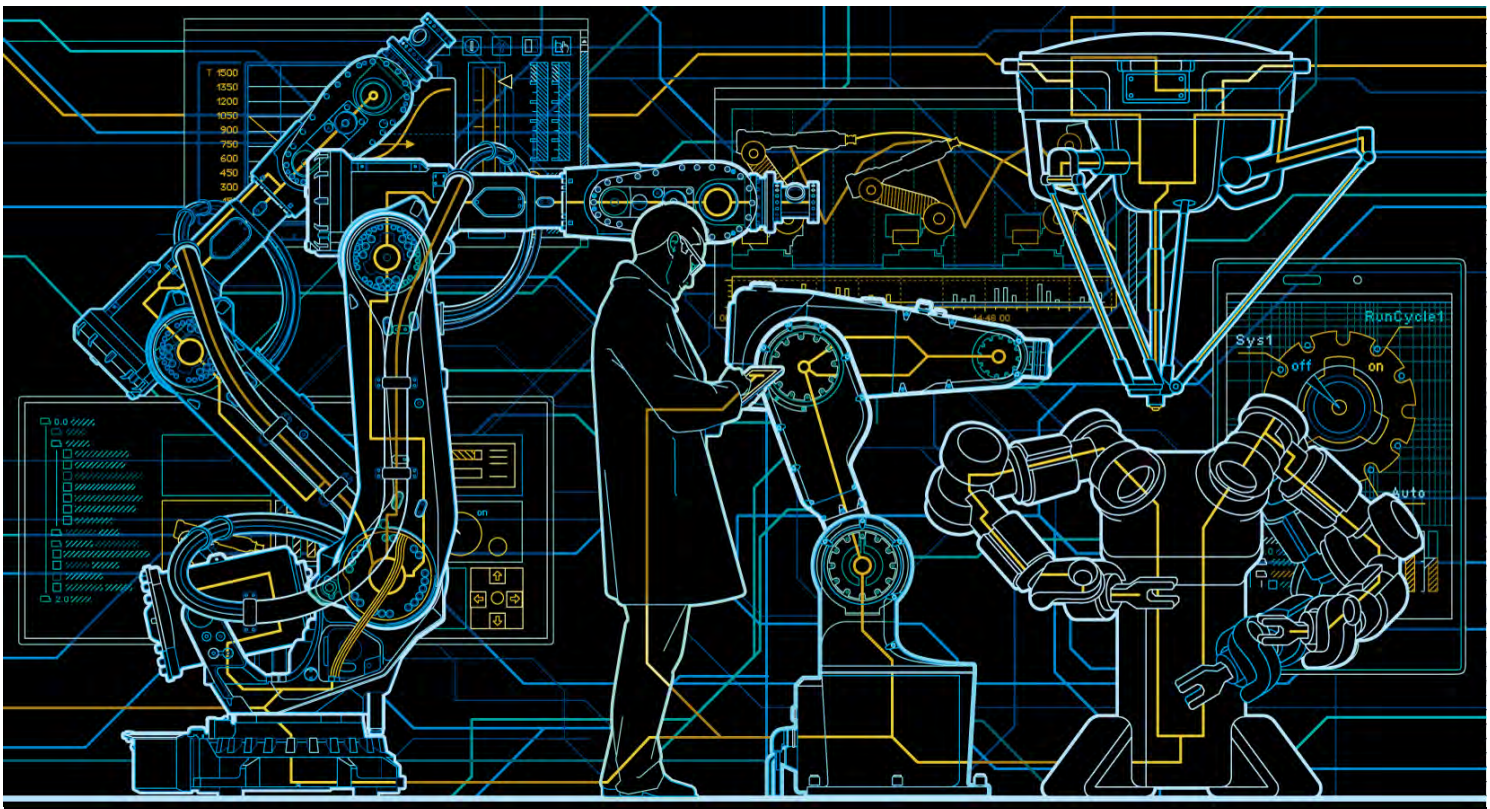

Product manual, spare parts
IRB 1520

Power and productivity
for a better world™

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Product manual, spare parts

IRB 1520ID - 4/1.5

M2004

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Revision: D

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Overview of this manual

About this manual

This manual contains spare parts for:

- IRB 1520ID

Usage

This manual shall be used as a complement to the product manual for IRB 1520 during:

- maintenance work
- repair work.

