

MELSERVO-J2-Super Transition Guide

Move Forward with MELSERVO-J4

Complete Support for Upgrading Your
MELSERVO-J2S to MELSERVO-J4



MITSUBISHI SERVO AMPLIFIERS & MOTORS

MELSERVO J4

A Variety of Supports for Upgrading

Catalogs and Handbooks



■ MELSERVO-J4 Catalog L(NA)03058

This catalog includes MR-J4 series servo amplifiers, HG series servo motors and compatible options.



■ Transition from MELSERVO-J2-Super/J2M Series to J4 Series Handbook L(NA)03093

This handbook explains how to replace your MR-J2S/J2M to MR-J4 series. Be sure to read through this handbook when considering and implementing the replacement.



■ New Product Release of Conversion Unit for SSCNET of MR-J2S-B SV1306-1

This brochure announces a new release of MR-J4 series servo amplifier and a conversion unit for connecting to SSCNET of MR-J2S-B. Specifications of the servo amplifier and the conversion unit are also listed.

Mitsubishi Electric Corporation



■ MR-J2S Renewal Tool Catalog X901307-312

This guide introduces a renewal tool for replacing MR-J2S to MR-J4. The renewal tool allows to use the existing wiring and mounting holes, making the replacement simple and fast. With this renewal tool, you can also follow through the steps of first replacing only the servo amplifier and then later the servo motor.



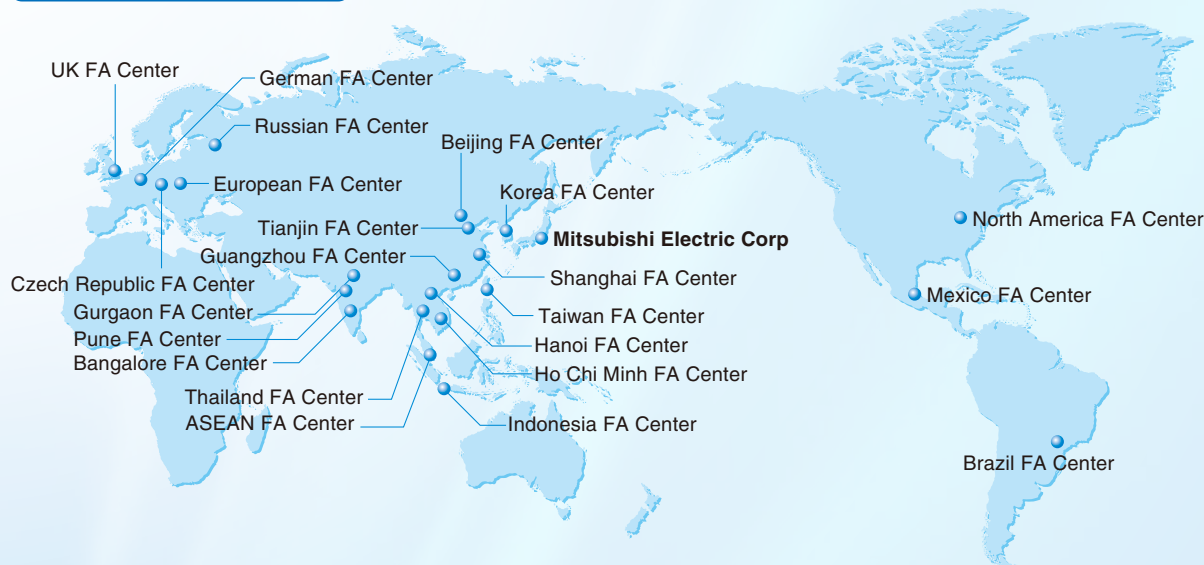
■ Manual for Replacement from MELSERVO-J2S Series Using MR-J2S Renewal Tool X903130707

This handbook explains how to replace your MR-J2S to MR-J4, using the renewal tool. Be sure to read through this handbook when considering and implementing the replacement.

Mitsubishi Electric System & Service Co., Ltd.

