

Product manual, spare parts IRB 120

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Product manual, spare parts

IRB 120 - 3/0.6

IRB 120T - 3/0.6

IRC5

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Revision: C

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Overview of this manual

About this manual

This manual contains spare parts for:

- IRB 120 and all its variants.

Usage

This manual shall be used as a complement to the product manual for IRB 120 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 part lists and illustrations	Complete spare part list and complete list of robot components shown in exploded views.

References

Reference	Document ID
<i>Product manual - IRB 120</i>	<i>3HAC035728-001</i>
<i>Circuit diagram - IRB 120</i>	<i>3HAC031408-003</i>

Revisions

Revision	Description
-	First edition
A	This edition contains the following changes: <ul style="list-style-type: none">• Spare parts with color Graphite White are added to the spare part lists.
B	New spare part number for timing belts on axis-3 motor and axis-5 motor, and also for battery pack.
C	This edition contains the following changes: <ul style="list-style-type: none">• Spare parts with food grade lubrication added.• Minor corrections.

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 - Axes 1 and 2

Spare parts axes 1-2

See *Illustration axes 1-2 on page 12*.

Item	Description	Spare part number	Protection type	Color
1	Base with mechanical stop	3HAC049973-001	Standard	ABB Orange
	Base with mechanical stop	3HAC049974-001	Standard	Graphite White
	Base with mechanical stop	3HAC042144-001	Clean Room	White
2	Rotational AC motor, including gearbox (axes 1 & 2)	3HAC037281-001	-	-
	Rotational AC motor, food grade lubrication, including gearbox (axes 1 & 2)	3HAC057909-001	Clean Room (with food grade lubrication)	White
4	Cable guide	3HAC031119-001	-	-
6	Mechanical stop pin	3HAC031694-001	Standard	-
	Mechanical stop pin	3HAC042068-001	Clean Room	-
9	VK-cover	3HAA2166-23	-	-
10	Swing plate with mechanical stop	3HAC049975-001	Standard	ABB Orange
	Swing plate with mechanical stop	3HAC049976-001	Standard	Graphite White
	Swing plate with mechanical stop	3HAC042146-001	Clean Room	White
11	Cable guide	3HAC031133-001	-	-
15	Swing housing with mechanical stop	3HAC049977-001	Standard	ABB Orange
	Swing housing with mechanical stop	3HAC049978-001	Standard	Graphite White
	Swing housing with mechanical stop	3HAC042147-001	Clean Room	White
16	Damper	3HAC031871-001	-	-
17	Cable guide	3HAC031134-001	-	-
18	Cable guide	3HAC031135-001	-	-
20	Calibration bracket	3HAC033060-001	-	-

