PB24	*MVS	Slight vibration suppression control selection	0000 h	
21	*OP3	Function selection 3 (command pulse selection)		0000 h		PA13	*PLSS	Command pulse input form	0100 h	
22	*OP4	Function selection 4	LSP, LSN stop selection	0000 h		PD30	*DOP1	Function selection D-1 (LSP, LSN stop selection)	0000 h	
			VC, VLA voltage averaging			PC23	*COP2	Function selection C-2 (VC, VLA voltage averaging)	0000 h	
23	FFC	Feed forward gain		0		PB04	FFC	Feed forward gain (Note)	0	
24	ZSP	Zero speed		50		PC17	ZSP	Zero speed	50	

MR-J2S-_A_ parameters						MR-J4-_A_ parameters				
No.	Symbol	Parameter name		Initial value	Customer setting value	No.	Symbol	Parameter name	Initial value	Customer setting value
25	VCM	Analog speed command - Maximum speed Analog speed limit - Maximum speed		0		PC12	VCM	Analog speed command - Maximum speed Analog speed limit - Maximum speed	0	
26	TLC	Analog torque command maximum output		100		PC13	TLC	Analog torque command maximum output	100.0	
27	*ENR	Encoder output pulses		4000		PA15	*ENR	Encoder output pulses	4000	
						PC19	*ENRS	Encoder output pulse selection	0000 h	
28	TL1	Internal torque limit 1		100		PA11	TLP	Forward rotation torque limit	100.0	
						PA12	TLN	Reverse rotation torque limit	100.0	
29	VCO	Analog speed command offset Analog speed limit offset		Differs depending on servo amplifier		PC37	VCO	Analog speed command offset	Differs depending on servo amplifier	
30	TLO	Analog torque command offset Analog torque limit offset		0		PC38	TPO	Analog torque command offset Analog torque limit offset	0	
31	MO1	Analog monitor 1 offset		0		PC39	MO1	Analog monitor 1 offset	0	
32	MO2	Analog monitor 2 offset		0		PC40	MO2	Analog monitor 2 offset	0	
33	MBR	Electromagnetic brake sequence output		100		PC16	MBR	Electromagnetic brake sequence output	0	
34	GD2	Load to motor inertia ratio		70		PB06	GD2	Load to motor inertia ratio	7.00	
35	PG2	Position loop gain 2		7 kW or less: 35; 11 kW or more: 19		PB08	PG2	Position loop gain (Note)	37.0	
36	VG1	Speed loop gain 1		7 kW or less: 177; 11 kW or more: 96				No corresponding parameter		
37	VG2	Speed loop gain 2		7 kW or less: 817; 11 kW or more: 455		PB09	VG2	Speed loop gain (Note)	823	
38	VIC	Speed integral compensation		48		PB10	VIC	Speed integral compensation (Note)	33.7	
39	VDC	Speed differential compensation		980		PB11	VDC	Speed differential compensation (Note)	980	
41	*DIA	Input signal automatic ON selection		0000 h		PD01	*DIA1	Input signal automatic on selection 1	0000 h	
42	*DI1	Input signal selection 1 (LOP assignment)	Pin CN1B-5	0003 h		PD03	*DI1L	Input device selection 1L	0202 h	
						PD04	*DI1H	Input device selection 1H	0002 h	
			Pin CN1B-14			PD11	*DI5L	Input device selection 5L	0303 h	
						PD12	*DI5H	Input device selection 5H	0003 h	
			Pin CN1A-8			PD13	*DI6L	Input device selection 6L	2006 h	
						PD14	*DI6H	Input device selection 6H	0020 h	
			Pin CN1B-7			PD05	*DI2L	Input device selection 2L	2100 h	
						PD06	*DI2H	Input device selection 2H	0021 h	
			Pin CN1B-8			PD07	*DI3L	Input device selection 3L	0704 h	
						PD08	*DI3H	Input device selection 3H	0007 h	
			Pin CN1B-9			PD09	*DI4L	Input device selection 4L	0805 h	
						PD10	*DI4H	Input device selection 4H	0008 h	
		CR selection				PD32	*DOP3	CR selection	0000 h	
43	*DI2	Input signal selection 2 (CN1B-5)		0111 h		PD03	*DI1L	Input device selection 1L	0202 h	
						PD04	*DI1H	Input device selection 1H	0002 h	
44	*DI3	Input signal selection 3 (CN1B-14)		0222 h		PD11	*DI5L	Input device selection 5L	0303 h	
						PD12	*DI5H	Input device selection 5H	0003 h	
45	*DI4	Input signal selection 4 (CN1A-8)		0665 h		PD13	*DI6L	Input device selection 6L	2006 h	
						PD14	*DI6H	Input device selection 6H	0020 h	
46	*DI5	Input signal selection 5 (CN1B-7)		0770 h		PD05	*DI2L	Input device selection 2L	2100 h	
						PD06	*DI2H	Input device selection 2H	0021 h	
47	*DI6	Input signal selection 6 (CN1B-8)		0883 h		PD07	*DI3L	Input device selection 3L	0704 h	
						PD08	*DI3H	Input device selection 3H	0007 h	
48	*DI7	Input signal selection 7 (CN1B-9)		0994 h		PD09	*DI4L	Input device selection 4L	0805 h	
						PD10	*DI4H	Input device selection 4H	0008 h	
49	*DO1	Output signal selection 1	Alarm code	0000 h		PD34	DOP5	Function selection D-5	0000 h	
		WNG (warning) output setting	Pin CN1A-19			PD28	*DO6	Output device selection 6	0002 h	
			Pin CN1B-18					No corresponding parameter		
			Pin CN1A-18			PD25	*DO3	Output device selection 3	0004 h	
			Pin CN1B-19			PD24	*DO2	Output device selection 2	000Ch	
			Pin CN1B-6			PD26	*DO4	Output device selection 4	0007 h	
		BWNG (battery warning) output setting	Pin CN1A-19			PD28	*DO6	Output device selection 6	0002 h	
			Pin CN1B-18					No corresponding parameter		
			Pin CN1A-18			PD25	*DO3	Output device selection 3	0004 h	
			Pin CN1B-19			PD24	*DO2	Output device selection 2	000Ch	
			Pin CN1B-6			PD26	*DO4	Output device selection 4	0007 h	

MR-J2S-_A_ parameters						MR-J4-_A_ parameters				
No.	Symbol	Parameter name		Initial value	Customer setting value	No.	Symbol	Parameter name	Initial value	Customer setting value
51	*OP6	Function selection 6	Operation selectionat Reset ON	0000 h		PD30	*DOP1	Function selection D-1	0000 h	
53	*OP8	Function selection 8		0000 h				No corresponding parameter		
54	*OP9	Function selection 9	Servo motor rotation direction selection	0000 h		PA14	*POL	Servo motor rotation direction selection	0	
			Encoder pulse phase, setting selection			PC19	*ENRS	Encoder output pulse selection	0000 h	
55	*OPA	Function selection A	Position command acceleration/ deceleration time constant control selection	0000 h		PB25	*BOP1	Function selection B-1	0000 h	
56	SIC	Serial communication time-out selection		0				No corresponding parameter		
58	NH1	Machine resonance suppression filter 1	Notch frequency selection	0000 h		PB01	FILT	Adaptive tuning mode (adaptive filter II)	0000 h	
						PB13	NH1	Machine resonance suppression filter 1	4500	
			Notch depth selection			PB14	NHQ1	Notch shape selection 1	0000 h	
59	NH2	Machine resonance suppression filter 2	Notch frequency selection	0000 h		PB15	NH2	Machine resonance suppression filter 2	4500	
			Notch depth			PB16	NHQ2	Notch shape selection 2	0000 h	
60	LPF	Low-pass filter/ Adaptive vibration suppression control	Low-pass filter selection	0000 h		PB18	LPF	Low-pass filter setting	3141	
						PB23	VFBF	Low-pass filter selection	0000 h	
			Adaptive vibration suppression control level selection			PB01	FILT	Adaptive tuning mode (adaptive filter II)	0000 h	
61	GD2B	Load to motor inertia ratio 2		70		PB29	GD2B	Gain switching load to motor inertia ratio (Note)	7.00	
62	PG2B	Position loop gain 2 changing ratio		100		PB30	PG2B	Position loop gain after gain switching (Note)	0.0	
63	VG2B	Speed loop gain 2 changing ratio		100		PB31	VG2B	Speed loop gain after gain switching (Note)	0	
64	VICB	Speed integral compensation changing ratio		100		PB32	VICB	Speed integral compensation after gain switching (Note)	0.0	
65	*CDP	Gain switching selection		0000 h		PB26	*CDP	Gain switching function	0000 h	
66	CDS	Gain switching condition		10		PB27	CDL	Gain switching condition	10	
67	CDT	Gain switching time constant		1		PB28	CDT	Gain switching time constant	1	
69	CMX2	Command pulse multiplication numerator 2		1		PC32	CMX2	Command input pulse multiplication numerator 2	1	
70	CMX3	Command pulse multiplication numerator 3		1		PC33	CMX3	Command input pulse multiplication numerator 3	1	
71	CMX4	Command pulse multiplication numerator 4		1		PC34	CMX4	Command input pulse multiplication numerator 4	1	
72	SC4	Internal speed command 4		200		PC08	SC4	Internal speed command 4	200	
		Internal speed limit 4						Internal speed limit 4		
73	SC5	Internal speed command 5		300		PC09	SC5	Internal speed command 5	300	
		Internal speed limit 5						Internal speed limit 5		
74	SC6	Internal speed command 6		500		PC10	SC6	Internal speed command 6	500	
		Internal speed limit 6						Internal speed limit 6		
75	SC7	Internal speed command 7		800		PC11	SC7	Internal speed command 7	800	
		Internal speed limit 7						Internal speed limit 7		
76	TL2	Internal torque limit 2		100		PC35	TL2	Internal torque limit 2	100.0	

Note. Parameters related to gain adjustment are different from those for the MR-J2S-_A_ servo amplifier. For gain adjustment, see MR-J4_A_ Servo Amplifier Instruction Manual.

5.1.2 B Type Parameter Comparison Table

B Type parameter is some as MR-J2S Parameter.

