MOTOMAN-SIA20D/SIA20F
SUPPLEMENTAL INSTRUCTIONS

TYPE
YR-SIA020D-A02 (ONE EXTERNAL AXIS SPEC. FOR DX100)
YR-SIA020D-A03 (ONE EXTERNAL AXIS DRIP-PROOF SPEC. FOR DX100)
YR-SIA020F-A02 (ONE EXTERNAL AXIS SPEC. FOR FS100)
YR-SIA020F-A03 (ONE EXTERNAL AXIS DRIP-PROOF SPEC. FOR FS100)

Upon receipt of the product and prior to initial operation, read these instructions thoroughly, and retain for future reference.

MOTOMAN INSTRUCTIONS
MOTOMAN-SIA20D / SIA20F INSTRUCTIONS
DX100 INSTRUCTIONS
DX100 OPERATOR’S MANUAL
DX100 MAINTENANCE MANUAL

FS100 INSTRUCTIONS
FS100 OPERATOR’S MANUAL
FS100 MAINTENANCE MANUAL

The DX100 operator’s manual above corresponds to specific usage.
Be sure to use the appropriate manual.

Part Number: 173675-1CD
Revision: 0
Introduction

Each of following supplementary instruction manuals are different from YR-SIA20D / SIA20F-A0* with standard specifications (hereinafter referred to as YR-SIA20D / SIA20F-A0*).

- YR-SIA020D-A02 ONE EXTERNAL AXIS SPEC. for DX100 (hereinafter referred to as SIA20D-A02)
- YR-SIA020D-A03 ONE EXTERNAL AXIS DRIP-PROOF SPEC. for DX100 (hereinafter referred to as SIA20D-A03)
- YR-SIA020F-A02 ONE EXTERNAL AXIS SPEC. for FS100 (hereinafter referred to as SIA20F-A02)
- YR-SIA020F-A03 ONE EXTERNAL AXIS DRIP-PROOF SPEC. for FS100 (hereinafter referred to as SIA20F-A03)

In case of using SIA20D-A02, A03 / SIA20F-A02, A03, read this supplementary instruction manual thoroughly together with the following instruction manual:

- "MOTOMAN-SIA20D / SIA20F INSTRUCTIONS" (156387-1CD).

Point of Difference

SIA20D-A02, A03 / SIA20F-A02, A03 differ from SIA20D / SIA20F-A0* in the following point:

- Cables built-in for one external axis

The difference from the above mentioned "MOTOMAN-SIA20D / SIA20F INSTRUCTIONS" are as follows:

1. SIA20D-A01 / SIA20F-A01 drip-proof specification for flange part (section 5.6)
2. Internal User I/O Wiring Harness and Air Line (section 7.1)
3. Internal Connections (section 8.1)
4. Recommended Spare Parts (chapter 10)

The differences are described based on "MOTOMAN-SIA20D / SIA20F INSTRUCTIONS" (156387-1CD). Read this manual thoroughly replacing the subject matters for changes with this supplementary instruction manual.
5 Basic Specifications

5.6 Drip-Proof Specification SIA20D-A01 / SIA20F-A01

5.6.1 Flange Part

This applies to SIA20D-A03 / SIA20F-A03.

The wrist flange of SIA20D-A03 / SIA20F-A03 with one external axis drip-proof specification has a cable through hole as well as the standard specification.

When mounting equipment such as an attachment, apply drip-proof treatment on the flange face. Waterproof flange is available as an option.

The connectors for internal user I/O wiring harness are not drip-proof type; if the manipulator is installed at a location where some water is splashed on the manipulator, apply drip-proof treatment on those connectors when connection is completed. (Example: use of silicon tape, or connection within a connection box.)

Fig. 5-6: Details of Flange
7 System Application

7.1 Internal User I/O Wiring Harness and Air Line

(Pages 7-2 to 7-3)

The cables of one external axis are added to SIA20D-A02, A03 / SIA20F-A02, A03 in comparison with SIA20D / SIA20F-A0*.