Your MR-J2S to MR-J4

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From MELSERVO-J2S Series to MELSERVO-J4 Series

Features of MELSERVO-J4 Series

▶ Trusted technology makes an evolutionary leap forward

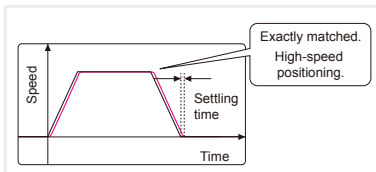
Man, machine and environment in perfect harmony



The leading edge in drive control

- Industry-leading level of basic performance
- High-resolution absolute encoder
- Advanced one-touch tuning
- Advanced vibration suppression control II
- Robust filter

Advanced one-touch tuning



Vibration suppression control and robust filter adjustment with one-touch.



Safety and Convenience

- Integrated functional safety (IEC/EN 61800-5-2)
- Tough drive functions
- Large capacity drive recorder
- Machine diagnosis function
- MR Configurator2

Large capacity drive recorder



Data over certain period of time are stored in RAM

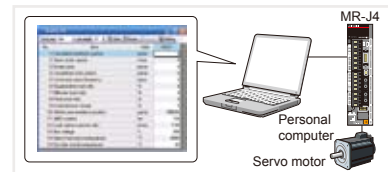
Data are written in non-volatile memory, and the operation is stopped.



An evolution in eco-friendly design

- Power monitor function
- Energy-conservation through using a power regeneration common converter and/or improved machine performance

Power monitor function



Power consumption and other data are monitored with MR Configurator2.

Industry-leading basic performance

- Our original servo control architecture is evolved from the conventional two-degrees-of-freedom model adaptive control and applied to the dedicated execution engine. Speed frequency response is increased to 2.5 kHz, achieving the industry-leading level of speed*. [MR-J2S: 0.55 kHz]

* Based on Mitsubishi Electric research as of July 2013

- Rotary servo motors achieve high-accuracy positioning and smooth rotation with a high-resolution encoder (4,194,304 pulses/rev) and improved processing speed. [MR-J2S: 131,072 pulses/rev]

High-response system achieved with SSCNET III/H

- The fiber-optic cables thoroughly shut out noise that enters from the power cable or external devices. Noise tolerance is dramatically improved as compared to metal cables.
- Communication speed is increased to 150 Mbps full duplex (equivalent to 300 Mbps half duplex). System response is dramatically improved. [MR-J2S: 5.6 Mbps]
- Smooth control of machine is possible using high-speed serial communication with cycle times of 0.22 ms. [MR-J2S: 0.88 ms]
- Long distance wiring is possible up to 1600 m per system (maximum of 100 m between stations × 16 axes). Thus, it is suitable for large-scale systems. [MR-J2S: maximum of 30 m]

MELSERVO-J2S J4 TRANSITION GUIDE

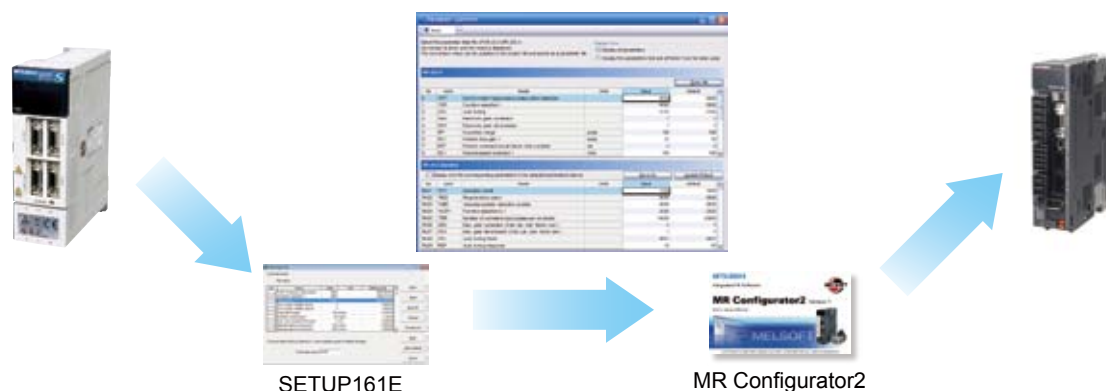
Support Tools and Unit for Easy Replacement