Please refer to MR-J24-B-RJ020 Servo Amplifier technical document (No.SH-030125)

Section 6 Troubleshooting

6.1 What to Do When an Alarm Occurs

⚠CAUTION

- If an alarm occurs, remove the cause, secure the safety, and cancel the alarm. After that, you can restart operation. Otherwise, an injury may be caused.
- If "AL.25 Absolute position lost" occurs, make sure to reset the home position. Otherwise, an unexpected operation may be caused.
- If an alarm occurs, turn off servo-on (SON) immediately to cut off power.

POINT

- If an alarm occurs, do not cancel the alarm only to resume operation. Do not repeat just canceling an alarm and resuming operation. Doing so may damage the servo amplifier and the servomotor. After removing the cause of an alarm, wait for about 30 minutes or longer to cool down the system. After that, you can resume operation.
  - ・AL.30 regeneration error
  - ・AL.45 main circuit element overheat
  - ・AL.46 servomotor overheat
  - ・AL.50 overload 1
  - ・AL.51 overload 2

The next page lists the alarms that may occur when the MR-J2S series is replaced by the MR-J4 series. If an alarm or warning occurs, follow the instructions in this section to remove the cause. For any other alarms and warnings listed in the table below, see the MELSERVO-J4 Servo amplifier INSTRUCTION MANUAL TROUBLE SHOOTING issued by Mitsubishi Electric Corporation.

Indication	Title	Error	Cause	Countermeasures
AL.16.1	Encoder initial communication data error 1	An error has occurred in communications between the encoder and the servo amplifier.	1. The encoder connector (CN2) on the servo amplifier side is disconnected.	Make a correct connection.
			2. The encoder conversion cable on Renewal Kit side and the currently used cable are disconnected.	Make a correct connection.
			3. The encoder conversion cable on Renewal Kit side and the currently used cable are incorrectly connected.	Make a correct connection.
			4. The selection of the type of the encoder cable (2-wire type/4-wire type) is incorrect in the parameter setting.	Make correct settings of parameters PC22 (type A) and PC04 (type B).
			5. The selection of the serial encoder is incorrect in the parameter setting.	Make correct settings of parameters PC22 (type A) and PC04 (type B).
			6. Defective encoder cable (broken or short-circuited)	Repair or replace the encoder cable.
			7. Defective encoder	Replace the servomotor.
AL.20.1	Encoder communication incoming data error 1	An error has occurred in communications between the encoder and the servo amplifier.	1. The encoder connector (CN2) is disconnected.	Make a correct connection.
			2. The connectors of the encoder conversion cable on Renewal Kit side and the currently used encoder cable are disconnected.	Make a correct connection.
			3. Defective encoder cable (broken or short-circuited)	Repair or replace the cable.
			4. Defective encoder	Replace the servomotor.
AL.1A.1	Motor combination error	The combination of the servo amplifier and the servomotor is incorrect.	1. The connection is made with an incorrect combination of the servo amplifier and the servomotor (at the time of a secondary replacement or a package replacement).	Combine the components correctly.

＊For the troubleshooting at the time of startup, see section 4.3.

Indication	Title	Error	Cause	Countermeasures
AL.E6.1	Forced-stop alarm	EM2/EM1 is off.	1. A connector on the servo amplifier and the conversion cable of Renewal Kit are disconnected.	Make a correct connection.
			2. The conversion cable of Renewal Kit and a currently used cable are disconnected.	Make a correct connection.
			3. The encoder conversion cable on the Renewal Kit side and a currently used cable are incorrectly connected.	Make a correct connection.
			4. External 24V DC power is not working.	Supply 24V DC power. * Turn on the external 24V DC power source at the same time with the servo amplifier. If the external power source is slow to start up, AL.E6.1 occurs.
			5. The 24V DC power supply cable is not connected to the control signal conversion cable.	

＊For the troubleshooting at the time of a startup, see section 4.3.

6．2 Noise Prevention Measures

Noises can be either the noise that comes from the outside and causes malfunction to the servo amplifier or the noise that comes from the servo amplifier and causes malfunction to peripheral modules. Servo amplifiers are the electronic equipment that operates with weak signals. So, you need several general prevention measures as described below in this section.
In addition to this, more noises are generated because the output from the servo amplifiers is chopped with high carrier frequency. If peripheral modules suffer from malfunction, you should provide noise prevention measures. Your measures may be different depending on the routes of noise transfer.

(1) Noise Prevention Methods

(a) General Prevention Measures

- Avoid parallel arrangement of the drive line (input/output line) and the signal line of the servo amplifier. Avoid bundling them, too. Separate them into different wiring arrangement.
- Use twisted pair shield cables as the connection line with the encoder and as the control signal line. Connect the external shield to the SD terminal.
- Use only one grounding point for the servo amplifier, the servomotor, and so forth.

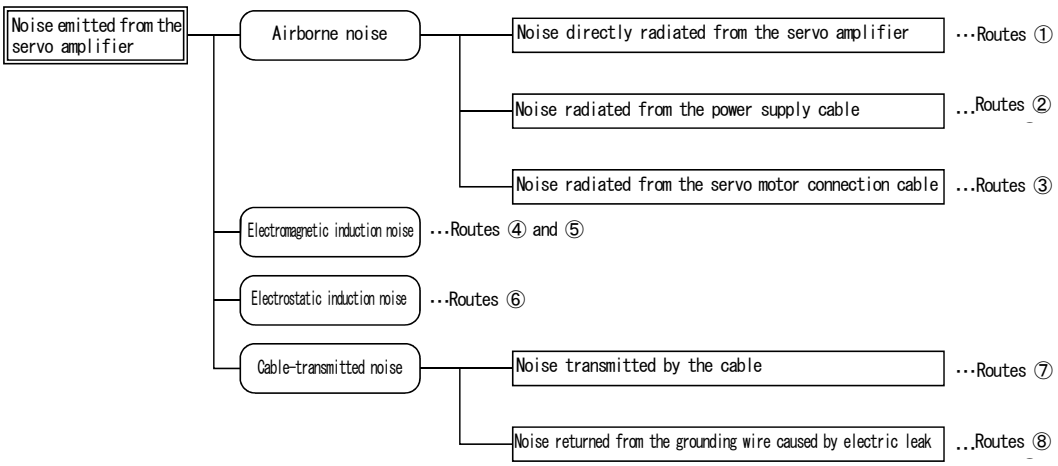
(b) The Noise That Comes from the Outside and Causes Malfunction to the Servo Amplifier

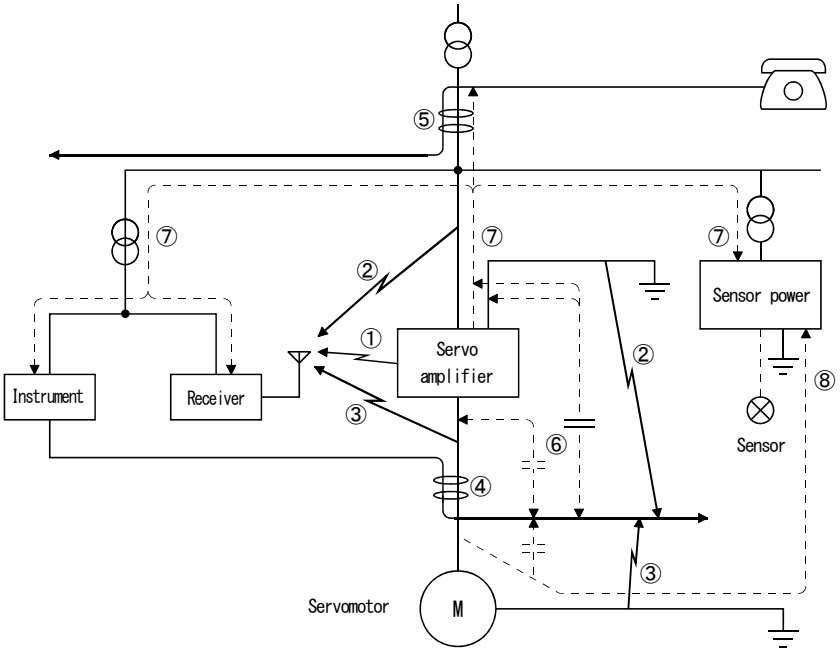
If the servo amplifier is surrounded by several modules that may emit noises (an electromagnetic contactor, an electromagnetic brake, several relays, and so forth), and if the servo amplifier may suffer from malfunction, you need to provide such noise prevention measures as described below:

- Install a surge killer on the module that may emit noises frequently, and suppress noise emissions.
- Install a data line filter on the signal line.
- Use a cable clamp metal fitting to ground the shields of the connection line with the encoder and the control signal line.
- The servo amplifier has a built-in absorber. Some larger external noises and a lightning surge should be also prevented to protect the servo amplifier and other modules. We recommend that you provide a varistor on the power input line of a module.

(c) The Noise That Comes from the Servo Amplifier and Causes Malfunction to Peripheral Modules

Firstly, the noise emitted from the servo amplifier comes from the main part of the servo amplifier or from the cables that are connected to the main circuit (for input/output) of the servo amplifier. Secondly, the noise is induced electromagnetically or electrostatically around the signal lines of the peripheral modules in the vicinity of the main circuit. Thirdly, the noise is transferred by the power supply lines.





