



Product manual, spare parts IRB 14000

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Product manual, spare parts

IRB 14000

IRC5

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Revision: C

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Original instructions.

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Overview of this manual

About this manual

This manual contains spare parts for:

- IRB 14000 and all its variants.

Usage

This manual shall be used as a complement to the product manual for IRB 14000 during:

- maintenance work
- repair work.

Who should read this manual?

This manual is intended for:

- maintenance personnel
- repair personnel.

Prerequisites

A maintenance/repair/installation craftsman working with an ABB Robot must:

- be trained by ABB and have the required knowledge of mechanical and electrical installation/repair/maintenance work.

Organization of chapters

The manual is organized in the following chapters:

Chapter	Contents
1 Spare parts and exploded view	Complete spare part list and complete list of robot components shown in exploded views.

References

Reference	Document ID
<i>Product manual - IRB 14000</i>	3HAC052983-001
<i>Circuit diagram - IRB 14000</i>	3HAC050778-003

Revisions

Revision	Description
-	First edition
A	The following updates are done in this revision: <ul style="list-style-type: none"> • Plastic parts are ESD coated so that their names and spare part numbers are modified throughout the manual. • Main power cable spare parts are added.
B	Published in release R16.2. The following updates are done in this revision: <ul style="list-style-type: none"> • Spare part items for the safety relay are added. See Safety relay (option) on page 30. • Spare parts for motors in axis 1 and axis 7 are removed. Contact ABB for more information.

Continues on next page

Revision	Description
C	Published in release R17.1. The following updates are done in this revision: <ul style="list-style-type: none">• DSQC1000 computer is changed to DSQC1018 computer.• Spare part list of hall sensors is corrected.

Product documentation, IRC5

Categories for user documentation from ABB Robotics

The user documentation from ABB Robotics is divided into a number of categories. This listing is based on the type of information in the documents, regardless of whether the products are standard or optional.

All documents listed can be ordered from ABB on a DVD. The documents listed are valid for IRC5 robot systems.

Product manuals

Manipulators, controllers, DressPack/SpotPack, and most other hardware is delivered with a **Product manual** that generally contains:

- Safety information.
- Installation and commissioning (descriptions of mechanical installation or electrical connections).
- Maintenance (descriptions of all required preventive maintenance procedures including intervals and expected life time of parts).
- Repair (descriptions of all recommended repair procedures including spare parts).
- Calibration.
- Decommissioning.
- Reference information (safety standards, unit conversions, screw joints, lists of tools).
- Spare parts list with exploded views (or references to separate spare parts lists).
- Circuit diagrams (or references to circuit diagrams).

Technical reference manuals

The technical reference manuals describe reference information for robotics products.

- *Technical reference manual - Lubrication in gearboxes*: Description of types and volumes of lubrication for the manipulator gearboxes.
- *Technical reference manual - RAPID overview*: An overview of the RAPID programming language.
- *Technical reference manual - RAPID Instructions, Functions and Data types*: Description and syntax for all RAPID instructions, functions, and data types.
- *Technical reference manual - RAPID kernel*: A formal description of the RAPID programming language.
- *Technical reference manual - System parameters*: Description of system parameters and configuration workflows.

Continues on next page

Application manuals

Specific applications (for example software or hardware options) are described in **Application manuals**. An application manual can describe one or several applications.

An application manual generally contains information about:

- The purpose of the application (what it does and when it is useful).
- What is included (for example cables, I/O boards, RAPID instructions, system parameters, DVD with PC software).
- How to install included or required hardware.
- How to use the application.
- Examples of how to use the application.

Operating manuals

The operating manuals describe hands-on handling of the products. The manuals are aimed at those having first-hand operational contact with the product, that is production cell operators, programmers, and trouble shooters.

The group of manuals includes (among others):

- *Operating manual - Emergency safety information*
- *Operating manual - General safety information*
- *Operating manual - Getting started, IRC5 and RobotStudio*
- *Operating manual - IRC5 Integrator's guide*
- *Operating manual - IRC5 with FlexPendant*
- *Operating manual - RobotStudio*
- *Operating manual - Trouble shooting IRC5*

1 Spare parts and exploded views

1.1 Arm

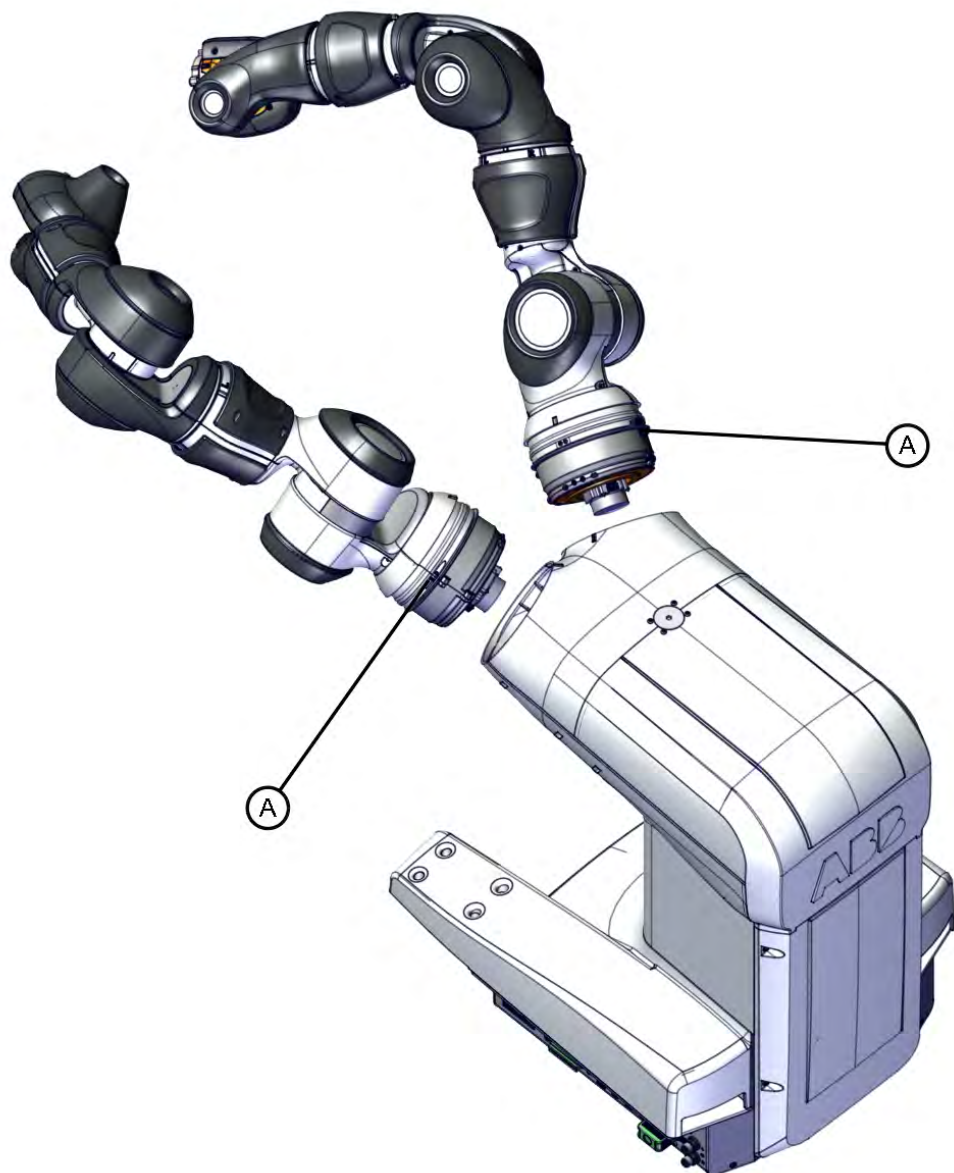
1.1.1 Spare parts - arm assembly

Arm assembly

Spare part list

	Spare part number	Description
A	3HAC047548-001	Arm, complete assembly

Spare part illustration



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1 Spare parts and exploded views

1.1.2.1 Spare parts - axis-1 motor

1.1.2 Spare parts - motors

1.1.2.1 Spare parts - axis-1 motor

Replacing the complete arm

It is recommended to exchange the complete arm in case of a broken axis-1 motor.