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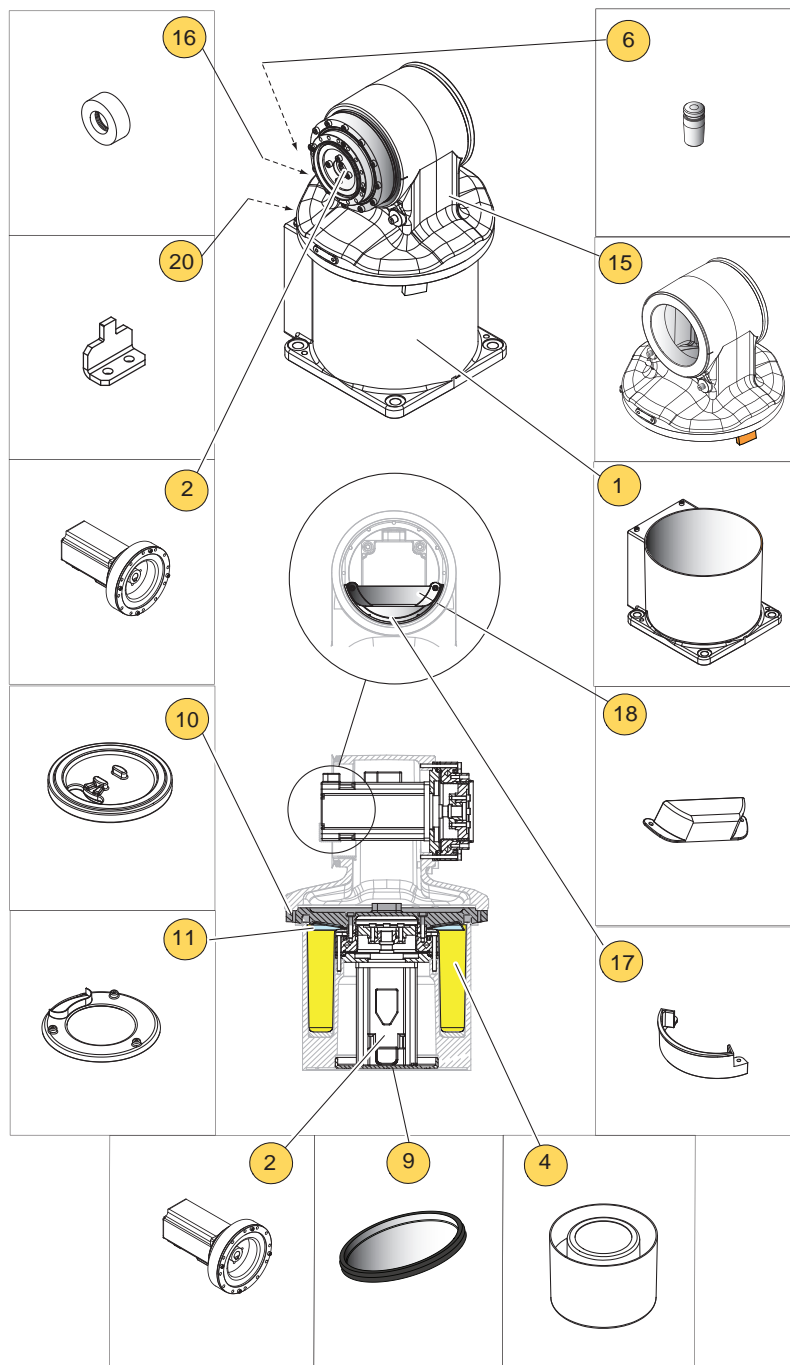
1 Spare part lists and illustrations

1.1 Spare parts - Axes 1 and 2

Continued

Illustration axes 1-2

See [Spare parts axes 1-2 on page 11](#).



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1.2 Spare parts - Axis 3

Spare parts, axis 3

See *Illustration, spare parts axis 3 on page 14*.

Item	Description	Spare part number	Protection type	Color
1	Lower arm with mechanical stop ⁱ	3HAC049979-001	Standard	ABB Orange
	Lower arm with mechanical stop ⁱ	3HAC049980-001	Standard	Graphite White
	Lower arm with mechanical stop ⁱ	3HAC042148-001	Clean Room	White
	Lower arm with mechanical stop, food grade lubrication ⁱⁱ	3HAC057910-001	Clean Room (with food grade lubrication)	White
2	Motor unit with timing belt wheel	3HAC031904-001	-	-
5	Motor cover (axis 3)	3HAC049984-001	Standard	ABB Orange
	Motor cover (axis 3)	3HAC049985-001	Standard	Graphite White
	Motor cover (axis 3)	3HAC042149-001	Clean Room	White
10	Timing belt	3HAC053109-001	-	-
11	Mechanical stop pins ⁱⁱⁱ	3HAC031694-001	Standard	-
	Mechanical stop pins ⁱⁱⁱ	3HAC042068-001	Clean Room	-
13	Dampers ⁱⁱⁱ	3HAC031871-001	-	-
6	Lower arm cover	3HAC049986-001	Standard	ABB Orange
	Lower arm cover	3HAC049987-001	Standard	Graphite White
	Lower arm cover	3HAC042151-001	Clean Room	White

ⁱ Including axis-3 gearbox

ⁱⁱ Including axis-3 gearbox with food grade lubrication.

ⁱⁱⁱ Shown in the enlargement in the figure.