Who should read this manual?

This manual is intended for:

- maintenance personnel
- repair personnel.

Prerequisites

Maintenance/repair/installation personnel working with an ABB Robot must:

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

References

Reference	Document ID
Product manual - IRB 1520	*3HAC043435-001*
Circuit diagram - IRB 1520	*3HAC039498-007*

Revisions

Revision	Description
-	First edition
A	This edition contains the following changes: • A new SMB unit and battery is introduced, with longer battery lifetime.
B	This edition contains the following changes: • Spare parts with color Graphite White are added to the spare part lists.
C	New spare part numbers added for axis-1, axis-2, and axis-3 motors, and also for connection boxes.
D	Corrected spare part Plate for axis to Protection screw.

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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.

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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 - Introduction to RAPID*
- *Operating manual - IRC5 with FlexPendant*
- *Operating manual - RobotStudio*
- *Operating manual - Trouble shooting IRC5*, for the controller and manipulator.

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1 Spare part lists and illustrations

1.1 Spare parts - complete robot

Spare part list

Pos.	Description	Spare part no.	Qty
A	Labels and plate set	3HAC039497-001	1 pc

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1.2 Spare parts - motors

Spare part list

All the spare part numbers for the motors include both the pinion and required o-ring. The o-ring can also be ordered separately and is listed directly under the motor spare part.

Note

Motors and connection boxes for Type B are not compatible with other types and can therefore only be used to replace other motors and connection boxes of Type B.

Pos.	Description	Spare part no.	Color	Qty
A	Motor, axis 1	3HAC041529-001 (for other than Type B)	ABB Orange	1 pc
		3HAC054857-001 (for Type B)		
	Motor, axis 1	3HAC050430-001 (for other than Type B)	Graphite White	1 pc
		3HAC054858-001 (for Type B)		
B	O-ring, axis 1 motor	3HAB3772-102	-	1 pc
C	Connection box	3HAC041528-001 (for other than Type B)	ABB Orange	2 pcs
		3HAC056381-001 (for Type B)		
	Connection box	3HAC050431-001 (for other than Type B)	Graphite White	2 pcs
		3HAC056382-001 (for Type B)		
D	Motor cover	3HAC041565-001	ABB Orange	2 pcs
	Motor cover	3HAC050432-001	Graphite White	2 pcs
E	Motor, axis 2	3HAC041531-001 (for other than Type B)	ABB Orange	1 pc
		3HAC054859-001 (for Type B)		
	Motor, axis 2	3HAC050433-001 (for other than Type B)	Graphite White	1 pc
		3HAC054860-001 (for Type B)		
F	O-ring, axis 2 motor	3HAB3772-102	-	1 pc
G	Motor, axis 3	3HAC041749-001 (for other than Type B)	-	1 pc
		3HAC054861-001 (for Type B)		
H	O-ring, axis 3 motor	3HAB3772-112	-	1 pc

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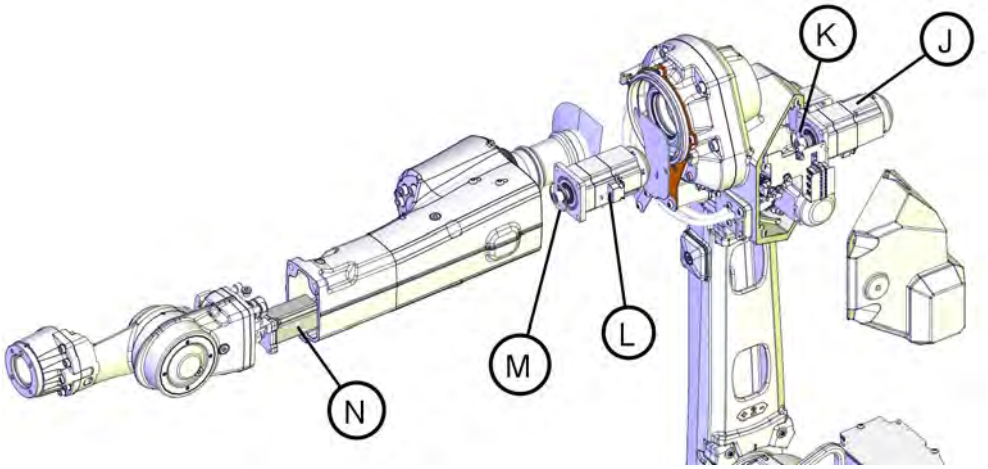
Pos.	Description	Spare part no.	Color	Qty
J	Motor, axis 4	3HAC021799-003	-	1 pc
K	O-ring, axis 4 motor	3HAB3772-81	-	1 pc
L	Motor, axis 5	3HAC021799-003	-	1 pc
M	O-ring, axis 5 motor	3HAB3772-81	-	1 pc
N	Motor, axis 6	3HAC17342-1	-	1 pc