▶ Parameter conversion tools

MR-J2S parameters can be simply converted. Refer to the help in the tools for the operation and the precautions. Refer to the parameter correspondence table in "Transition from MELSERVO-J2-Super/J2M Series to J4 Series Handbook (L(NA)03093)"

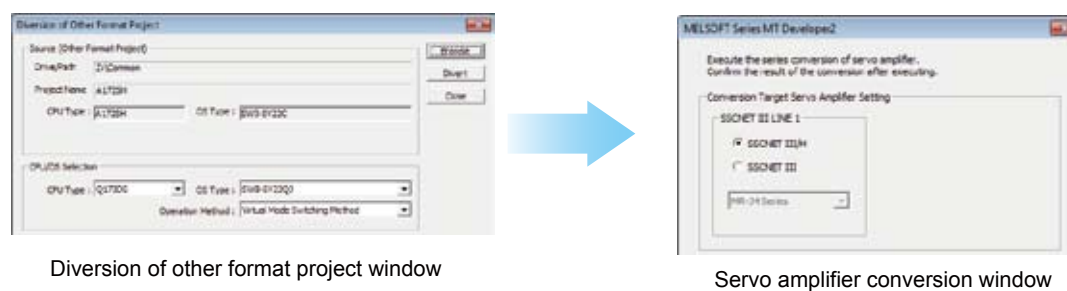
For MR-J2S-A

- 1) MRZJW3-SETUP161E (setup software for MR-J2S) reads the parameters from MR-J2S-A and saves as a parameter file.
- 2) The parameters are converted to those for MR-J4-A, using the parameter converter function of MR Configurator2 (setup software for MR-J4).
- 3) MR Configurator2 writes the converted parameters to MR-J4-A.



For MR-J2S-B

With GX Works2 (Simple Motion Module Setting Tool) or MT Works2, the project conversion function used for changing the controller also converts the servo parameters.