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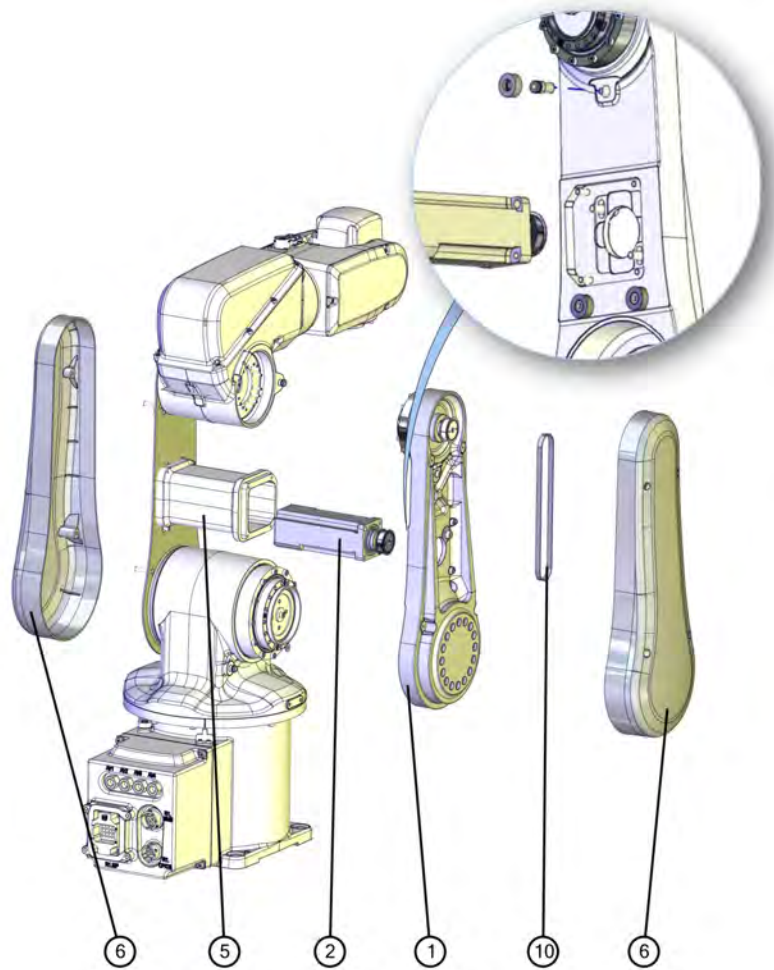
1 Spare part lists and illustrations

1.2 Spare parts - Axis 3

Continued

Illustration, spare parts axis 3

See [Spare parts, axis 3 on page 13](#).



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1.3 Spare parts - Lower arm, side support

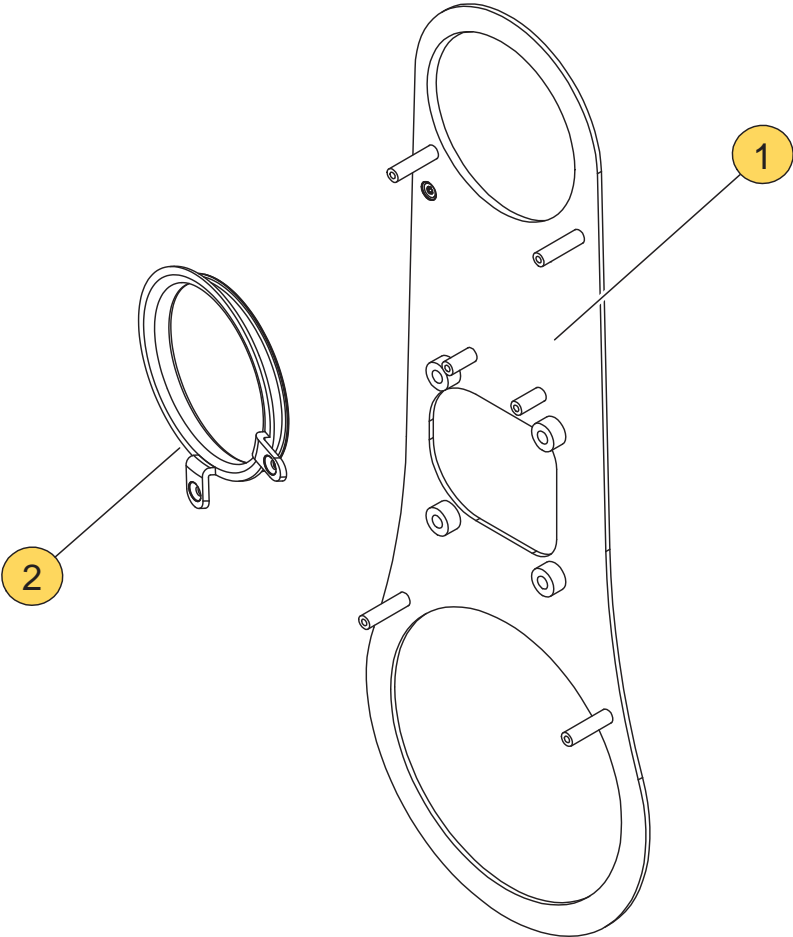
Spare parts, lower arm side support

See [Illustration, Lower arm side support on page 15](#).