Spare part - illustrations



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1.2 Spare parts - motors
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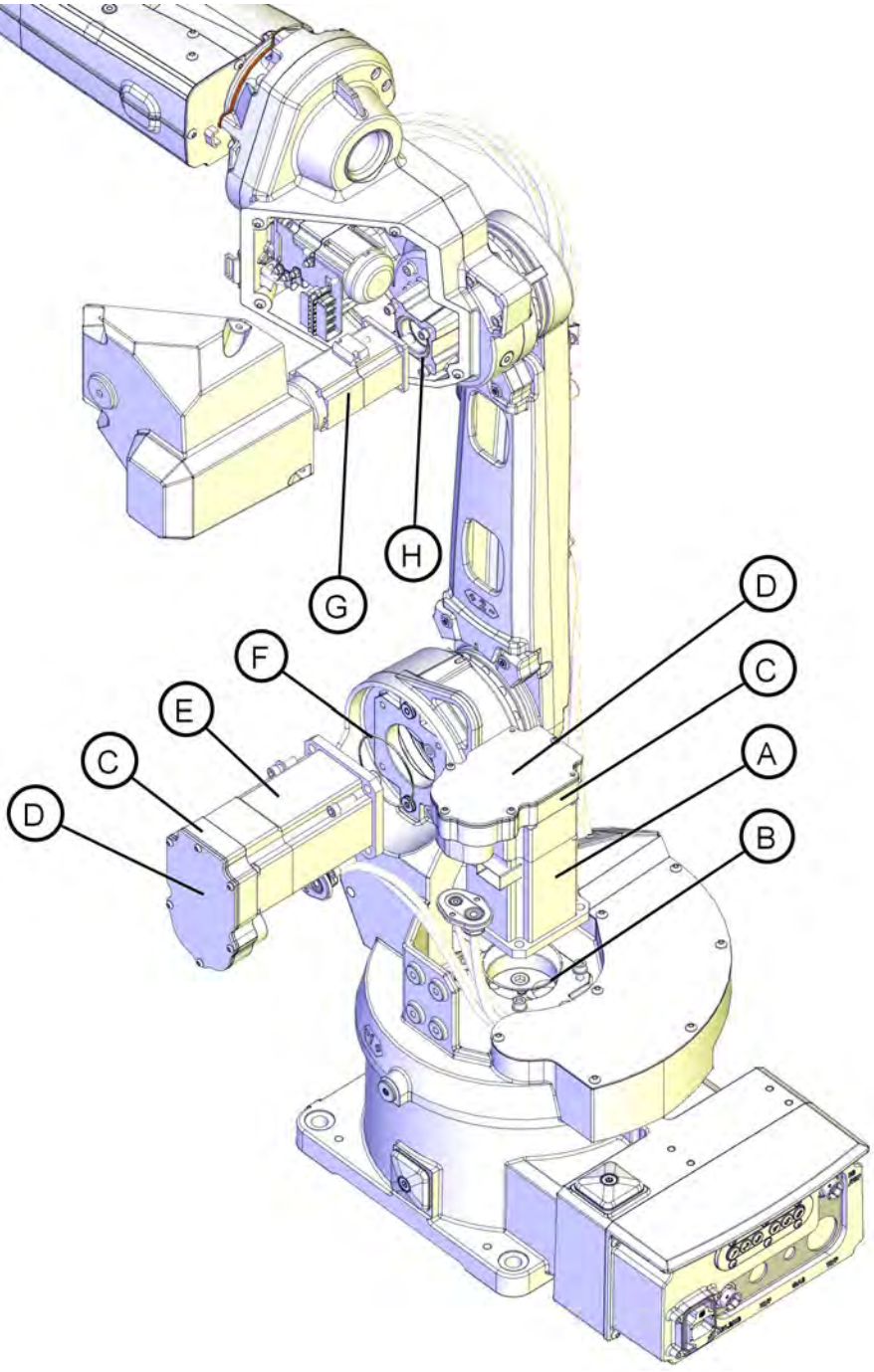