▶ Conversion unit for SSCNET of MR-J2S-B

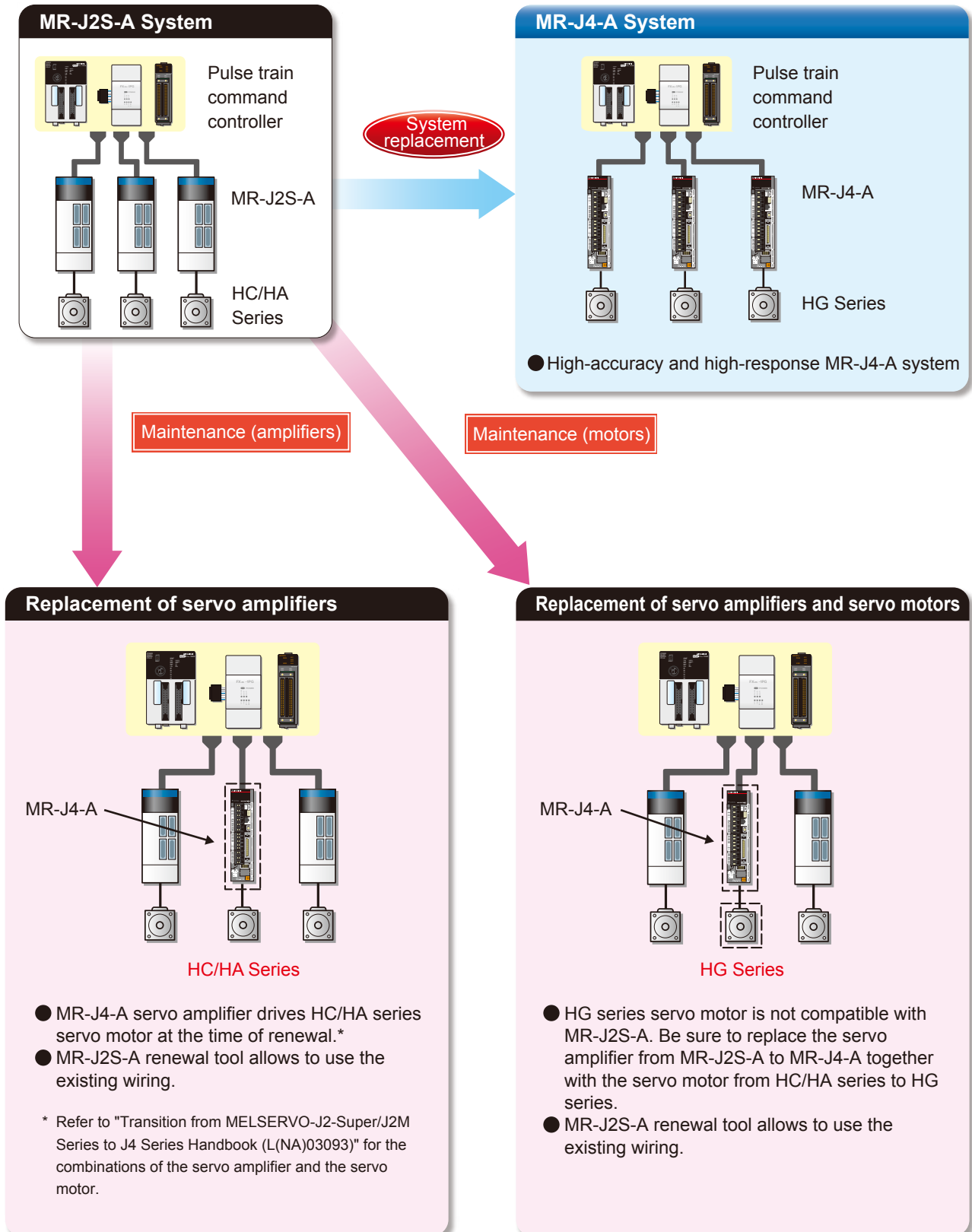
A combination of MR-J4-B-RJ020 and MR-J4-T20 is capable of connecting to the SSCNET of MR-J2S-B compatible servo system controller.

From MELSERVO-J2S Series to MELSERVO-J4 Series

Proposal for Replacement of MR-J2S Series to MR-J4 Series

► For MR-J2S-A (general-purpose interface)