The axis-1 motor can be replaced by ABB, contact your local ABB for more information.

1.1.2.2 Spare parts - axis-2 motor

Axis-2 motor

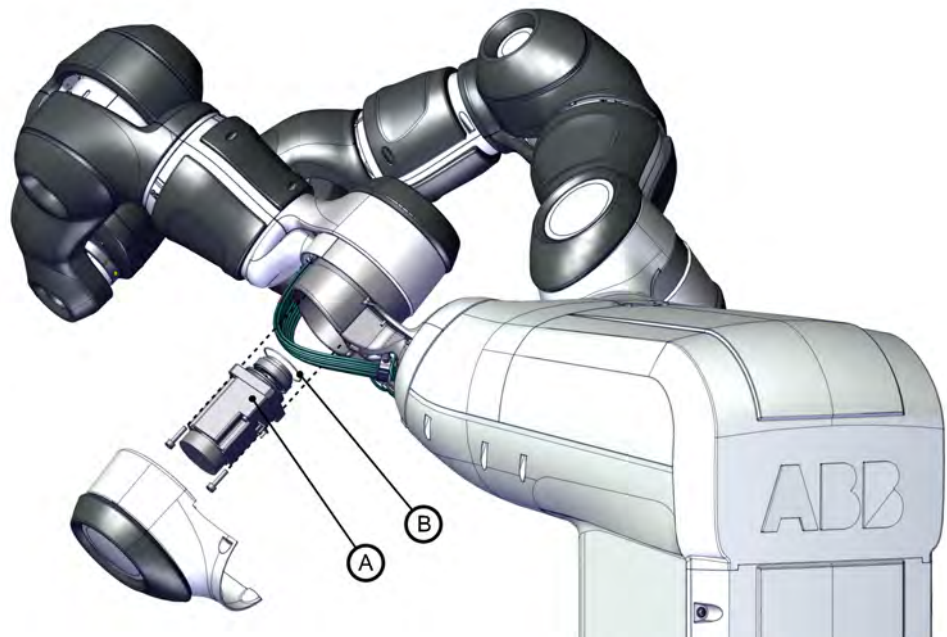
Spare part list - axis-2 motor

	Spare part number	Description
A	3HAC036859-001	Motor M93 Always use a new o-ring 3HAB3772-137. To be ordered separately.

Spare part list - axis-2 motor parts

	Spare part number	Description
B	3HAB3772-137	O-ring

Spare part illustration



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1 Spare parts and exploded views

1.1.2.3 Spare parts - axis-7 motor

1.1.2.3 Spare parts - axis-7 motor

Replacing the complete arm

It is recommended to exchange the complete arm in case of a broken axis-7 motor.

The axis-7 motor can be replaced by ABB, contact your local ABB for more information.

1.1.2.4 Spare parts - axis-3 motor

Axis-3 motor

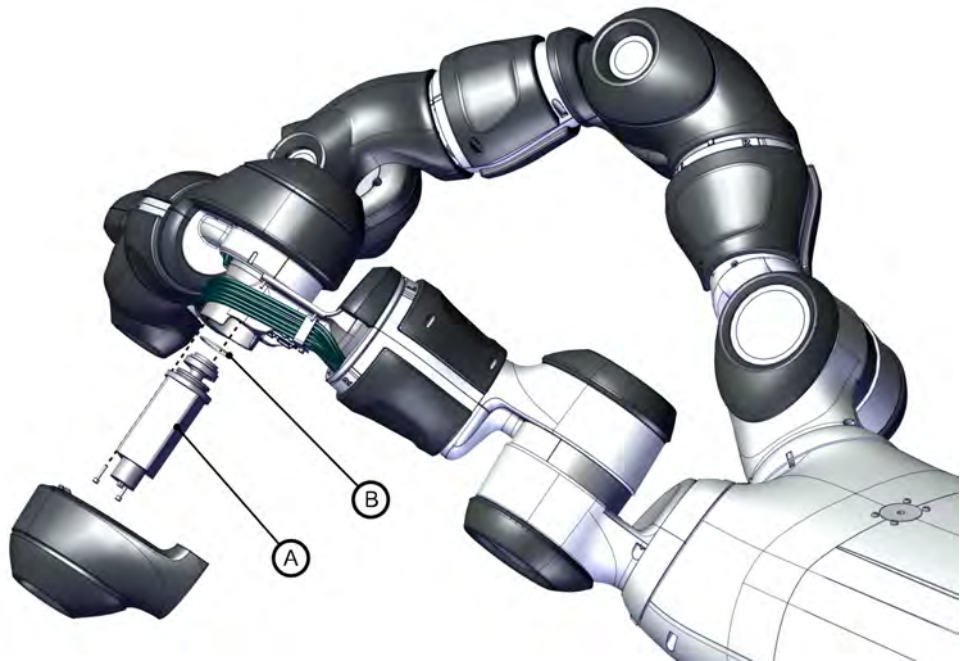
Spare part list - axis-3 motor

	Spare part number	Description
A	3HAC036900-001	Motor M92 Always use a new o-ring 3HAB3772-136. To be ordered separately.

Spare part list - axis-3 motor parts

	Spare part number	Description
B	3HAB3772-136	O-ring

Spare part illustration



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1 Spare parts and exploded views

1.1.2.5 Spare parts - axis-4 motor

1.1.2.5 Spare parts - axis-4 motor

Axis-4 motor

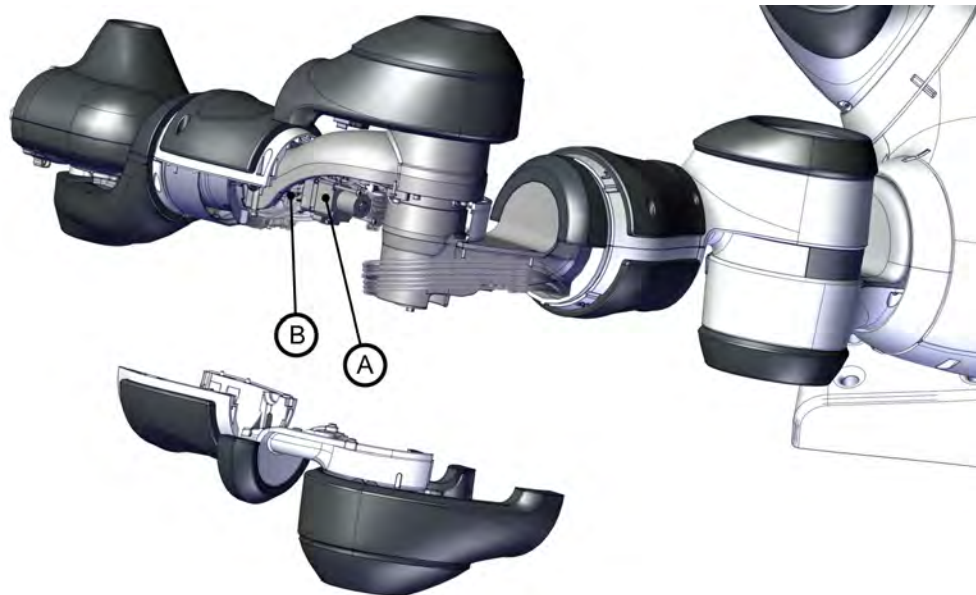
Spare part list - axis-4 motor

	Spare part number	Description
A	3HAC036950-001	Motor M91 Always use a new o-ring 3HAB3772-138. To be ordered separately.