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1.3 Spare parts - gearboxes

Spare part list

Pos.	Description	Spare part no.	Color	Qty
A	Gearbox, axis 1	3HAC037835-001	-	1 pc
B	O-ring, axis 1 gearbox	3HAB3772-65	-	1 pc
C	O-ring, axis 1 gearbox	21520431-20	-	6 pcs
D	Gearbox, axis 2	3HAC041572-001	ABB Orange	1 pc
	Gearbox, axis 2	3HAC050429-001	Graphite White	1 pc
E	Gearbox, axis 3	3HAC041572-001	ABB Orange	1 pc
	Gearbox, axis 3	3HAC050429-001	Graphite White	1 pc

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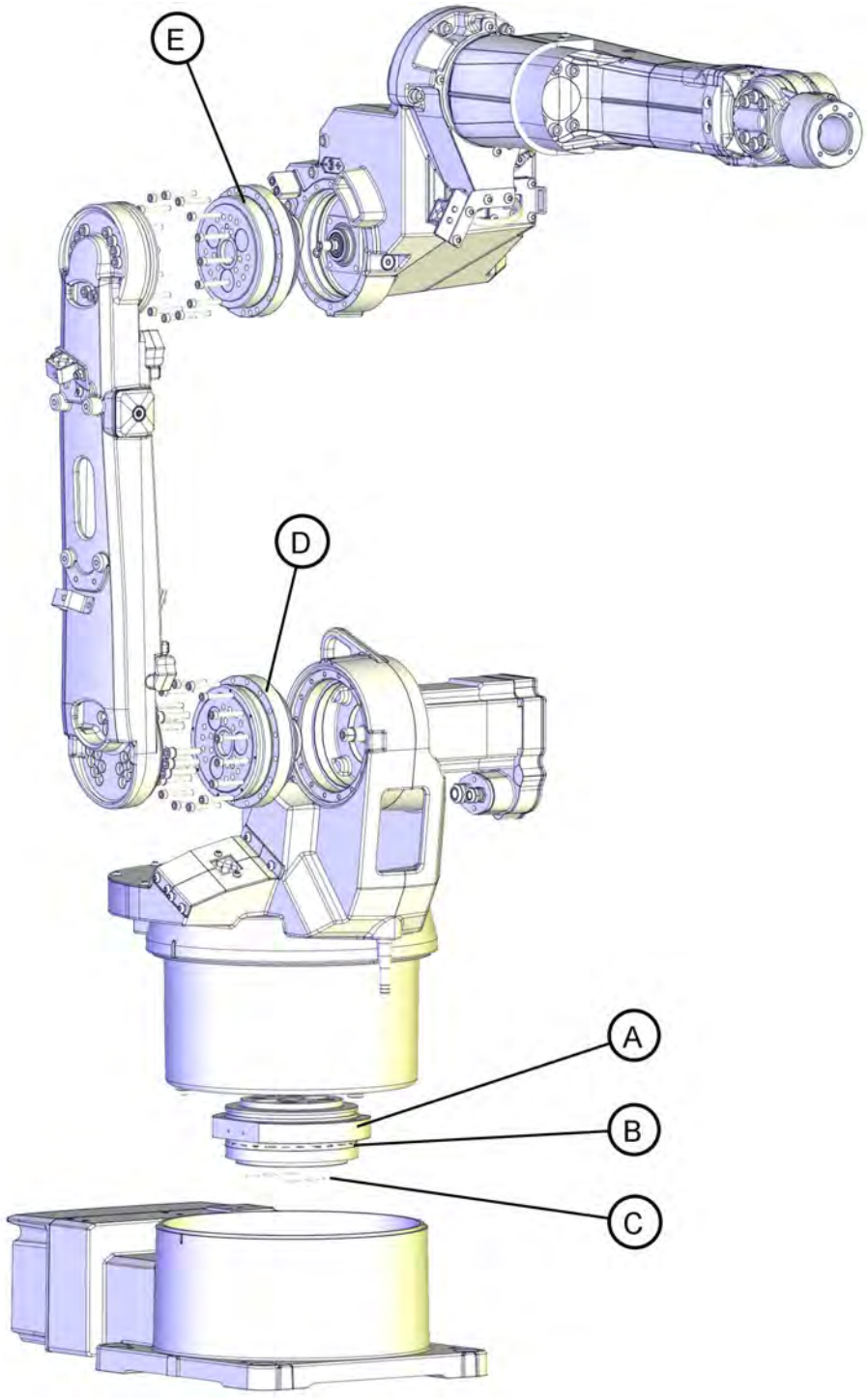
1.3 Spare parts - gearboxes
Continued