Route of Noise Transfer	Countermeasures
①②③	Some modules such as instruments, receivers, and sensors operate with weak signals and, thus, tend to suffer from malfunction caused by noises. If their signal lines are housed with the servo amplifier in the same panel, or if such lines are arranged in the vicinity of the servo amplifier, they may suffer from malfunction caused by airborne noises. In such a case, you should provide such countermeasures as listed below: 1. When installing a module vulnerable to noises, place the module as far apart as possible from the servo amplifier. 2. When arranging a signal line vulnerable to noises, place the line as far apart as possible from the input/output lines to/from the servo amplifier. 3. Avoid arranging the signal lines in parallel with the drive lines (the input/output lines to/from the servo amplifier). Avoid bundling them together for wiring. 4. Attach line noise filters and radio noise filters on the input/output lines to suppress the noises emitted form the cables. 5. Use shielded lines as signal lines and drive lines. Use separate metal ducts to insulate them.
④⑤⑥	If a signal line is arranged in parallel with a drive line, and/or if a signal line is bundled with a drive line, noises may be induced electromagnetically and/or electrostatically. Such noises may be transferred to a signal line to cause malfunction. In such a case you should provide such countermeasures as listed below: 1. When installing a module vulnerable to noises, place the module as far apart as possible from the servo amplifier. 2. When arranging a signal line vulnerable to noises, place the line as far apart as possible from the input/output lines to/from the servo amplifier. 3. Avoid arranging the signal lines in parallel with the drive lines (the input/output lines to/from the servo amplifier). Avoid bundling them together for wiring. 4. Use shielded lines as signal lines and drive lines. Use separate metal ducts to insulate them.
⑦	If a peripheral module is connected to the same power source as the servo amplifier, the noises emitted from the servo amplifier may be transferred by way of the power lines to cause malfunction of the peripheral module. In such a case, you should provide such countermeasures as listed below: 1. Provide a radio noise filter on the drive line (input/output line) of the servo amplifier. 2. Provide a line noise filter on the drive line of the servo amplifier.
⑧	If a closed loop is formed with the ground wires from a peripheral module and the servo amplifier, electric leak may, by way of the closed loop, cause malfunction of the peripheral module. In such a case, you may try removing the grounding wire of the peripheral module, which may cease the malfunction.

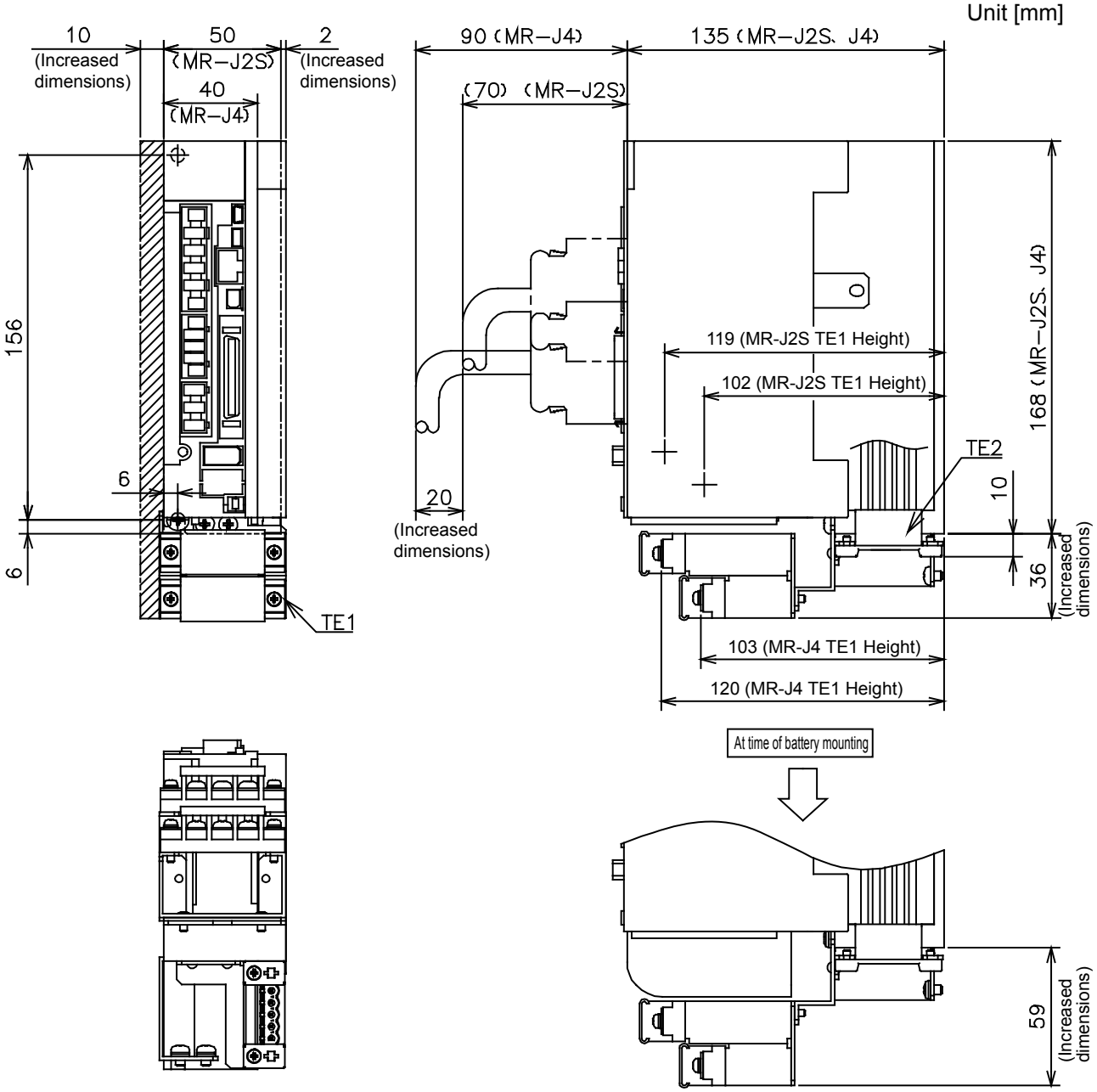
Section 7　Outline Dimensions

7.1 Renewal Kit

* The dimensions are the same for A and B types.

(1) SC-J2S(B)J4KT02K

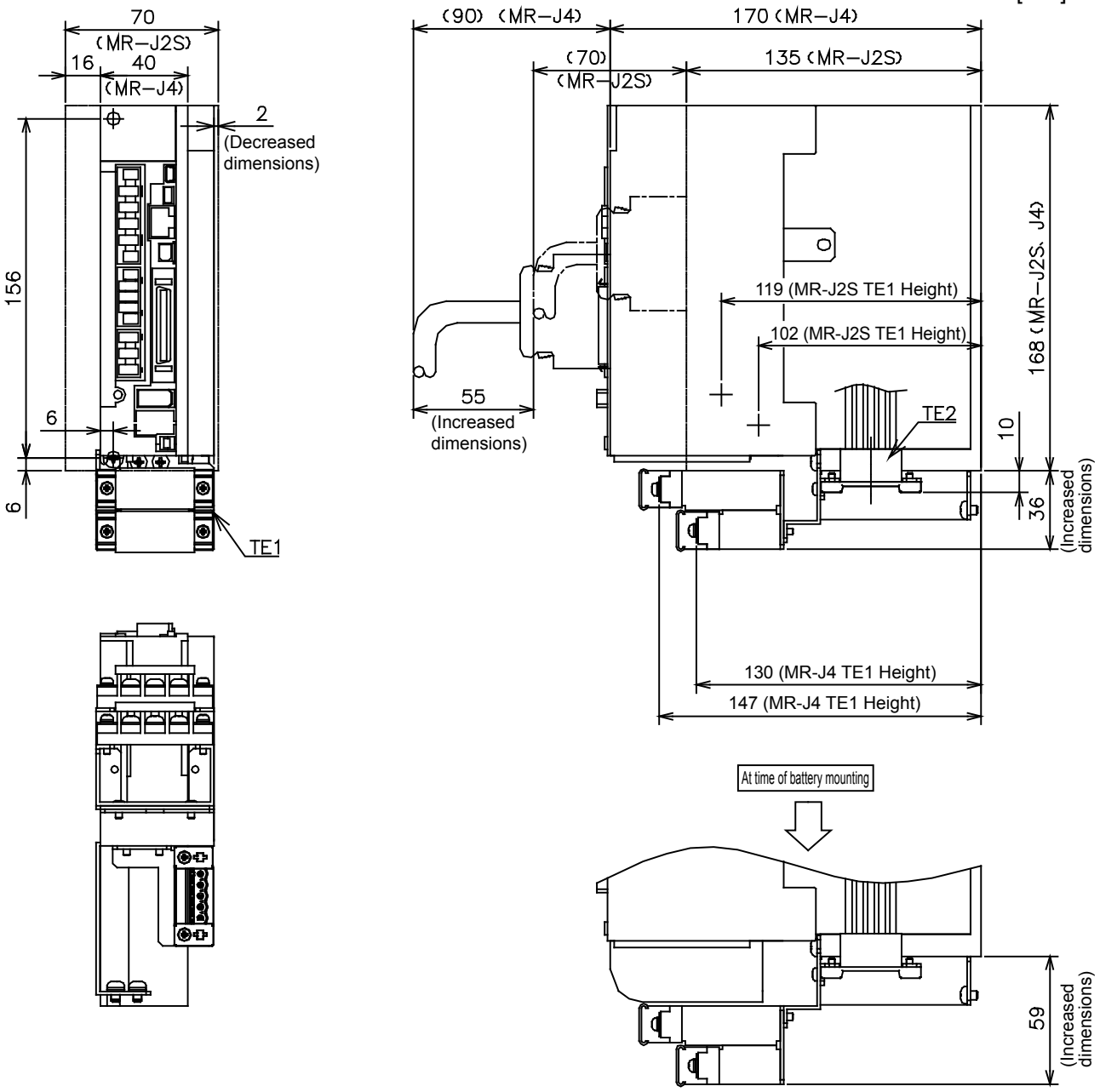
Unit [mm]



Note. Wiring and other items in the renewal kit are not drawn so that mounting method can be easily seen.