Item	Description	Spare part number	Protection type	Color
1	Lower arm, side support	3HAC049988-001	Standard	ABB Orange
	Lower arm, side support	3HAC049989-001	Standard	Graphite White
	Lower arm, side support	3HAC042152-001	Clean Room	White
2	Cable protection cover axis 3	3HAC031126-001	-	-

Illustration, Lower arm side support

See [Spare parts, lower arm side support on page 15](#).



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1 Spare part lists and illustrations

1.4 Spare parts - Upper arm unit

1.4 Spare parts - Upper arm unit

Spare parts upper arm unit

See *Illustration, upper arm unit on page 17*.

Item	Description	Spare part number	Protection type	Color
A	Upper arm with wrist, mechanical ⁱ	3HAC049992-001	Standard	ABB Orange
	Upper arm with wrist, mechanical ⁱ	3HAC049993-001	Standard	Graphite White
	Upper arm with wrist, mechanical ⁱ	3HAC042153-001	Clean Room	White
	Upper arm with wrist, mechanical, food grade lubrication ⁱⁱ	3HAC057911-001	Clean Room (with food grade lubrication)	White
2	Arc shaft cover	3HAC031121-001	-	-
13	Cable protector	3HAC031123-001	-	-
23	Housing inner cover	3HAC031122-001	-	-
7	Housing cover	3HAC049990-001	Standard	ABB Orange
	Housing cover	3HAC049991-001	Standard	Graphite White
	Housing cover	3HAC042154-001	Clean Room	White

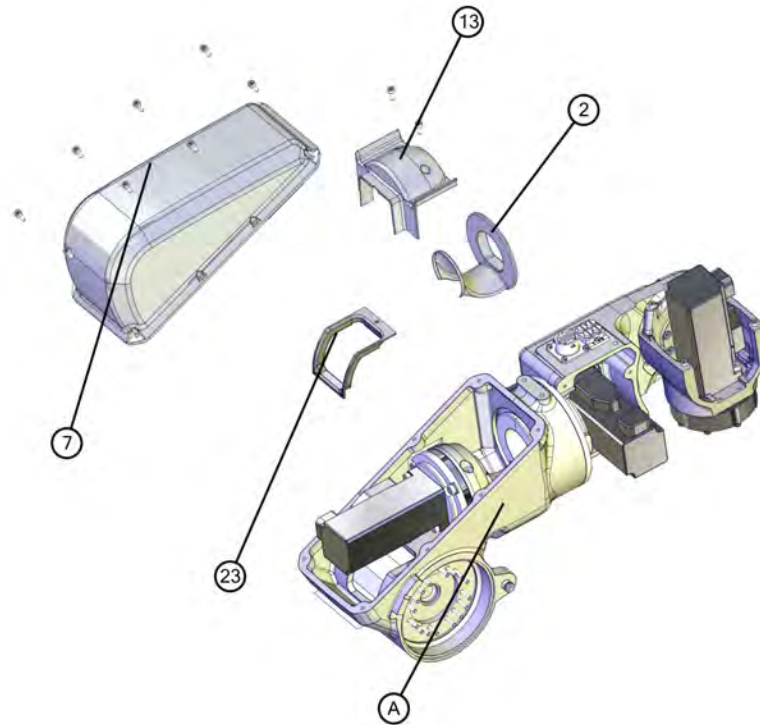
ⁱ Includes axis-4 and axis-6 motors and gearboxes.

ⁱⁱ Includes axis-4 and axis-6 motors and gearboxes with food grade lubrication.

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Illustration, upper arm unit

See [Spare parts upper arm unit on page 16](#).



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1 Spare part lists and illustrations