Spare part - illustration



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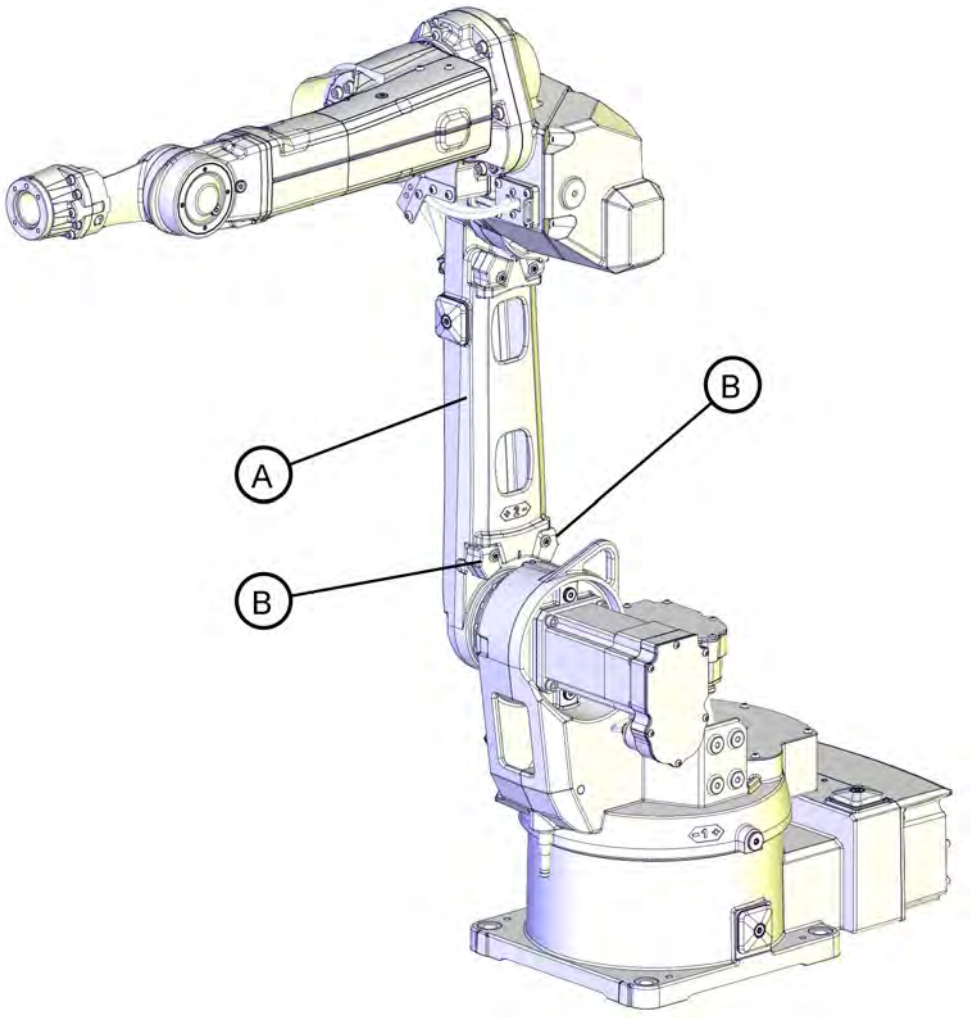
1.4 Spare parts - lower arm

Spare part list

Pos.	Description	Spare part no.	Color	Qty
A	Lower arm	3HAC041532-001	ABB Orange	1 pc
	Lower arm	3HAC050427-001	Graphite White	1 pc
B	Damper, axis 2	3HAC041533-001	-	2 pcs