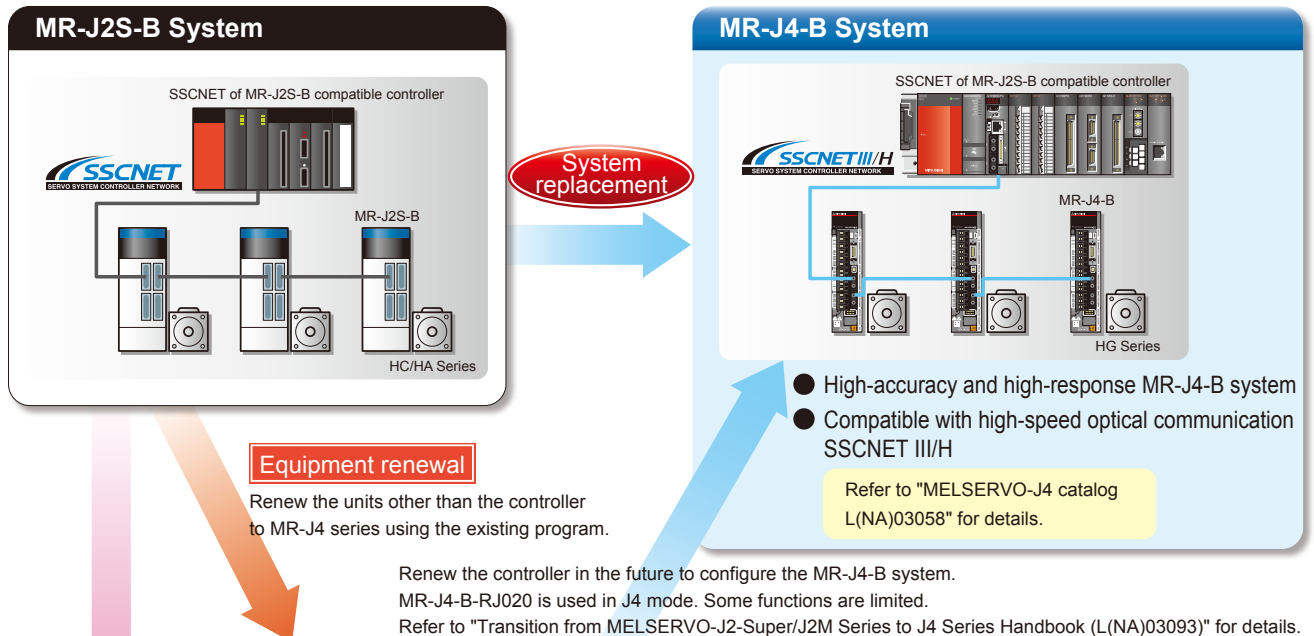
The following is an example of replacing the servo amplifiers and/or the servo motors without changing a general-purpose pulse train command controller.



MELSERVO-J2S J2S → J4 TRANSITION GUIDE

► For MR-J2S-B (SSCNET interface)

The following is an example of replacing the servo amplifiers, the servo motors and/or the controller.

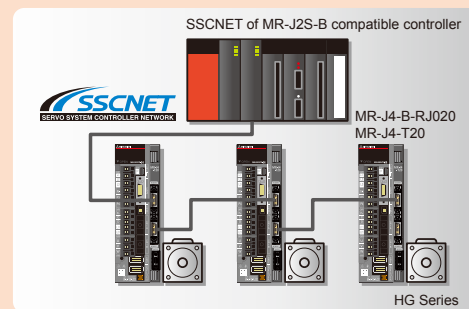


Maintenance

Replace the servo amplifier without changing the existing connections.

Conversion unit for SSCNET of MR-J2S-B compatible servo amplifier MR-J4-B-RJ020 + MR-J4-T20, and HG series servo motors

When renewing a machine with MR-J4 servo amplifiers and HG series servo motors.

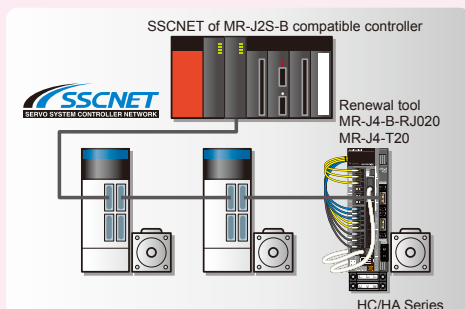


- A combination of MR-J4-B-RJ020 and MR-J4-T20 is capable of connecting to the SSCNET of MR-J2S-B compatible servo system controller.

* The function and performance are equivalent to those of MR-J2S-B. (J2S compatibility mode)
* Refer to "New Product Release of Conversion Unit for SSCNET of MR-J2S-B (SV1306-1)" for details.

MR-J2S-B renewal tool manufactured by Mitsubishi Electric System & Service Co., Ltd.

When using the existing HC/HA series servo motors or when replacing MR-J2S-B using the existing connections.



- Replace your MR-J2S-B series to MR-J4 series, using the existing wiring.

Before replacement

MR-J2S-B servo amplifier

After replacement

Renewal tool

Primary Replacement: Replacing only the servo amplifier



MELSERVO-J2-Super Transition Guide



Safety Warning

To ensure proper use of the products listed in this catalog, please be sure to read the instruction manual prior to use.

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