(2) SC-J2S (B) J4KT06K

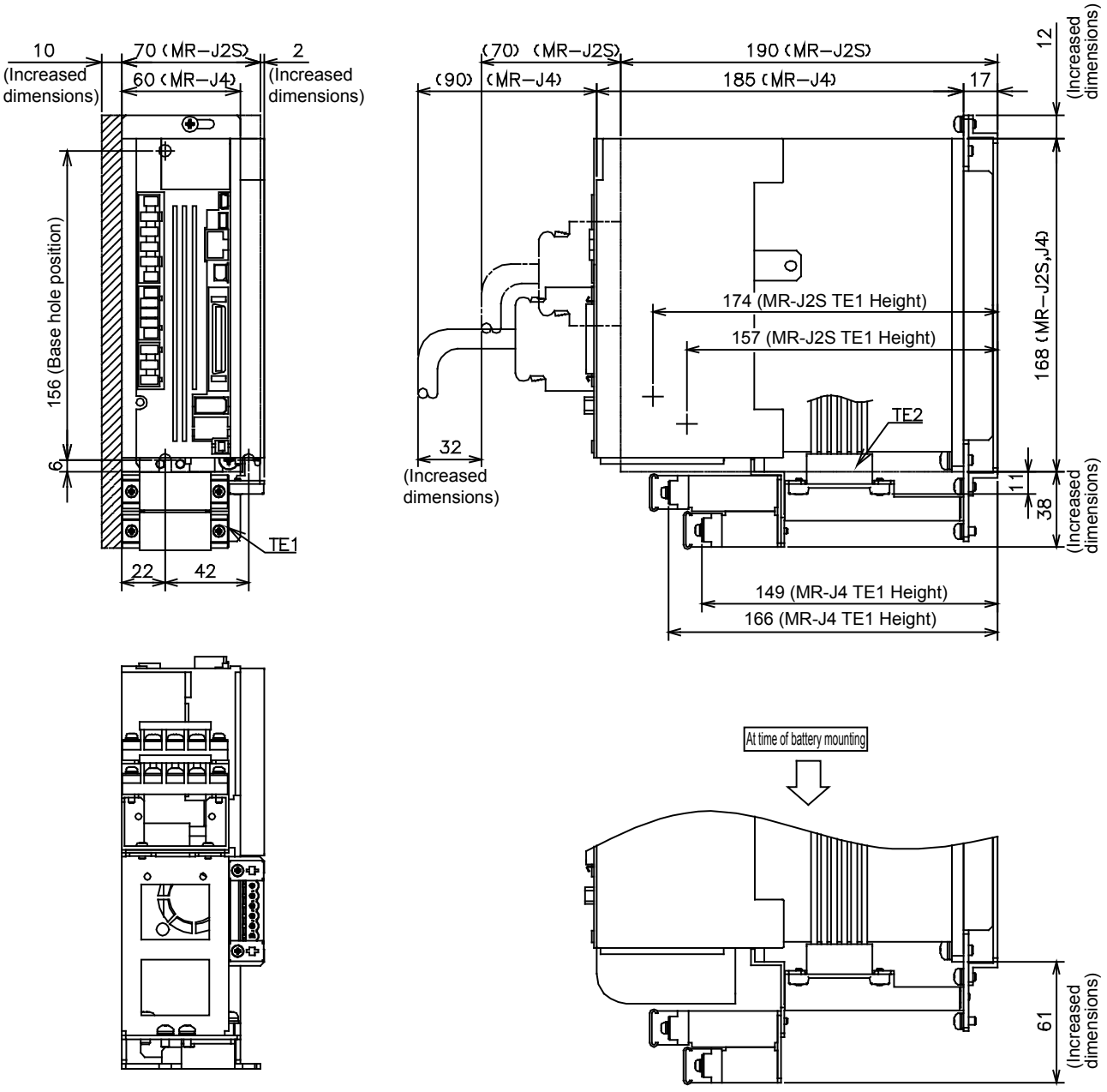
Unit [mm]



Note. Wiring and other items in the renewal kit are not drawn so that mounting method can be easily seen.

(3) SC-J2S (B) J4KT1K

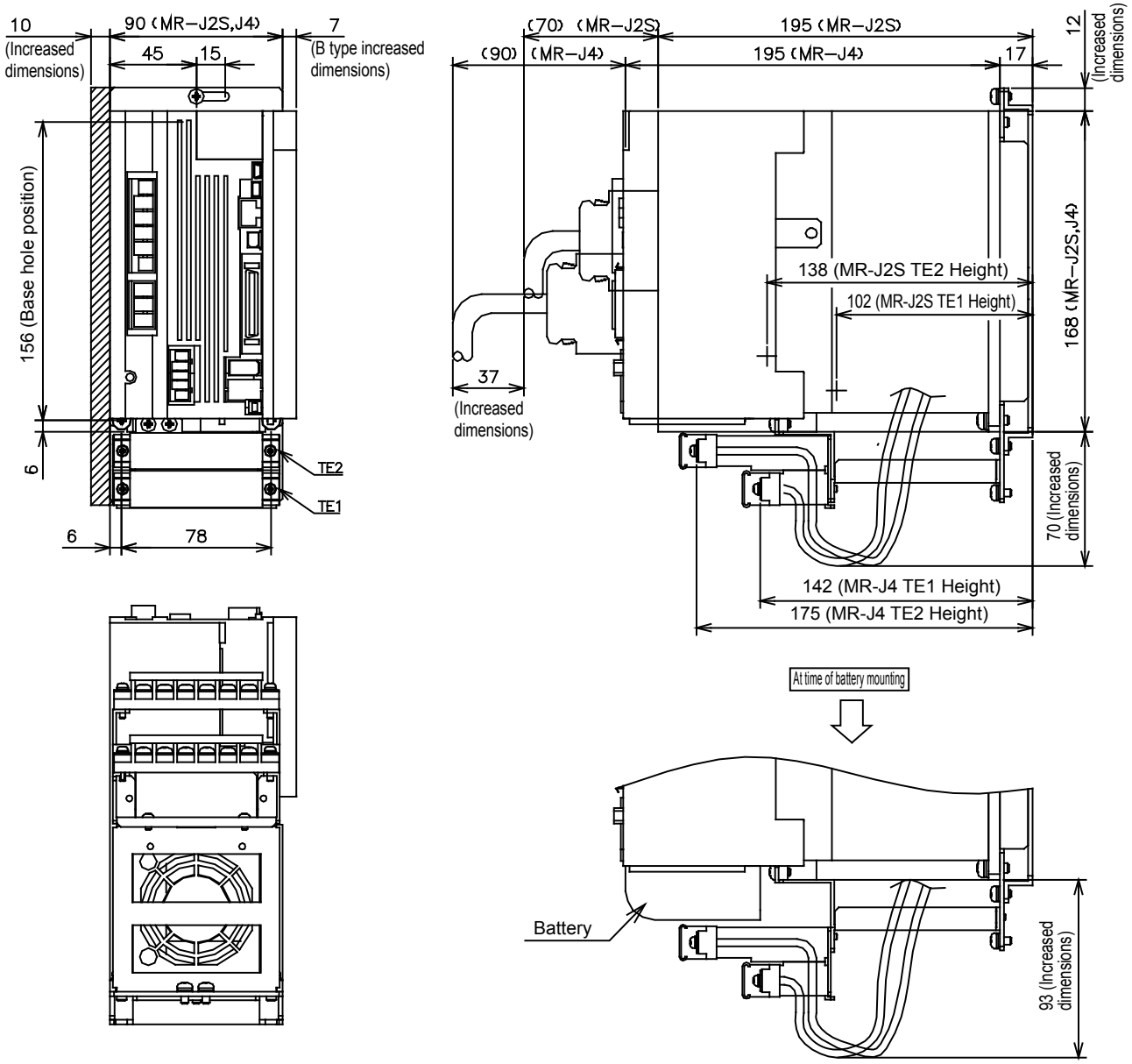
Unit [mm]



Note. Wiring and other items in the renewal kit are not drawn so that mounting method can be easily seen.

(4) SC-J2S (B) J4KT3K

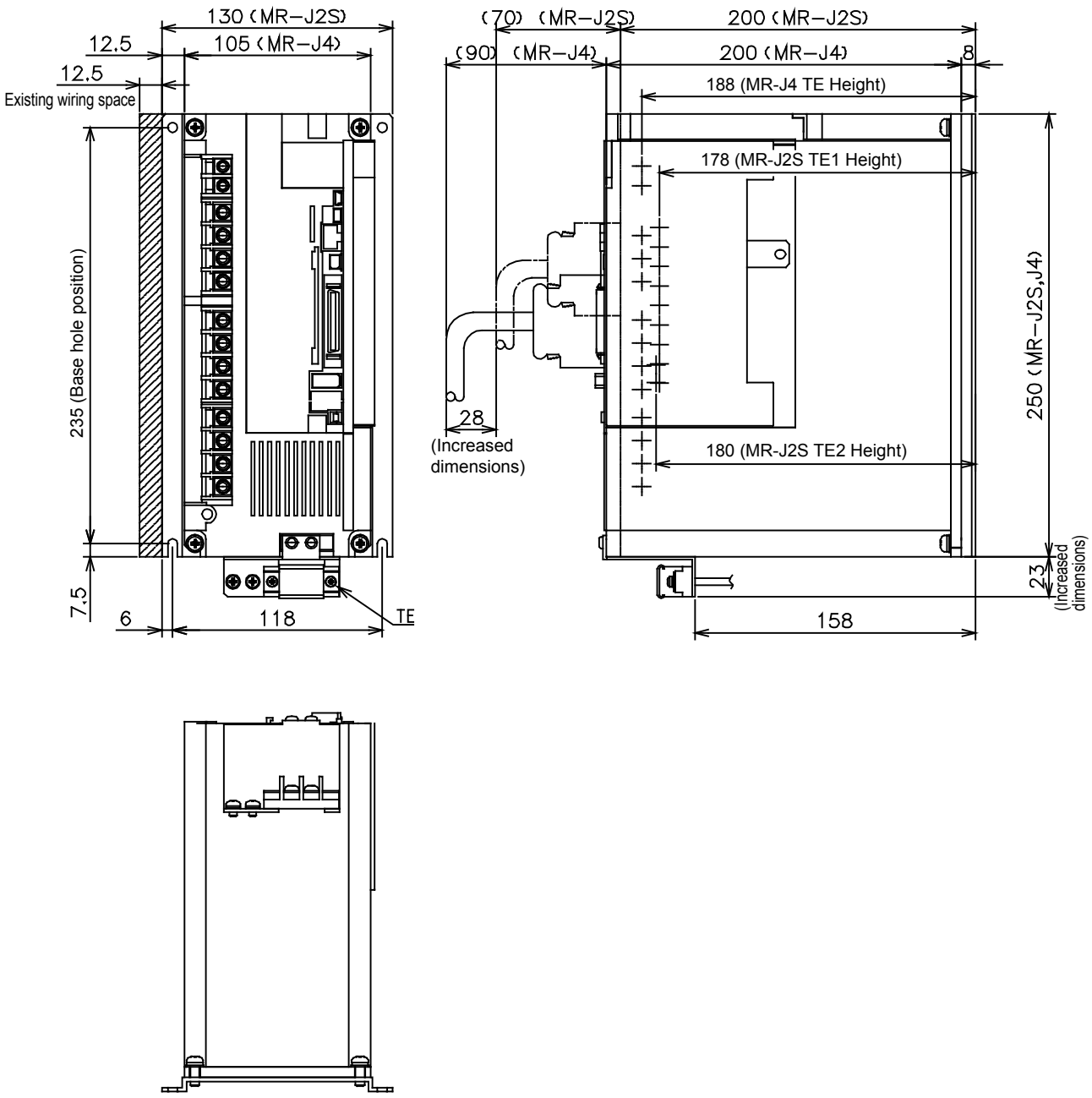
Unit [mm]



Note. Wiring and other items in the renewal kit are not drawn so that mounting method can be easily seen.