Spare part list -axis-4 motor parts

	Spare part number	Description
B	3HAB3772-138	O-ring

Spare part illustration



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1.1.2.6 Spare parts - axis-5 motor

Axis-5 motor

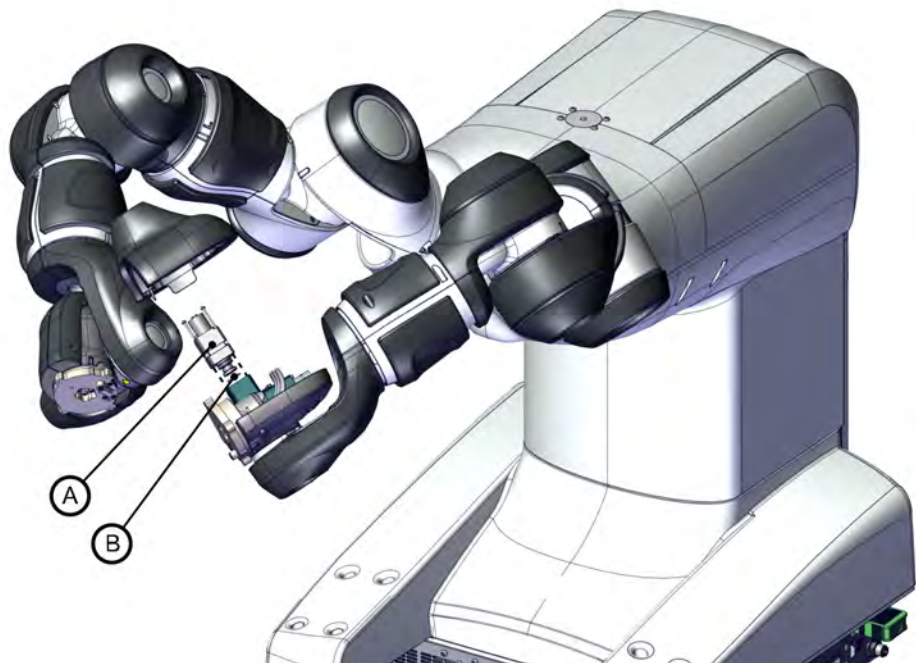
Spare part list - axis-5 motor

	Spare part number	Description
A	3HAC036950-001	Motor M91 Includes o-ring 3HAB3772-138.

Spare part list - axis-5 motor parts

	Spare part number	Description
B	3HAB3772-138	O-ring

Spare part illustration



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1 Spare parts and exploded views

1.1.2.7 Spare parts - axis-6 motor

1.1.2.7 Spare parts - axis-6 motor

Axis-6 motor

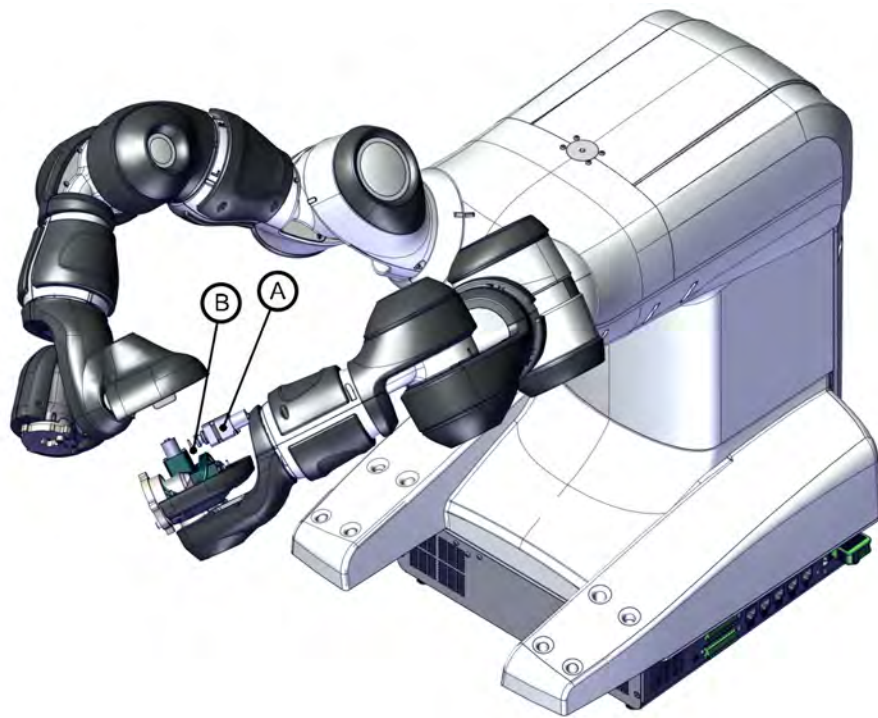
Spare part list - axis-6 motor

	Spare part number	Description
A	3HAC036950-001	Motor M91 Includes o-ring 3HAB3772-138.

Spare part list - axis-6 motor parts

	Spare part number	Description
B	3HAB3772-138	O-ring

Spare part illustration



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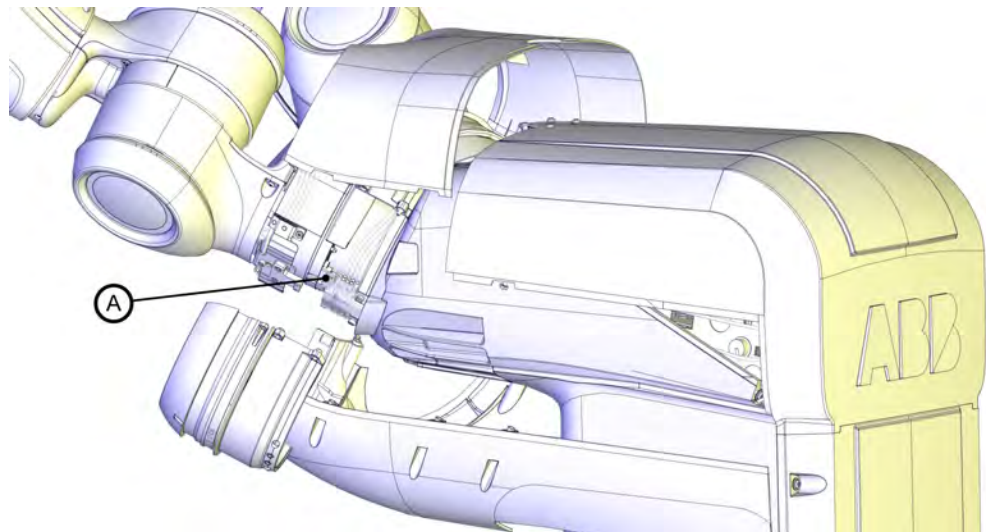
1.1.3 Spare parts - hall sensors

Hall sensors

Spare part list

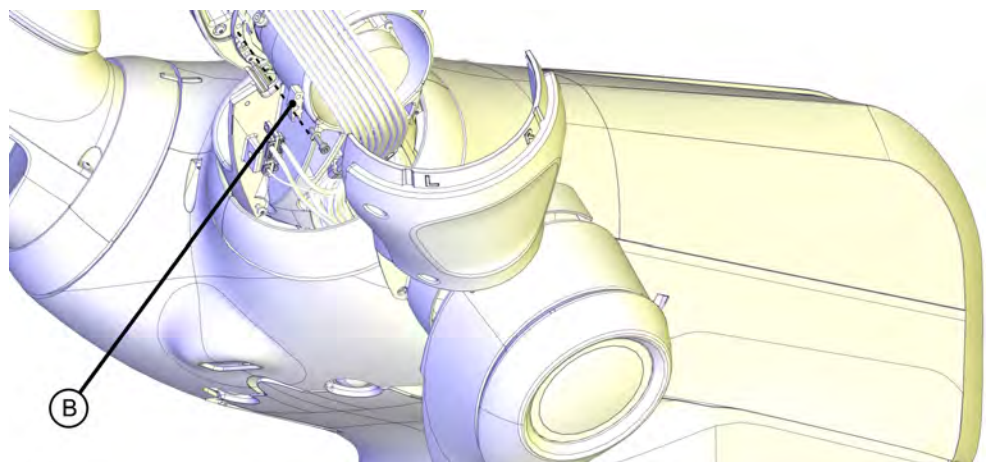
	Spare part number	Description
A	3HAC052445-001	Hall sensor with attachment for axis 1
B	3HAC052446-001	Hall sensor with attachment for axis 2
C	3HAC052447-001	Hall sensor with attachment for axis 7
D	3HAC052448-001	Hall sensor with attachment for axis 3
E	3HAC052450-001	Hall sensor with attachment for axis 4
-	3HAC050887-001	Hall sensor interface board