Fig. 7-1: Internal User I/O Wiring Harness, External Axis Cables and Air Lines

Connector for internal user I/O wiring harness 51216-0800
(Prepare MOLEX 51227-0800)

Air line: 2 lines
(outside dia. 6mm, inside dia. 4mm)

System Connection Diagram:
Internal User I/O Wiring Harness,
One External Axis Cables & Air Lines

Connector Base
Flange

Internal user I/O wiring harness
S1-1
S1-2
1BC
2BC

External axis control cables
EX1-PG
EX1-PR

External axis power cables
EX1-BR

Air Lines
Air 1 (Red)
Air 2 (Blue)

Air inlet: Air 2
Tapped hole PT3/8 with a pipe plug

Air inlet: Air 1
Tapped hole PT3/8 with a pipe plug

Connector for internal user I/O wiring harness: S
JL05-2A20-29PC (pin connector with a cap)
Prepare socket connector: JL05-6A20-29SC
Fig. 7-2: Internal User I/O Wiring Harness and External Axis Cable Connector (Pin Details)

Details of Pin Numbers used to Connector for External Axes

<table>
<thead>
<tr>
<th>Cables:</th>
<th>0.2 mm², 4 wires</th>
<th>172159-1 (4P) (Tyco Electronics Japan G.K.) Prepare mating connector: 172167-1</th>
</tr>
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<tr>
<td></td>
<td>1. MU</td>
<td>EX1-PW</td>
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<td></td>
<td>2. MY</td>
<td></td>
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<tr>
<td></td>
<td>3. MV</td>
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<td>4. MW</td>
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</table>

<table>
<thead>
<tr>
<th>Cables:</th>
<th>0.2 mm², 2 wires</th>
<th>172157-1 (2P) (Tyco Electronics Japan G.K.) Prepare mating connector: 172165-1</th>
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<td>1. MDA</td>
<td>EX1-BR</td>
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<tr>
<td></td>
<td>2. DBM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. BAY</td>
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<tr>
<td></td>
<td>4. BBR</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Cables:</th>
<th>0.1 mm², 4 wires</th>
<th>51111-0410 (molex) Prepare mating connector: 51112-0410</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. I/O</td>
<td>EX1-PG</td>
</tr>
<tr>
<td></td>
<td>2. IW</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. IT</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. IB</td>
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</tbody>
</table>

<table>
<thead>
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<th>Cables:</th>
<th>0.1 mm², 3 wires</th>
<th>51111-0310 (molex) Prepare mating connector: 51112-0310</th>
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</thead>
<tbody>
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<td>1. I/O</td>
<td>EX1-PG</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td></td>
<td>3. IT</td>
<td></td>
</tr>
</tbody>
</table>

Details of Pin Numbers used to Connectors for Internal User I/O Wiring Harness

Connector Base Flange

Internal user I/O wiring harness: 0.1 mm², 16 wires
8 Electrical Equipment Specification

8.1 Internal Connections (Pages: 8-2 to 8-3)

Since the cables of one external axis are added to SIA20D-A02, A03 / SIA20F-A02, A03 in comparison with SIA20D / SIA20F-A0*, fig. 8-1(a) "Internal Connection Diagram" and fig. 8-1(b) "Internal Connection Diagram" are changed.
Fig. 8-1(a): Internal Connection Diagram
Fig. 8-1(b): Internal Connection Diagram
Since the cables of one external axis are added to SIA20D-A02, A03 / SIA20F-A02, A03 in comparison with SIA20D / SIA20F-A0*, “Wire Harness in Manipulator” in Table 10-1 is replaced with the following one.

### Table 10-1: Spare Parts for SIA20D-A02, A03 / SIA20F-A02, A03 (Difference)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Parts No.</th>
<th>Name</th>
<th>Type</th>
<th>Manufacturer</th>
<th>Qty per Unit</th>
<th>Remarks</th>
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<tr>
<td></td>
<td>6</td>
<td>Wire Harness in Manipulator</td>
<td>HW0174611-A</td>
<td>Yaskawa Electric Corporation</td>
<td>1</td>
<td>Arm component (Difference)</td>
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MOTOMAN-SIA20D/SIA20F
SUPPLEMENTAL INSTRUCTIONS

Specifications are subject to change without notice for ongoing product modifications and improvements.