(5) SC-J2S (B) J4KT5K

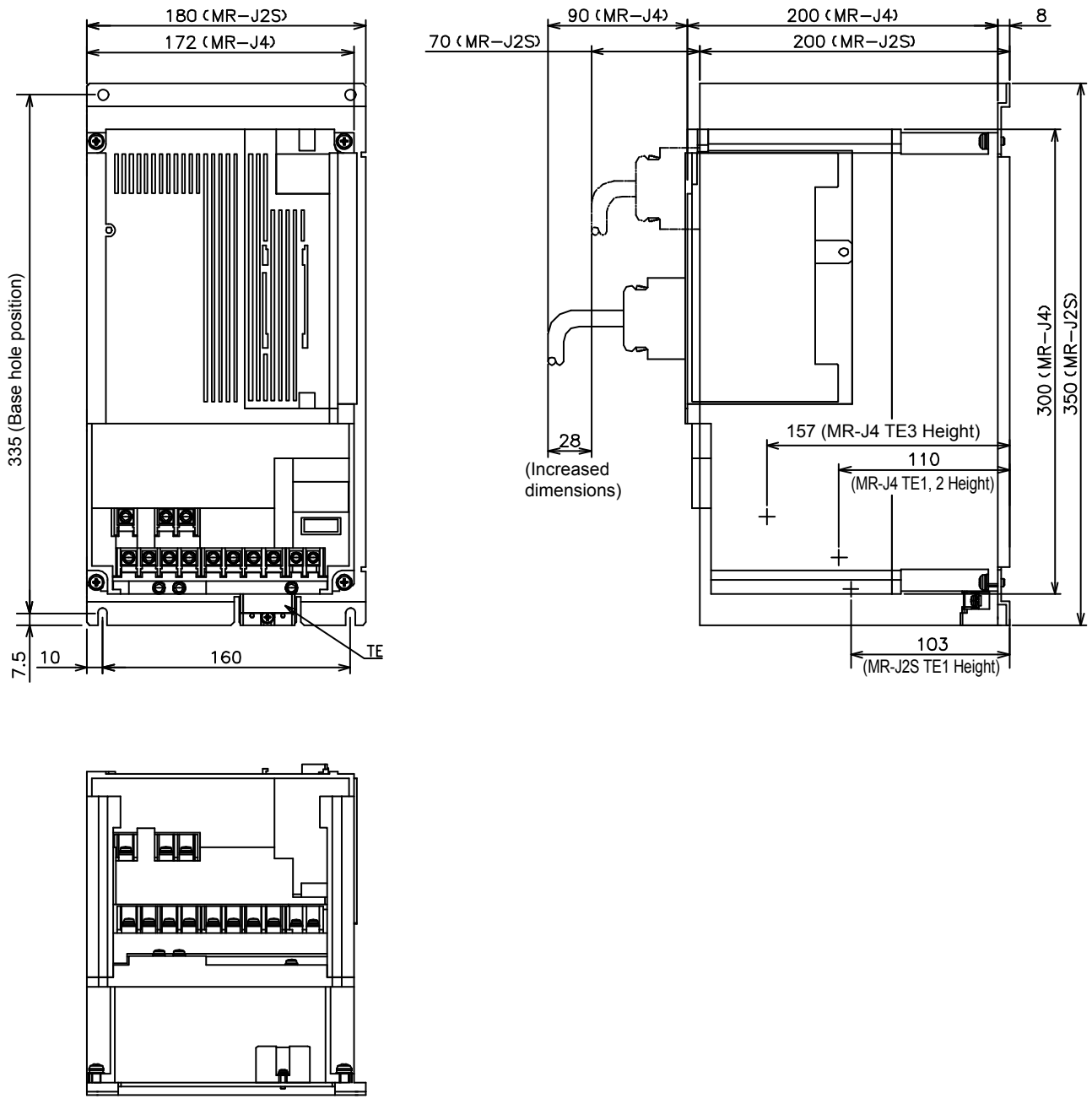
Unit [mm]



Note. Wiring and other items in the renewal kit are not drawn so that mounting method can be easily seen.

(6) SC-J2S (B) J4KT7K

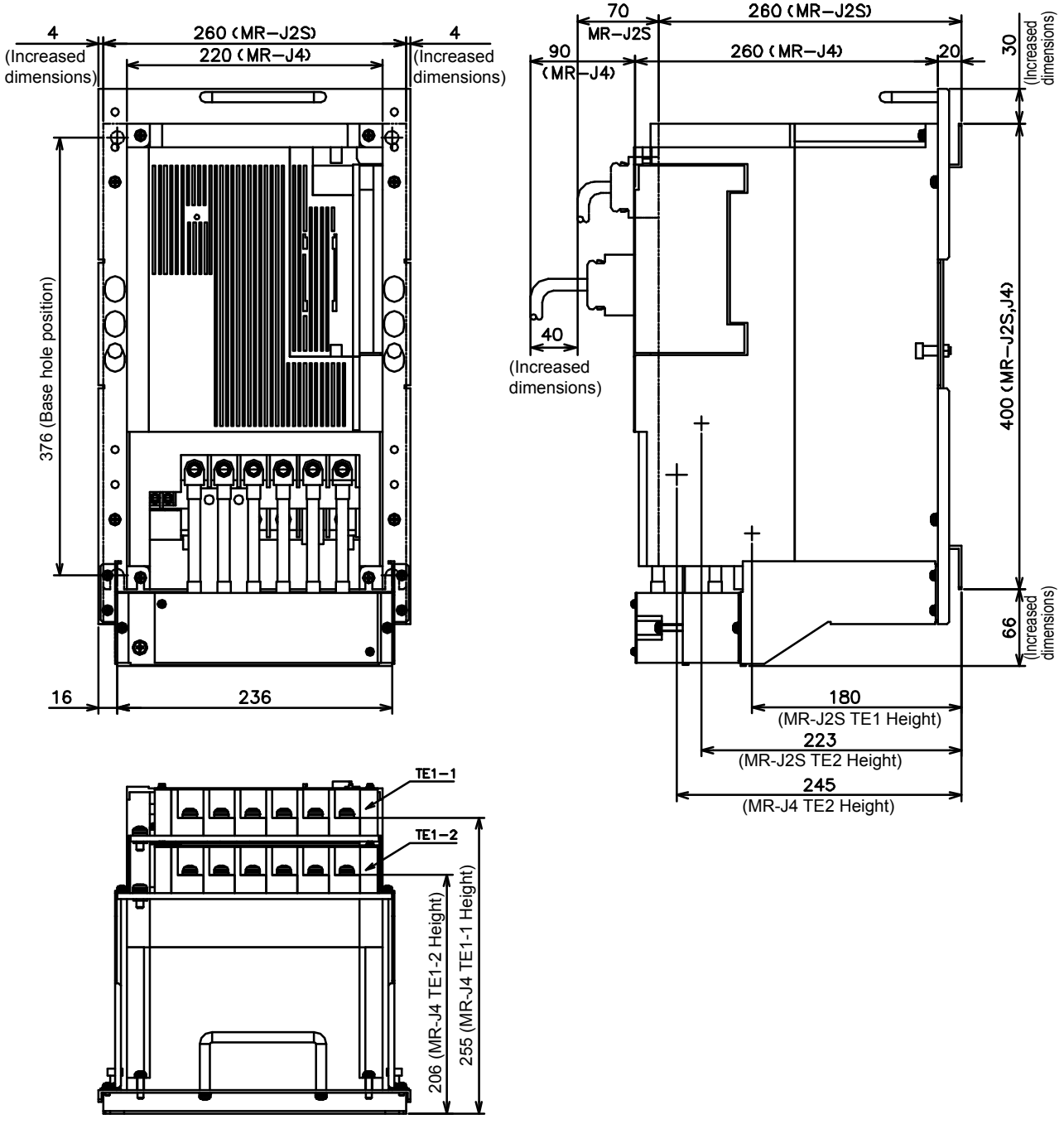
Unit [mm]



Note. Wiring and other items in the renewal kit are not drawn so that mounting method can be easily seen.