Spare part illustration - axis 1



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Spare part illustration - axis 2



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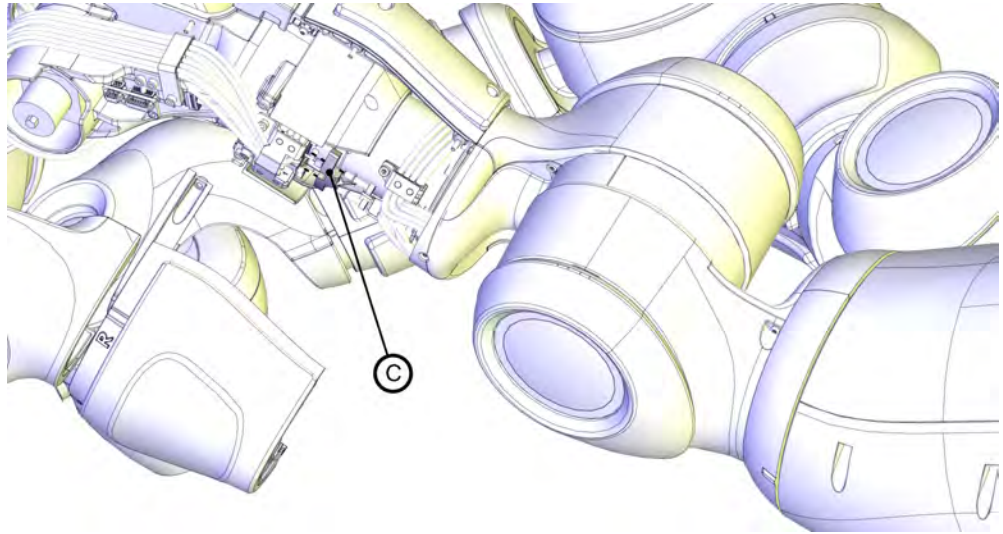
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1 Spare parts and exploded views

1.1.3 Spare parts - hall sensors

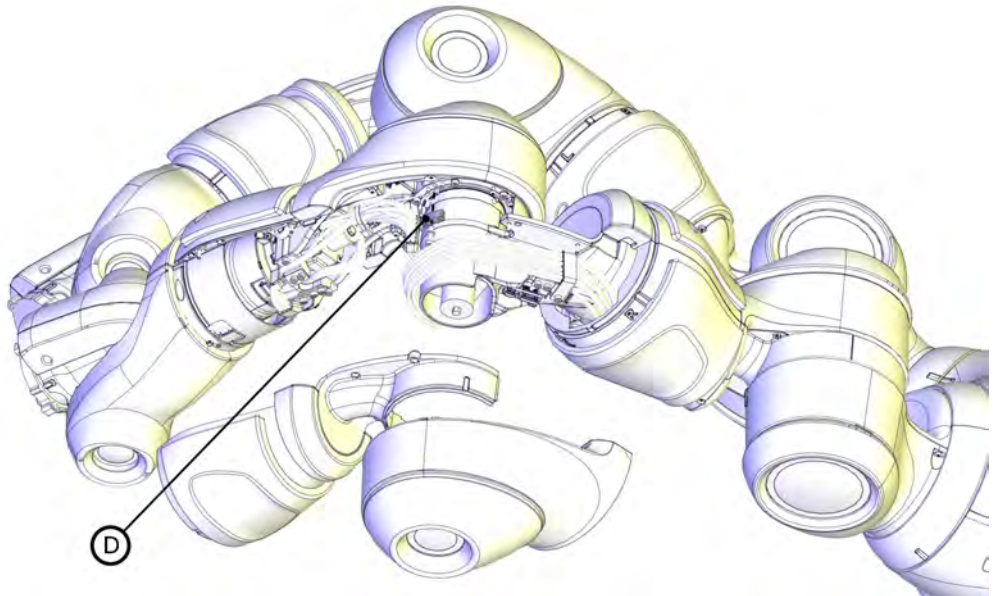
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Spare part illustration - axis 7



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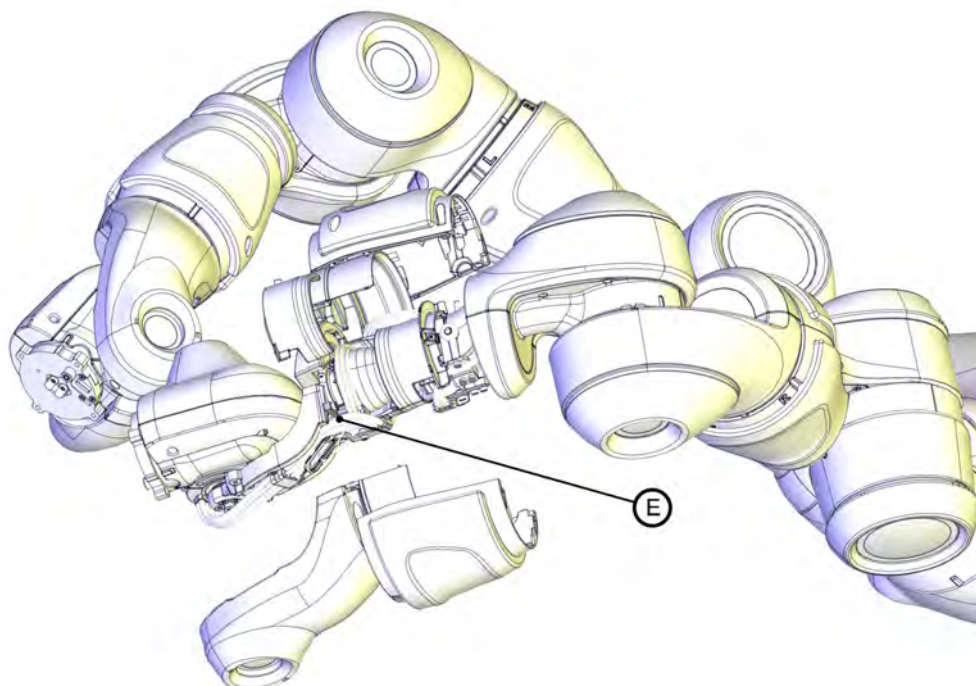
Spare part illustration - axis 3



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Spare part illustration - axis 4



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1 Spare parts and exploded views

1.1.4 Spare parts - mechanical stops

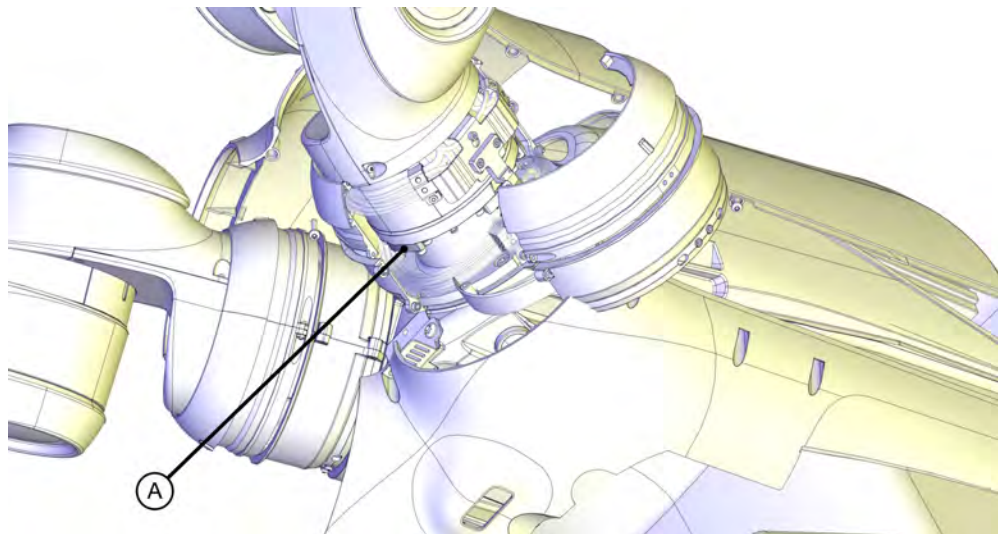
1.1.4 Spare parts - mechanical stops

Mechanical stops

Spare part list

	Spare part number	Description
A	3HAC047602-001	Mechanical stop for axis 1
B	3HAC047602-001	Mechanical stop for axis 2
C	3HAC047603-001	Mechanical stop for axis 7
D	3HAC047603-001	Mechanical stop for axis 3