Spare part - illustration



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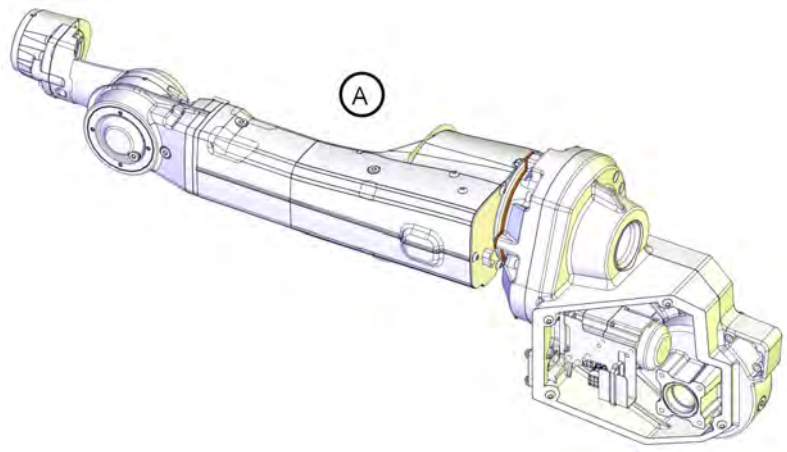
1.5 Spare parts - upper arm and wrist

Spare part list

Pos.	Description	Spare part no.	Color	Qty
A	Upper arm	3HAC041534-001	ABB Orange	1 pc
	Upper arm	3HAC050426-001	Graphite White	1 pc
B	Wrist	3HAC027716-001	ABB Orange	1 pc
	Wrist	3HAC050411-001	Graphite White	1 pc
C	Cable harness	3HAC027523-001	-	1 pc
D	Armhouse cover	3HAC041767-001	ABB Orange	1 pc
	Armhouse cover	3HAC050425-001	Graphite White	1 pc
E	Mechanical stop, axis 3	3HAC041768-001	-	1 pc
F	Cover, upper arm tube	3HAC027877-001	ABB Orange	1 pc
	Cover, upper arm tube	3HAC050413-001	Graphite White	1 pc
G	Bracket	3HAC040074-001	-	1 pc
H	V-ring, axis 4	3HAB3732-25	-	1 pc

Spare part - illustration



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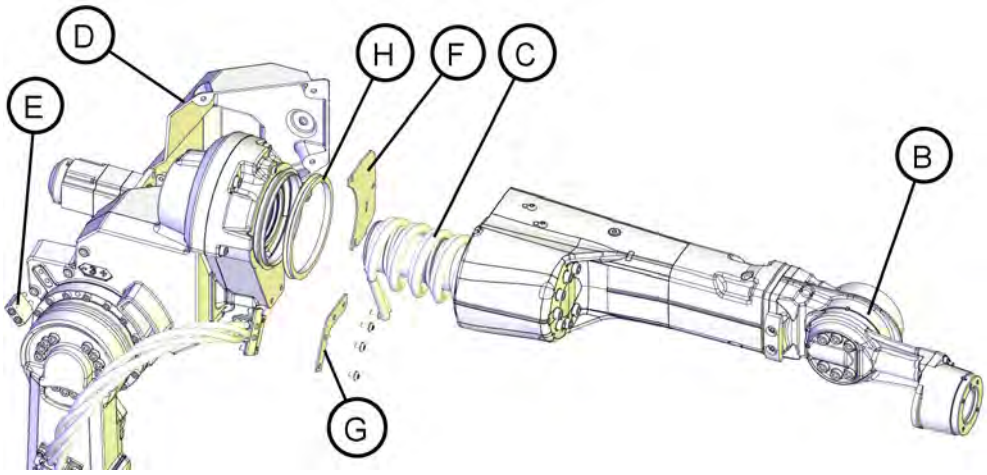

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1.6 Spare parts - base and frame

Spare part list

Pos.	Description	Spare part no.	Color	Qty
A	Oil draining tube	3HAC041258-001	-	1 pc
B	Plate for connector	3HAC039881-001	-	1 pc
C	Cover, frame	3HAC041520-001	ABB Orange	1 pc
	Cover, frame	3HAC050424-001	Graphite White	1 pc
D	Base	3HAC041525-001	ABB Orange	1 pc
	Base	3HAC050420-001	Graphite White	1 pc
E	Frame	3HAC041526-001	ABB Orange	1 pc
	Frame	3HAC050423-001	Graphite White	1 pc
F	Cover	3HAC041746-001	ABB Orange	1 pc
	Cover	3HAC050421-001	Graphite White	1 pc
G	Cover	3HAC041747-001	ABB Orange	1 pc
	Cover	3HAC050422-001	Graphite White	1 pc
H	Base cover, including gasket (3HAC039951-001)	3HAC041523-001	ABB Orange	1 pc
	Base cover, including gasket (3HAC039951-001)	3HAC050419-001	Graphite White	1 pc
J	Cable protection, frame	3HAC039159-001	-	1 pc
K	Cable protection, base	3HAC039158-001	-	1 pc
L	Mechanical stop, axis 1	3HAC041530-001	-	1 pc