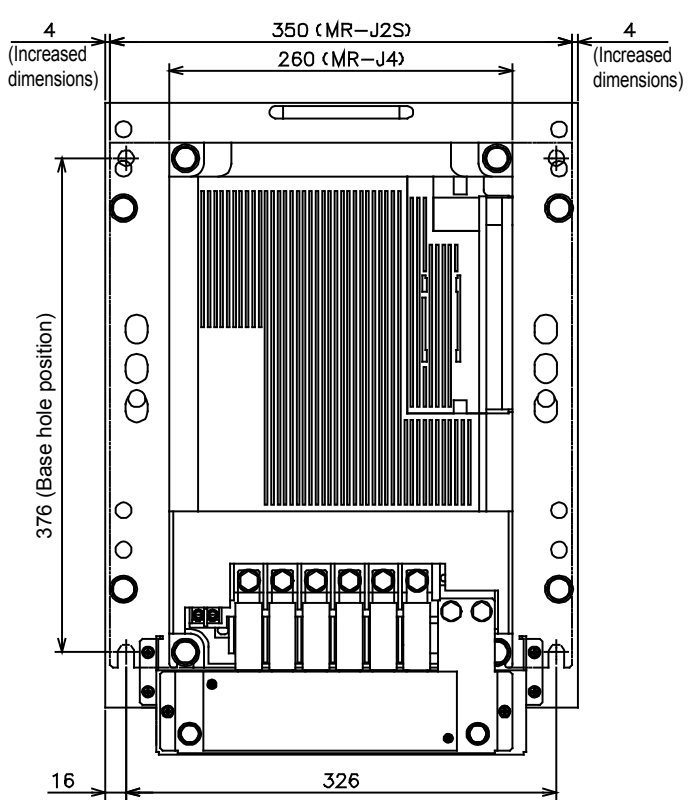
(7) SC-J2S (B) J4KT15K

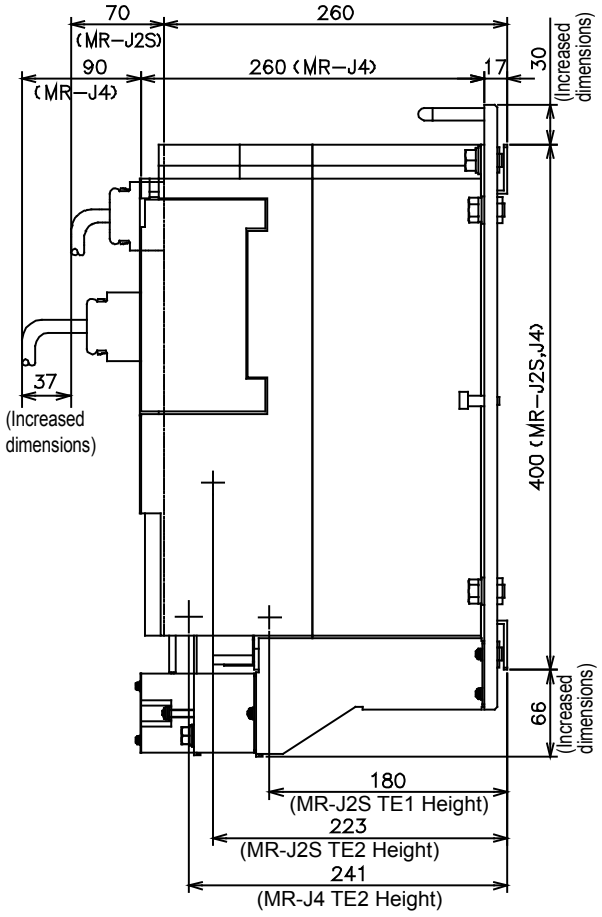
Unit [mm]

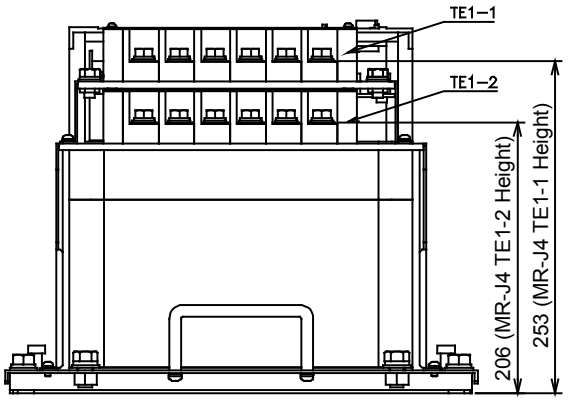


(8) SC-J2S (B) J4KT22K

Unit [mm]





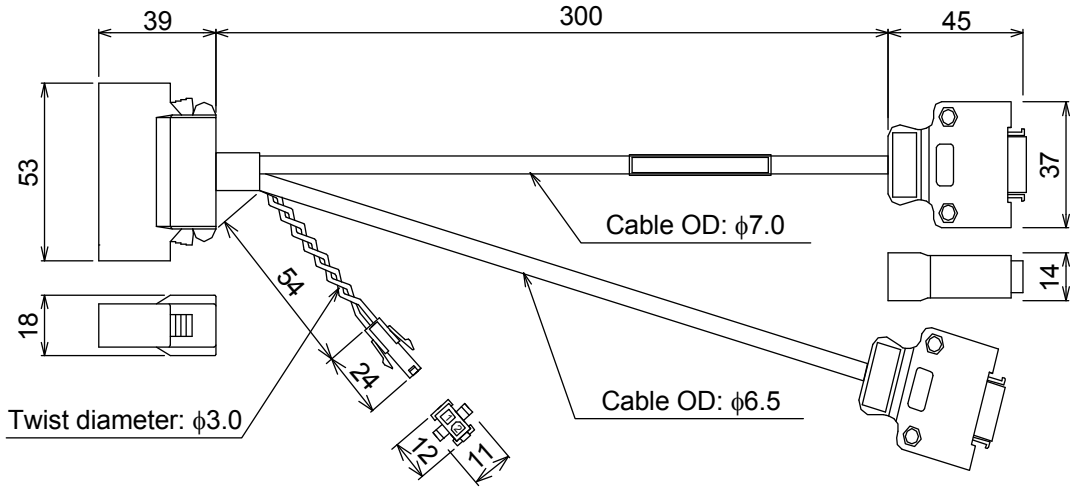


7.2 Conversion Cable

7.2.1 Conversion Cable for Amplifier

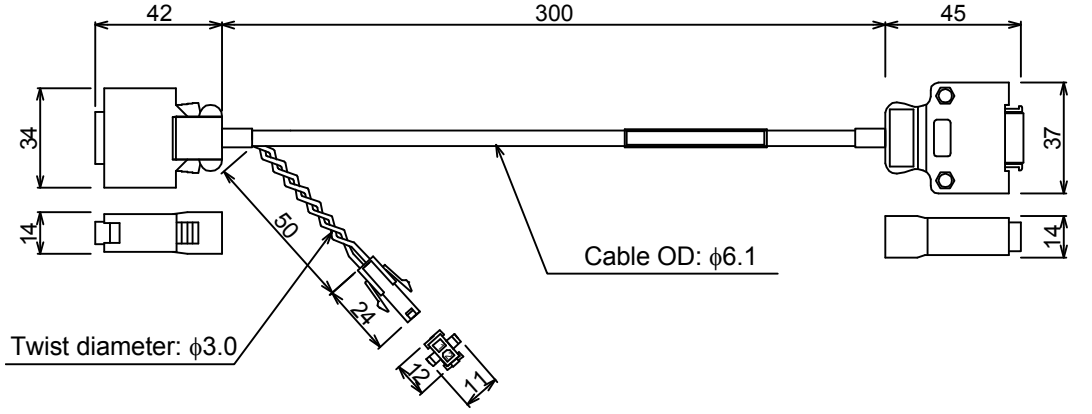
(1) SC-J2SJ4CTC03M

[Unit: mm]



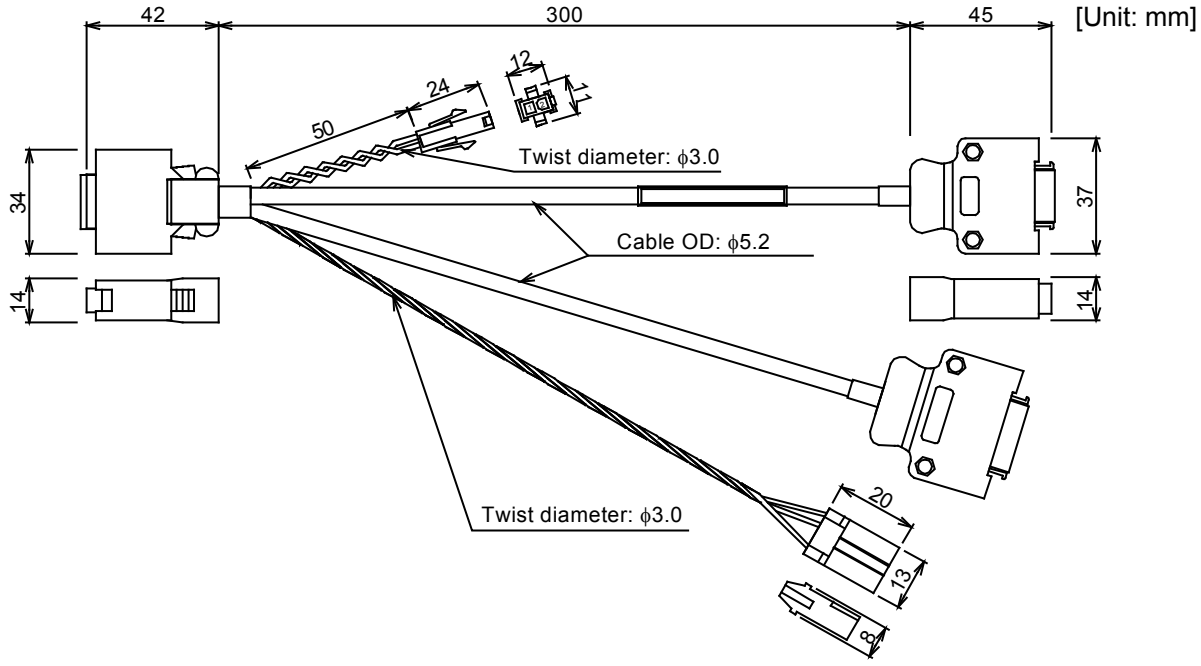
(2) SC-J2SBJ4CT1C03M

[Unit: mm]



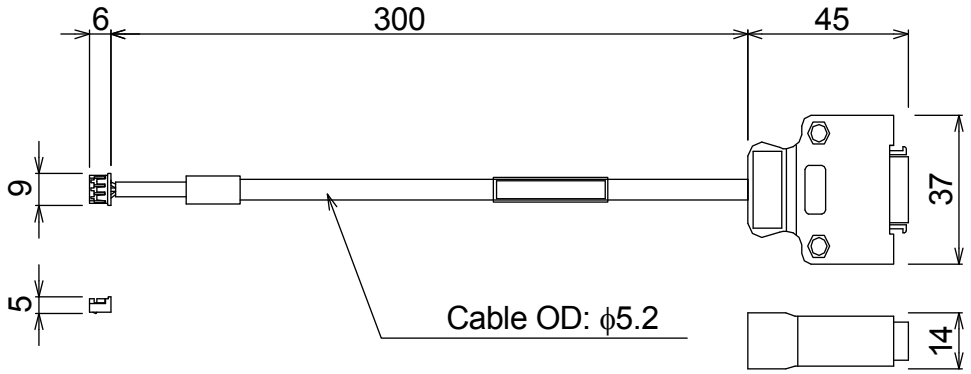
(3) SC-J2SBJ4CT2C03M

[Unit: mm]