Spare part illustration



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1.2 Encapsulation and covers

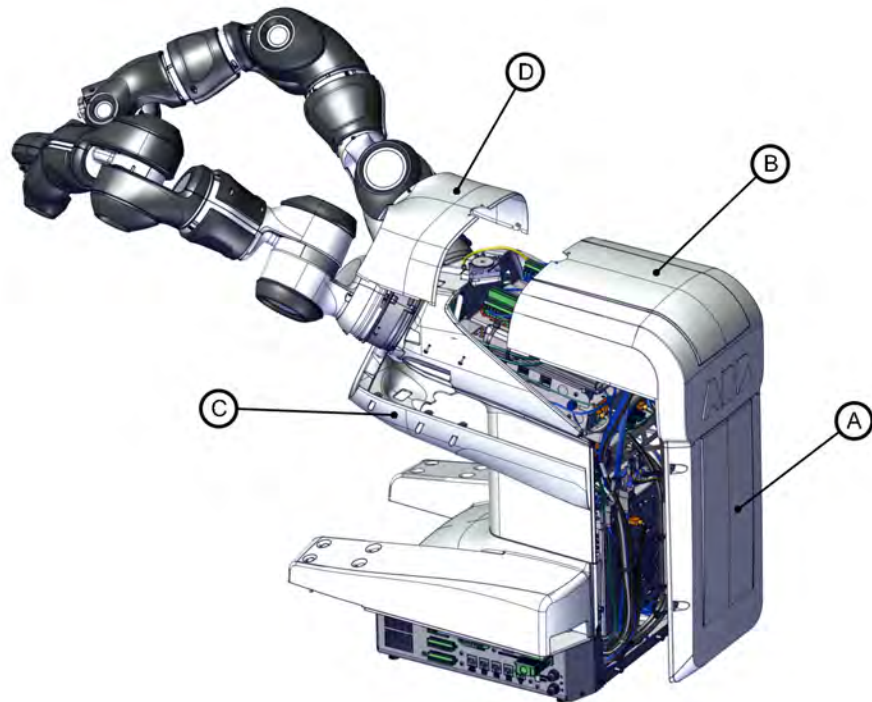
1.2.1 Spare parts - body covers

Body covers

Spare part list

	Spare part number	Description
A	3HAC047639-001	Body cover
B	3HAC057715-001	Rear cover for body, ESD coated
C	3HAC057716-001	Body cover, lower, ESD coated
D	3HAC057717-001	Body cover, upper, ESD coated

Spare part illustration



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1 Spare parts and exploded views

1.2.2 Spare parts - arm covers

1.2.2 Spare parts - arm covers

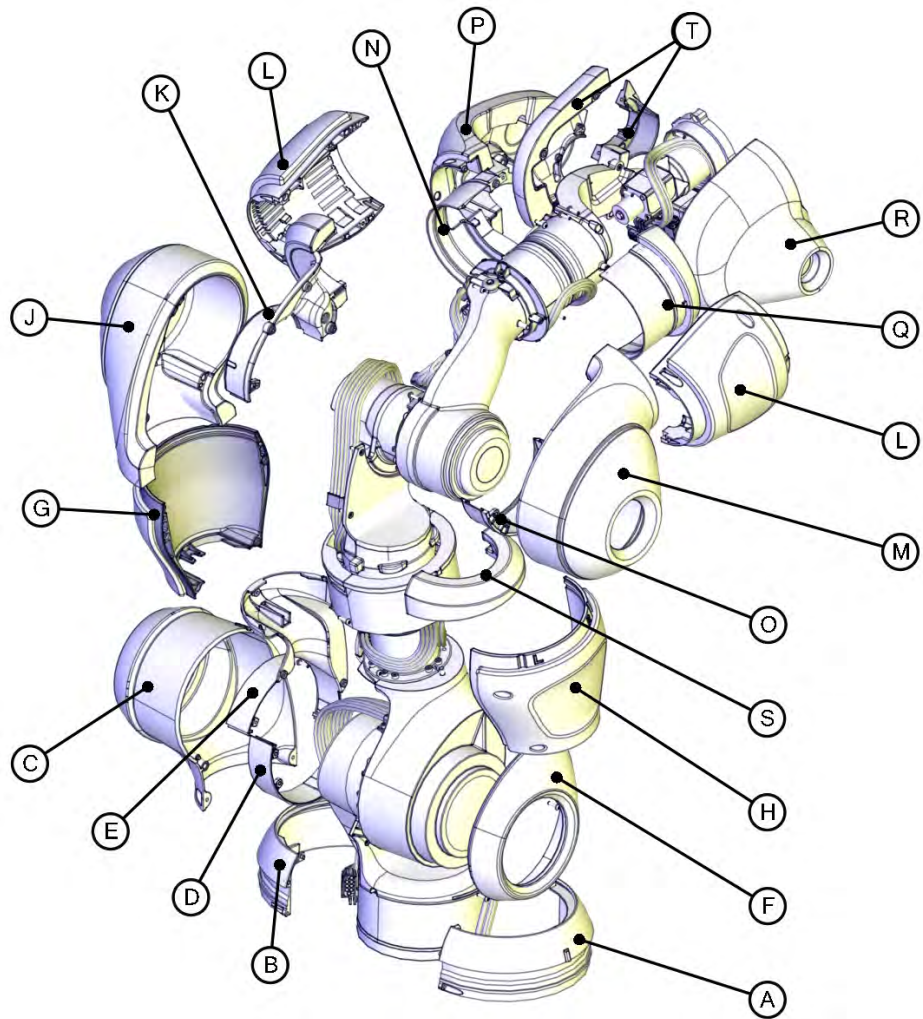
Arm covers and encapsulation

Spare part list - encapsulation

	Spare part number	Description
A	3HAC057718-001	Upper axis-1 cover, ESD coated
B	3HAC057719-001	Upper axis-1 cover, brake, ESD coated
C	3HAC050559-001	Lower axis-2 cover, ESD coated
D	3HAC057721-001	Axis-2 cable collar, ESD coated
E	3HAC057722-001	Axis-2 cable cover, ESD coated
F	3HAC050558-001	Axis-2 padding
G	3HAC050529-002	Axis-7 cover, ESD coated
H	3HAC050529-001	Axis-7 cover, ESD coated
J	3HAC050532-001	Lower axis-3 cover, ESD coated
K	3HAC050538-001	Upper axis-3 cover, ESD coated
L	3HAC050542-001	Lower axis-4 cover, ESD coated
M	3HAC050535-001	Axis-3 body cover, ESD coated
N	3HAC049878-001	Axis-4 cable protection
O	3HAC057727-001	Axis-3 cable collar, ESD coated
P	3HAC050548-001	Upper axis-4 cover, ESD coated
Q	3HAC050545-001	Axis-4 body cover, ESD coated
R	3HAC050553-001	Axis-6 cover, ESD coated
S	3HAC050526-001	Axis-7 body padding
T	3HAC041286-001	Cooling flange with padding

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Spare part illustration



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1 Spare parts and exploded views