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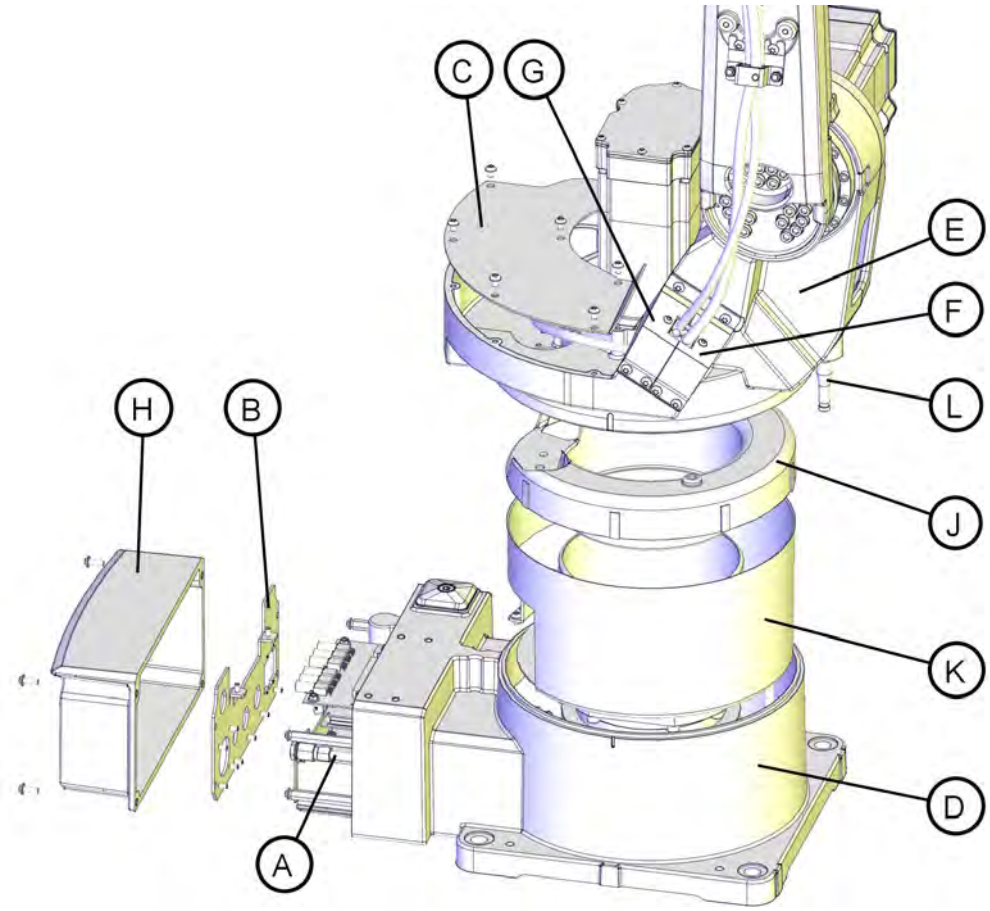
Spare part - illustration