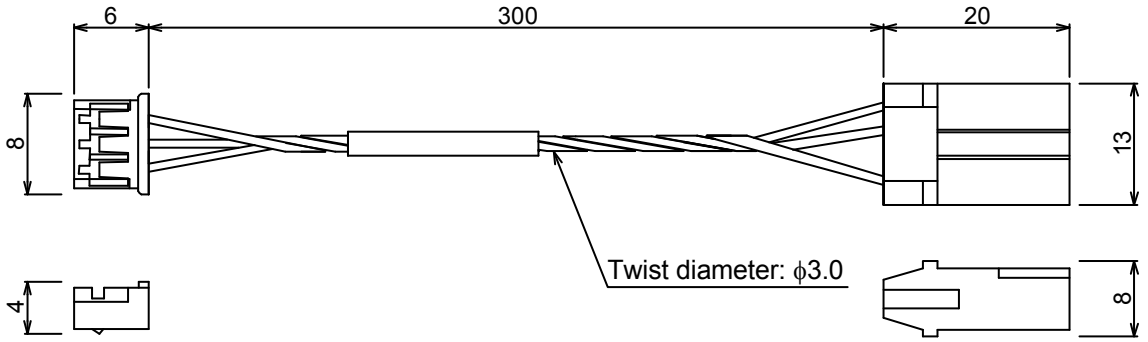
(4) SC-J2SJ4MOC03M

[Unit: mm]



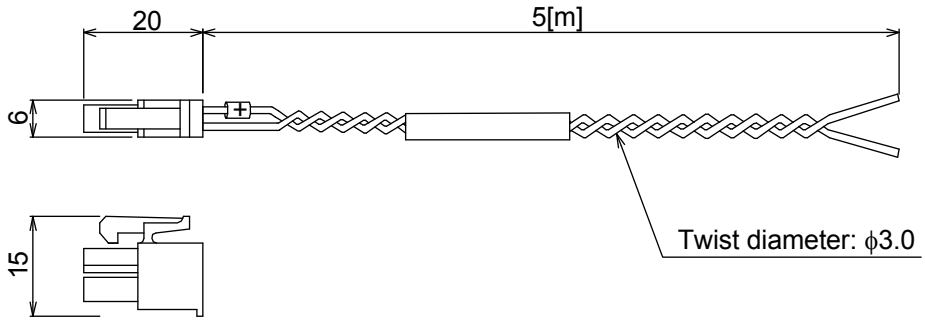
(5) SC-J2SJ4MO2C03M

[Unit: mm]



(6) SC-J2SJ4CTPWC5M

[Unit: mm]

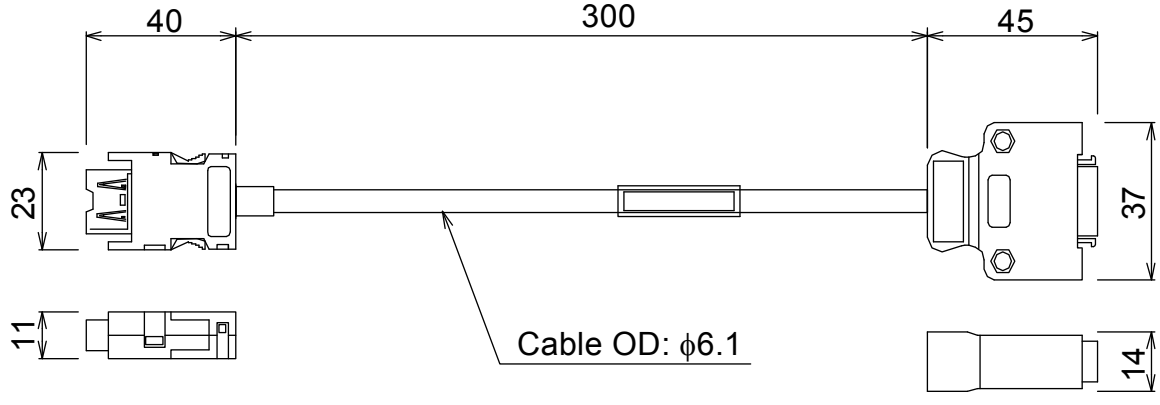


Connecting diagram

Signal name	Wire color
24 V DC+	Red
24 V DC-	White

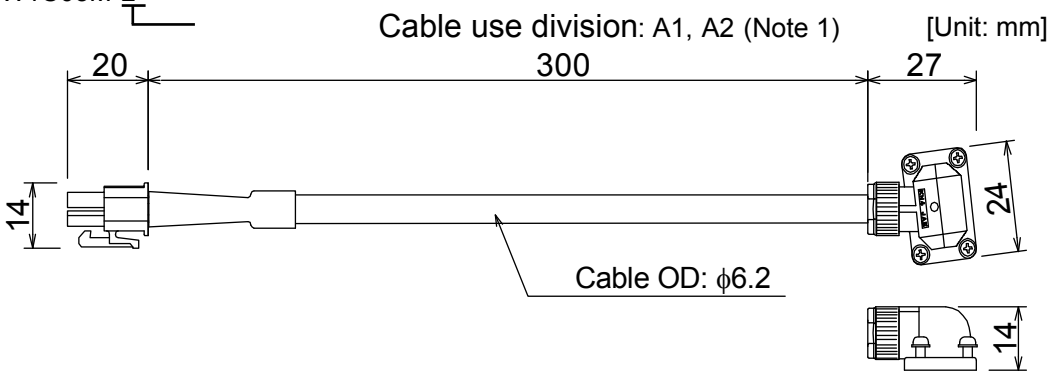
(7) SC-J2SJ4ENC03M

[Unit: mm]

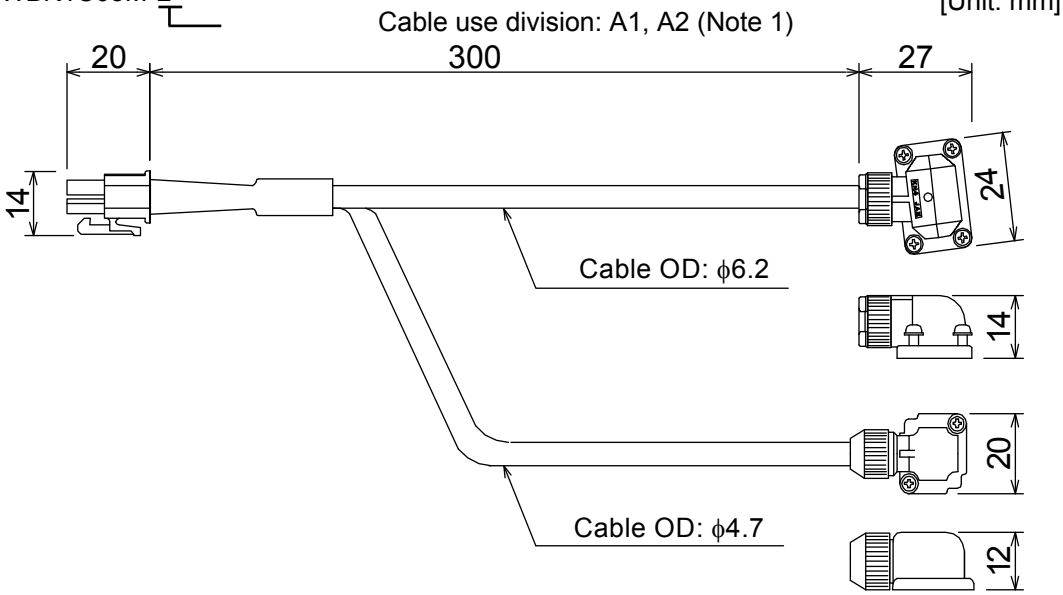


7.2.2 Conversion Cable for Motor Power

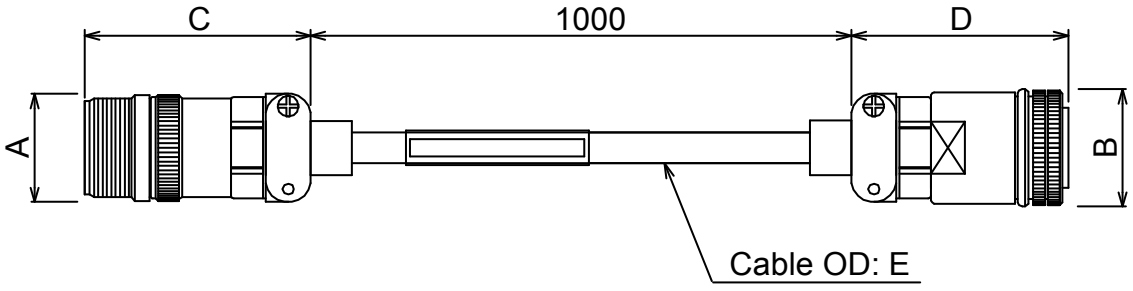
(1) SC-J2SJ4PW1C03M-■



(2) SC-J2SJ4PWBK1C03M-■



(3) SC-SAJ3PW2KC1M-S2
(4) SC-HAJ3PW1C1M
(5) SC-J2SJ4PW2C1M



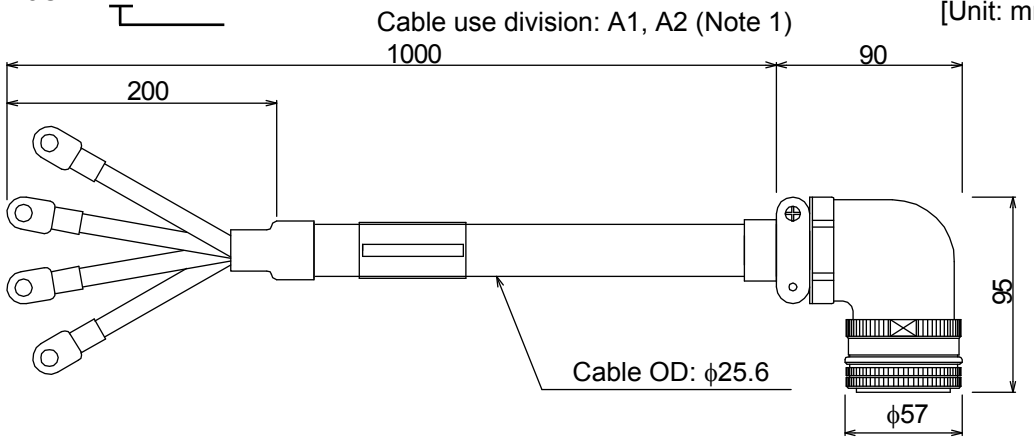
Item		Specifications		
Model		SC-SAJ3PW2KC1M-S2	SC-HAJ3PW1C1M	SC-J2SJ4PW2C1M
Connector dimensions	A	ϕ35	ϕ39	ϕ38
	B	ϕ35	ϕ41	ϕ44
	C	68	74	74
	D	78	77	77
Cable shape	E	12	14	14

See the next page regarding Note 1.