1.5 Spare parts - Wrist unit

1.5 Spare parts - Wrist unit

Spare parts. wrist unit

See *Illustration, spare parts wrist unit on page 19.*

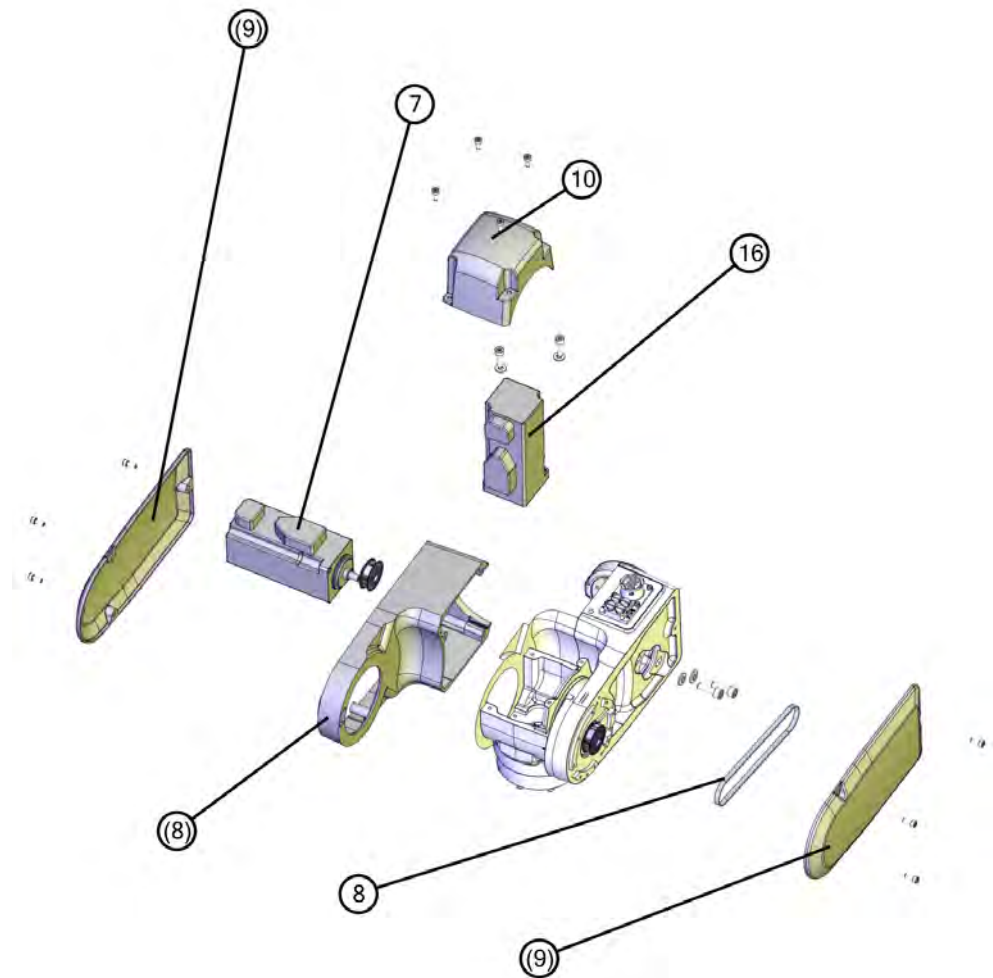
Item	Description	Spare part number	Protection type	Color
7	Motor unit with timing belt pulley	3HAC037303-001	-	-
8	Timing belt	3HAC053110-001	-	-
(8)	Wrist housing, plastic	3HAC049994-001	Standard	ABB Orange
	Wrist housing, plastic	3HAC049995-001	Standard	Graphite White
	Wrist housing, plastic	3HAC042155-001	Clean Room	White
(9)	Wrist side cover	3HAC049996-001	Standard	ABB Orange
	Wrist side cover	3HAC049997-001	Standard	Graphite White
	Wrist side cover	3HAC042156-001	Clean Room	White
(10)	Tilt cover	3HAC049998-001	Standard	ABB Orange
	Tilt cover	3HAC049999-001	Standard	Graphite White
	Tilt cover	3HAC042157-001	Clean Room	White
16	Rotational AC motor with gearbox ⁱ	See <i>Spare parts - Upper arm unit on page 16.</i>		

ⁱ Included in the upper arm.

Continues on next page

Illustration, spare parts wrist unit

See *Spare parts. wrist unit* on page 18.



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1 Spare part lists and illustrations

1.6 Spare parts - Cable harness

1.6 Spare parts - Cable harness

Introduction

The spare parts in this section covers cable harness.

Item	Description	Spare part number
	Cable harness main	3HAC032095-001
	Cable harness EIB	3HAC032076-001
	Cable harness CP/CS	3HAC032296-001
	EIB DSQC401	3HAC032243-001
	Battery pack	3HAC051036-001
	Connector set R1.CP/CS	3HAC037038-001
	Connector set R3.CP/CS	3HAC037070-001

1.7 Spare parts coating

Surface treatment

Part no.	Description
3HAC036639-001	Touch up paint Clean Room, White

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