1.3.1 Spare parts - electrical parts

1.3 Controller

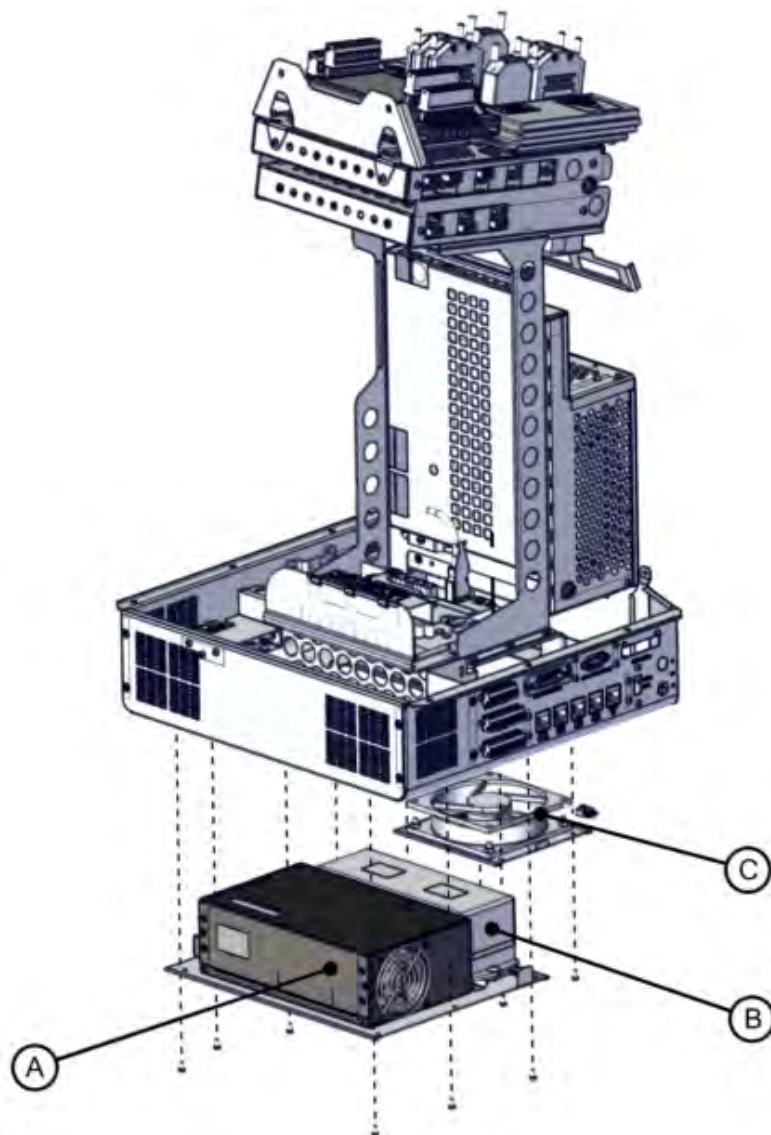
1.3.1 Spare parts - electrical parts

Bottom controller

Spare part list

	Spare part number	Description
A	3HAC047966-001	Power supply
B	3HAC025562-001	Capacitor bank
C	3HAC026525-001	Fan with receptacle

Spare part illustration



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1 Spare parts and exploded views

1.3.1 Spare parts - electrical parts

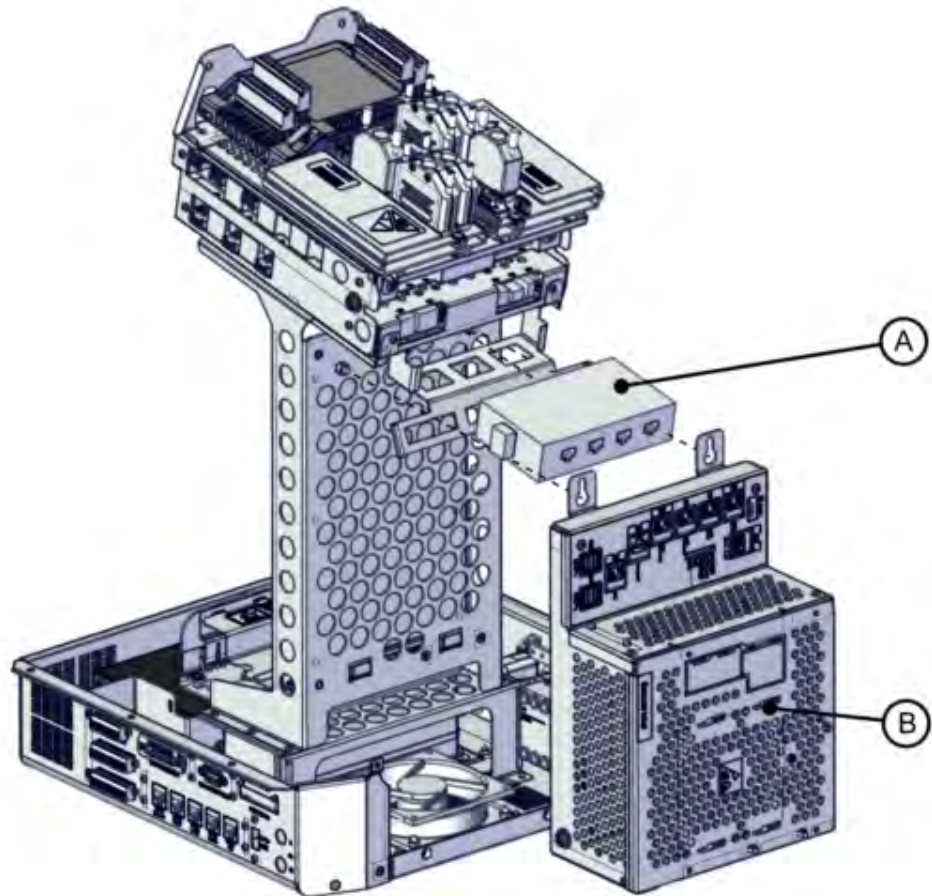
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Back controller

Spare part list

	Spare part number	Description
A	3HAC034884-001	Ethernet switch 5p
B	3HAC050363-001	DSQC1018 Computer

Spare part illustration



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Front controller

Spare part list

	Spare part number	Description
A	3HAC049969-001	DSQC1013 Axis computer
B	3HAC026254-001	DSQC 662 Power distribution board

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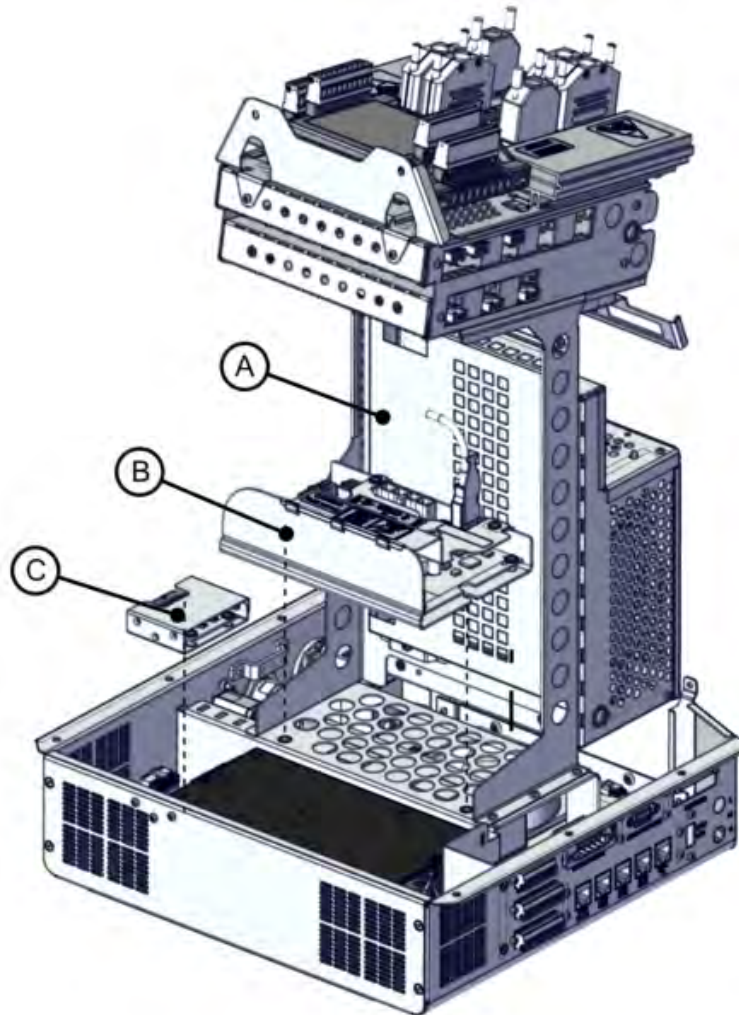
1 Spare parts and exploded views