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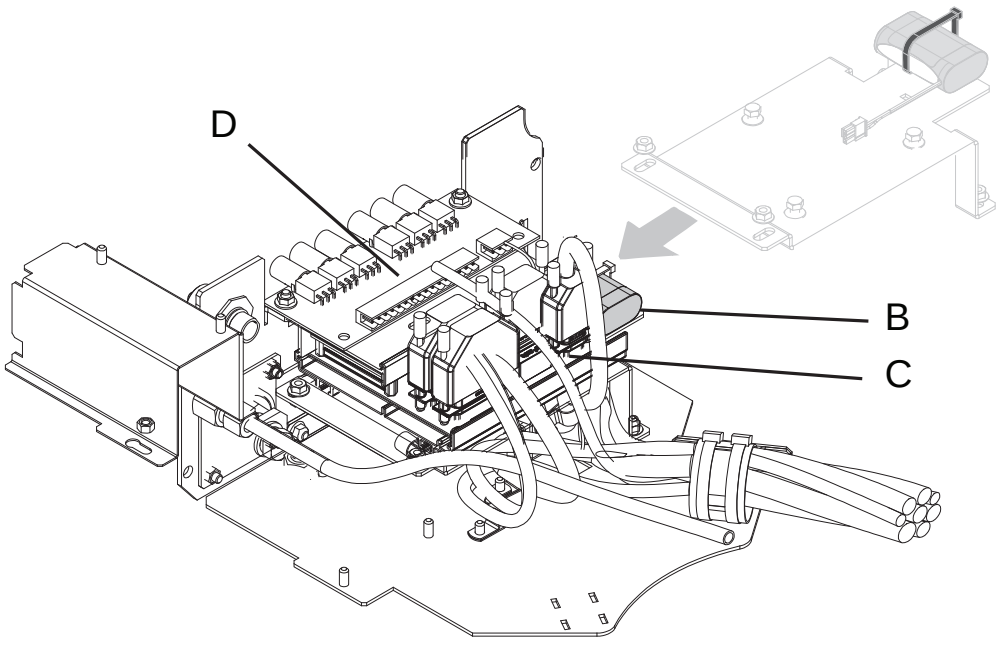
1.7 Spare parts - cable harness, brake release and SMB

Spare part list

Pos.	Description	Spare part no.	Qty
-	Cable harness, standard	3HAC039515-001	
-	Cable harness, AW	3HAC039514-001	
B	Battery pack (3-pole battery contact)	3HAC044075-001	RMU Lithium Can only be used with SMB board 3HAC044168-001
B	Battery pack (2-pole battery contact)	3HAC16831-1	Lithium Can only be used with SMB board 3HAC031851-001
C	Serial measurement board	3HAC044168-001	RMU 101
C	Serial measurement board	3HAC031851-001	DSQC633A
D	Push button unit	3HAC020967-001	
E	Protection screw	3HAC14024-1	

Spare part - illustration

RMU 101



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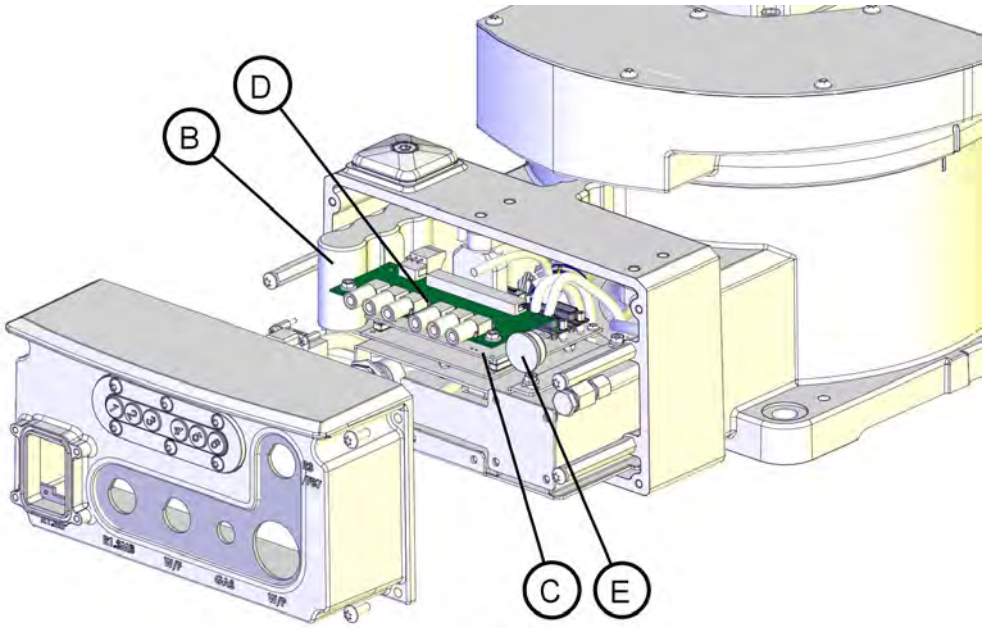
DSQC633A



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