[Unit: mm]

(6) SC-J2SJ4PW3C1M-■

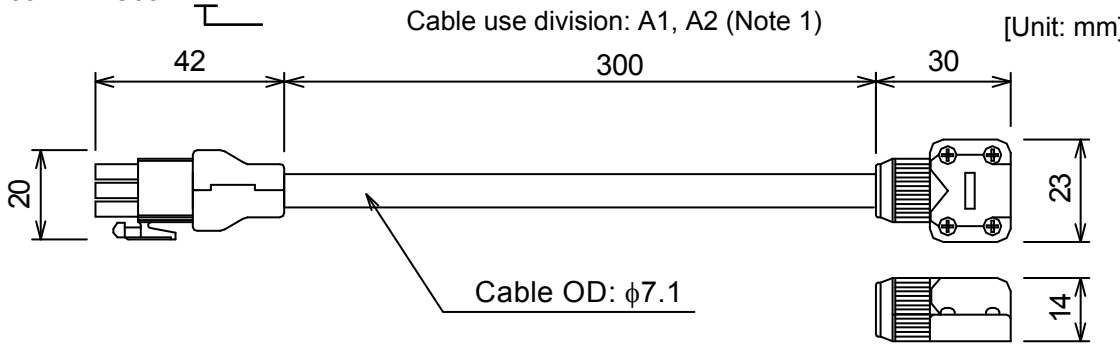
[Unit: mm]



7.2.3 Conversion Cable for Motor Encoder

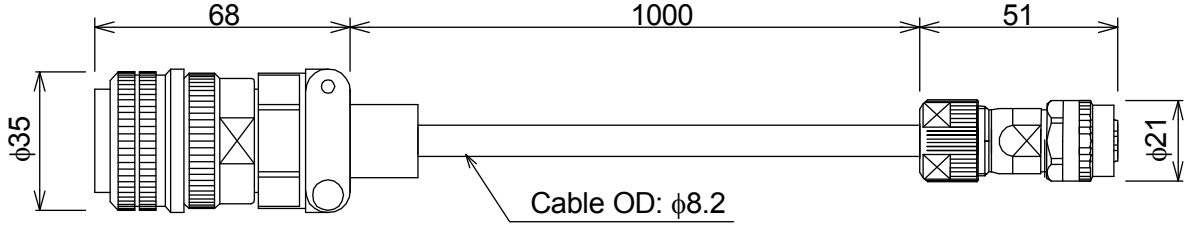
(1) SC-HAJ3ENM1C03M-■

[Unit: mm]



(2) SC-HAJ3ENM3C1M

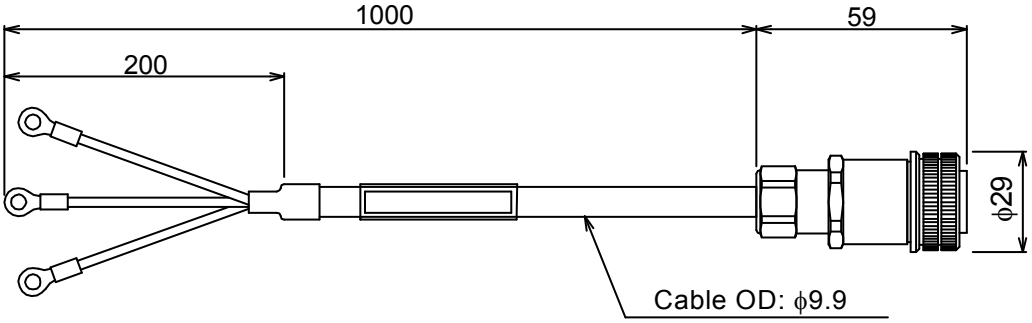
[Unit: mm]



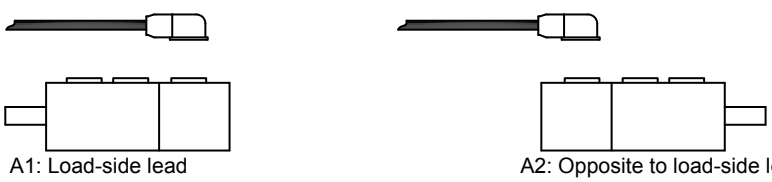
7.2.4 Conversion Cable for Motor Cooling Fan

[Unit: mm]

(1) SC-J2SJ4FAN1C1M



Note 1. Cable usage division



◆ Terms and Conditions of Our Warranty

Before you start using our product, please take time to confirm the terms and conditions of our warranty, which are as described below.

Period and Scope of Free-of-charge Warranty

During the period of our free-of-charge warranty, if a defect or fault (both referred to "Defect" from here) occurs to our product, resulting from our responsibility, we, by way of your distributor or a branch/local office of ours, repair such product free of charge or provide you with a replacement product. If, however, we are obliged to dispatch our engineer to an isolated island or any such distant area for a repair, we may charge you for the actual expenses of dispatching such engineer.

■Period of Free-of-charge Warranty

Our free-of-charge warranty on our product lasts for 1 year after you purchase our product or after we deliver a product to a location designated by you. The maximum period of our free-of-charge warranty, however, is 18 months after the production including the transport and storage period after the shipment by us, which may last for 6 month at the maximum. If our product is repaired, the period of our free-of-charge warranty on the product does not exceed the warranty period designated with the product before the repair.

■Scope of Free-of-charge Warranty

（1）The scope of our free-of-charge warranty is limited to the cases where the condition of use, the method of use, the environment for use, and so forth are normal as stated in the conditions, the precautions, and so forth described in the manual, on the labels on the main part of our product, and so forth.

（2）Even during the period of our free-of-charge warranty, the cases listed below are excluded from the scope of our free-of-charge warranty:

① Defect that is caused from your inappropriate storage and/or handling, carelessness, mistake, or the like

② Defect that is caused from a modification, repair, or the like made to our product by you without obtaining our permission

③ Defect that is caused from the use for a purpose other than the purpose intended by us or caused from the use that is out of the common sense of the industry

④ Defect that is avoidable if a cable, an accessory, or a component is correctly maintained and/or replaced as instructed in the manual or the like

⑤ Defect that is caused by an event that is not predictable from the level of the science and technology at the time of shipment by us

⑥ Defect that is caused by an event that is out of the scope of our responsibility such as an external factor caused by force majeure including a fire, natural disaster including earthquake, lightning, and storm and flood damage, and so forth

⑦ Any other Defect that is out of the scope of our responsibility and Defect that is recognized by you as being out of our scope

Period of Our Charged Warrantee after Stopping the Production

We are capable of accepting your request for a charged repair of our product for 7 years after discontinuation of the production of the product. After production of a product is discontinued, you are not able to make us deliver the product or a replacement product.

Disclaimer of Warranty for Loss of Opportunity, Secondary Damages, and So Forth

We do not assume any responsibility for any damages that are caused by an event that, regardless of whether the event occurs within the period of our free-of-charge period or not, do not fall under our responsibility, for loss of opportunity or loss or inadequacy of profits having occurred to you caused from Defect of our product, for damages, secondary damages, compensation for accidents, damages on anything other than our product caused from special circumstances, regardless of whether such circumstances are foreseen by us or not, and for compensation for any other business activities.

Alteration in Product Specifications

The specifications described in catalogs, written specifications, technical materials, and so forth may be altered without prior notice to you.

Application of Our Product

■Condition of Use

Our product should be used under the conditions where the purpose of the use does not lead to any serious accident even if Defect, technical difficulty, or the like should occur and where a backup procedure or the like is observed.

■Exclusion of Application and So Forth

Our product is designed and produced for the use in general industrial fields. We exclude the application of our product from the use that may have great influence over the general public such as a nuclear power plant, any other power plant, and public transportation including railroad and skyline and from the use that requires a special quality assurance system for an application to vehicle equipment, medical equipment, amusement equipment, safety equipment, incineration equipment, and facility that is supposed to conform to regulations by governmental organizations and/or specific industries.

We exclude the application of our product from the use that requires, as great influence is expected over human lives and properties, extremely high reliability on the safety and control system.

Our Service Overseas

This product is supposed to be used in Japan only. If you use this product outside Japan, we do not provide any after-sales service on site. If any anomaly or Defect occurs, and if you need our after-sales service, we are willing to accept your request in Japan.

Revision History

*The document number of this manual is printed at the bottom left on the last page.

Date of Printing	* Document Number of This Manual	Revision
August 2012	X903120701	First edition
July 2013	X903120701A	Whole part Addition of: Type A - 5 to 22kW; Type B - 0.1 to 22kW Section 1.6 Correction of typo: Type name of the power conversion cable Section 7.2.2 Ditto Section 1.6 Addition of: Note on monitor output (motor rotational speed) Section 4.1.1 Ditto Section 5.2 Ditto (Table 1-7)
July 2013	X903120701B	Section 4.2 Addition of: Description of required parameters Section 5
May 2021	X903120701C	Section 2.8 Delete

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Product information on the Internet

Home Page URL http://www.melsc.co.jp/business/

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