1.3.1 Spare parts - electrical parts

Continued

	Spare part number	Description
C	3HAC049570-001	DSQC 461 PDB ext unit

Spare part illustration



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Top controller

Spare part list

	Spare part number	Description
A	3HAC047960-001	DSQC 462 Drive board
B	3HAC025917-001	Digital 24V I/O DSQC 652
C	3HAC048550-001	DSQC633D measurement board

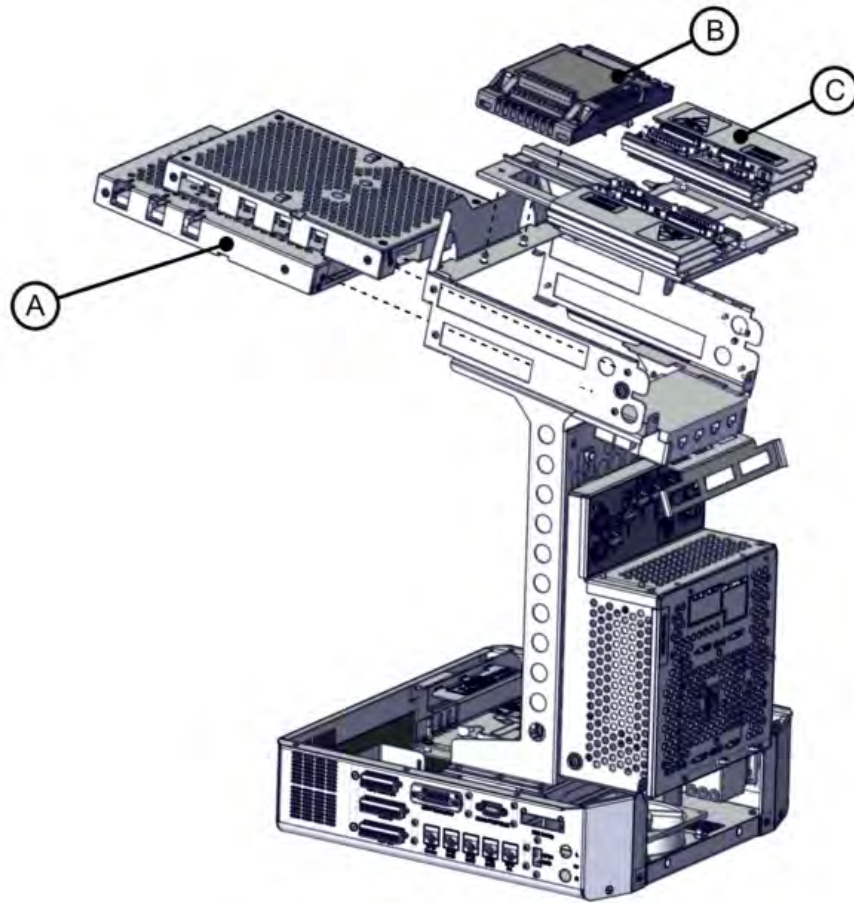
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1 Spare parts and exploded views

1.3.1 Spare parts - electrical parts

Continued

Spare part illustration



Computer unit

Spare part list

	Spare part number	Description
A	3HAC050363-001	DSQC1018 Computer
B	3HAC047184-003	Mass memory with boot loader
C	3HAC046408-001	DSQC1003 Expansion board complete
D	3HAC026840-001	DSQC667 Profibus Fieldbus adapter
	3HAC031670-001	DSQC688 PROFINET FA
	3HAC027652-001	DSQC669 Ethernet Slave AnyBus adapter
E	3HAC043383-001	DSQC1006 DeviceNet Master PCI-E
F	3HAC026525-001	Fan with receptacle

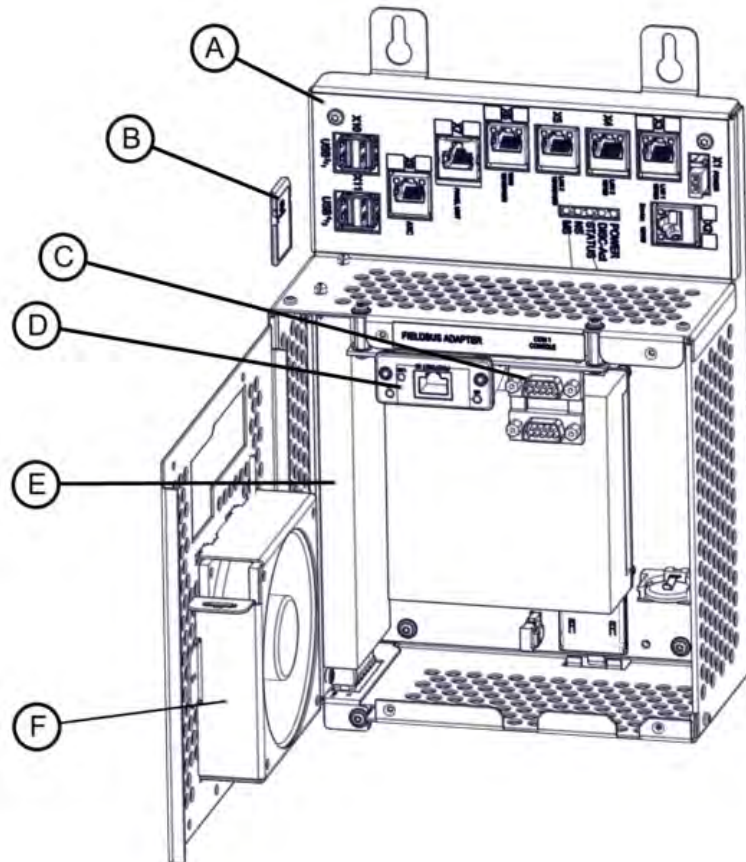
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1 Spare parts and exploded views

1.3.1 Spare parts - electrical parts

Continued

Spare part illustration



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Main power cable (option)

Spare part list

	Spare part	Article number
-	3HAC056583-001	Mains cable with locking system, EU 2m
	3HAC056583-002	Mains cable with locking system, UK 2m
	3HAC056583-003	Mains cable with locking system, US 6ft
	3HAC056583-004	Mains cable with locking system, JP 2m
	3HAC056583-005	Mains cable with locking system, CN 2m
	3HAC056583-006	Mains cable with locking system, AU 2m

Safety relay (option)

Spare part list

	Spare part	Article number
-	3HAC056568-001	Safety relay with 115VAC
	3HAC056371-001	Safety relay with 230VAC

1.4 Brake release

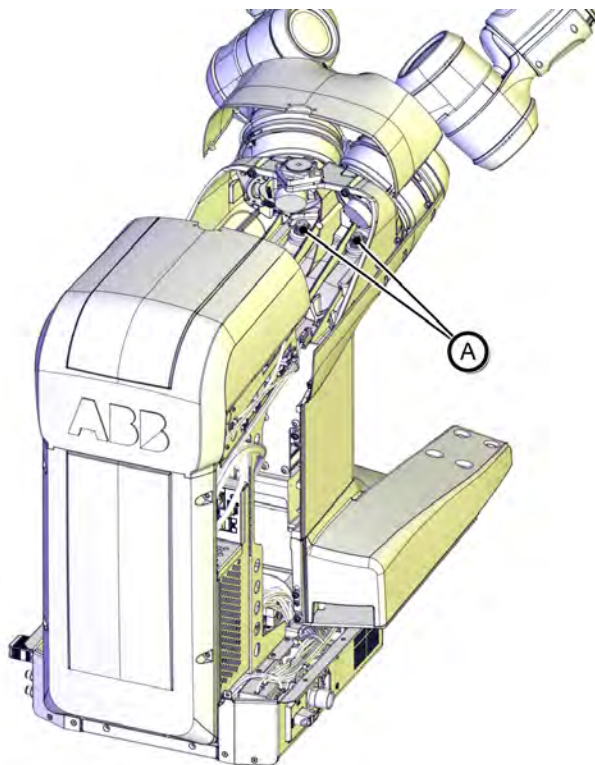
1.4.1 Spare part - brake release harness

Brake release harness

Spare part list

	Spare part number	Description
A	3HAC038361-001	Brake release harness Includes brake release button and harness.

Spare part illustration



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1 Spare parts and exploded views

1.5.1 Spare part - signal lamp

1.5 Signal lamp

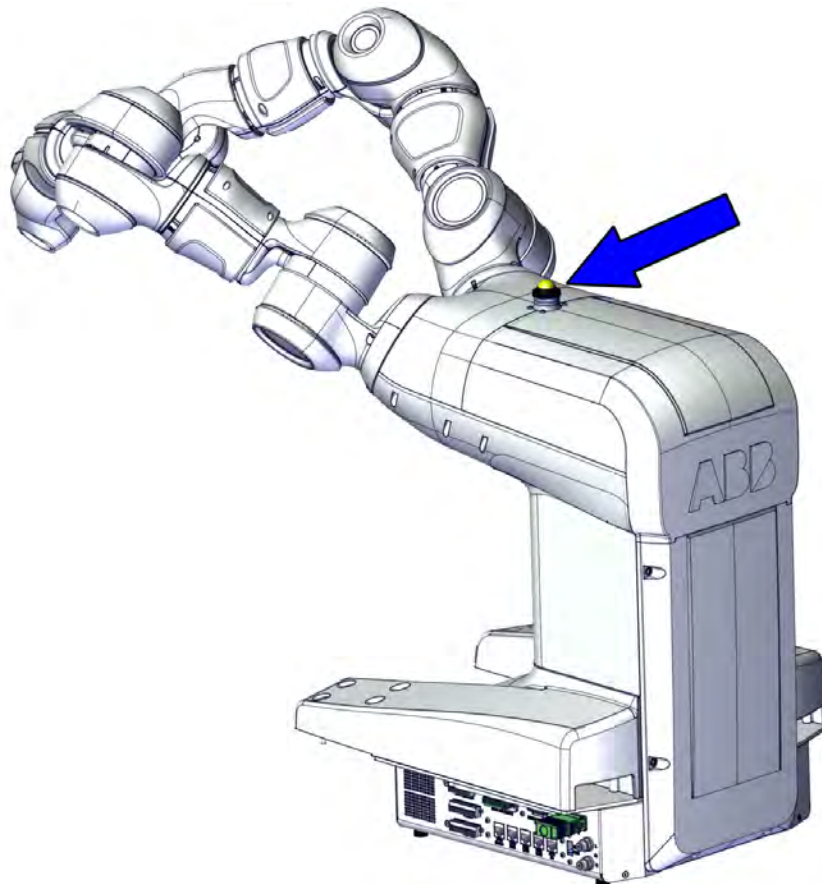
1.5.1 Spare part - signal lamp

Signal lamp

Spare part list

	Spare part number	Description
A	3HAC053350-001	Signal lamp

Spare part illustration



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1.6 Labels

1.6.1 Spare parts - labels and instruction plates

Labels

Spare part list

	Spare part number	Description
A	3HAC053898-001	Instruction plate, Brake release
B	3HAB9549-1	Rating label
C	3HAC053978-001	Lifting label
D	3HAC053895-001	Caution label, Risk of tipping
E	3HAC053979-001	Read manual label
F	3HAC13488-1	Calibration label
G	3HAC055016-001	UL label
H	3HAC1589-1	Warning sign, Electrical shock
J	29454254-1	ESD Warning (inside of cover)
K	3HAC055245-001	Warning label, Disconnect power before servicing controller

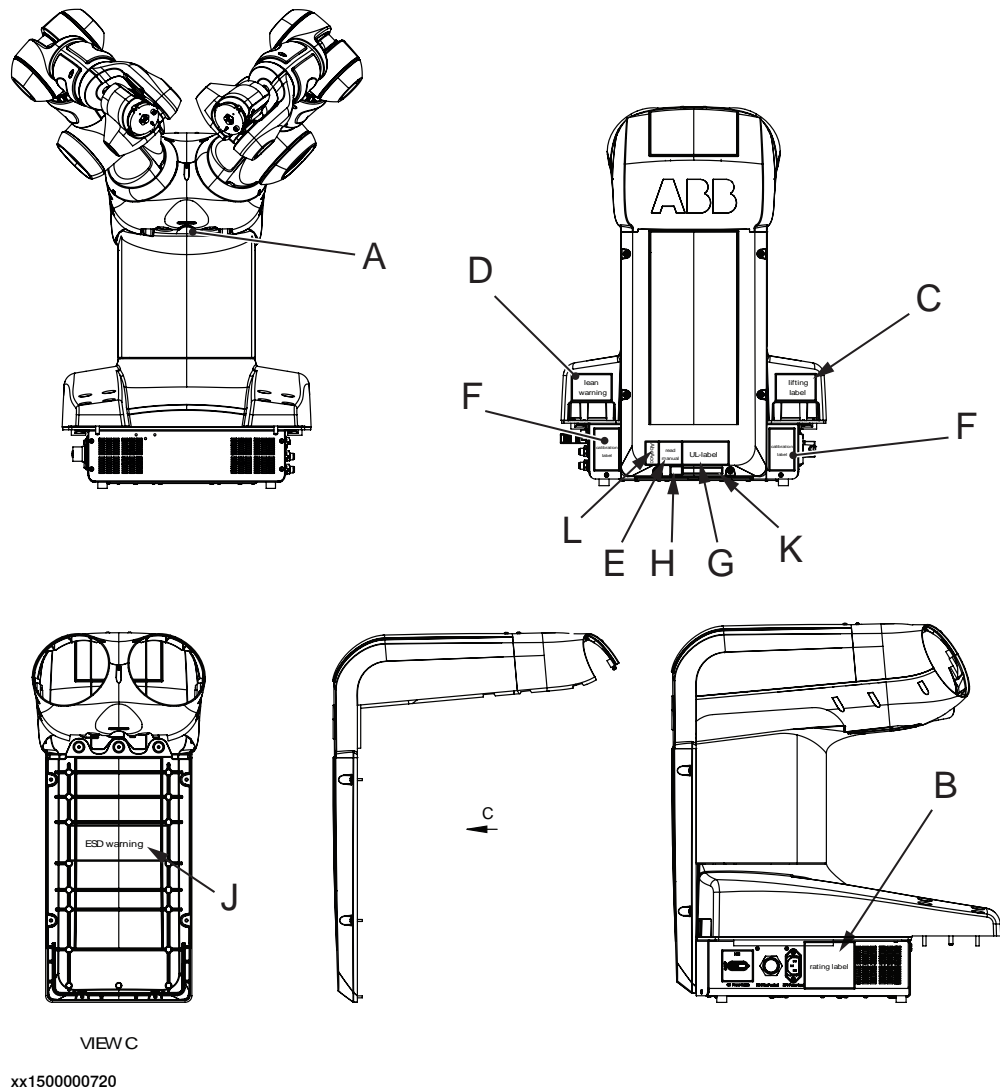
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1 Spare parts and exploded views

1.6.1 Spare parts - labels and instruction plates

Continued

Spare part illustration



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