

ROBOTICS

Product manual, spare parts

IRB 8700



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Product manual, spare parts

IRB 8700 - 550/4.20

IRB 8700 - 800/3.50

IRC5, OmniCore

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Revision: G

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Original instructions.

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Overview of this manual

About this manual

This manual contains spare parts for:

- IRB 8700 and all its variants.

Usage

This manual shall be used as a complement to the product manual for IRB 8700 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
Spare parts and exploded views	Complete spare part list and complete list of robot components shown in exploded views.

References

Reference	Document ID
<i>Product manual - IRB 8700</i>	<i>3HAC052853-001</i>

Revisions

Revision	Description
-	First edition
A	Published in release R16.2. The following updates are done in this revision: <ul style="list-style-type: none"> • Updated spare parts due to sealing upgrade in the motors: <ul style="list-style-type: none"> - Motors - Upper arm excluding wrist - Wrist - Axis 6 complete

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Revision	Description
B	Published in release R17.2. The following updates are done in this revision: <ul style="list-style-type: none">• Added orange spare parts• Changed article number for connection box axis 6.• Added sealing ring to gearboxes at axis 2, axis 3 and axis 6.• Corrected position number order for the SMB unit spare parts table.• Changed article number for the brake release unit.• Added spare parts for cooling fans.• Updated spare parts - wrist support shaft.
C	Published in release R18.1. The following updates are done in this revision: <ul style="list-style-type: none">• Updated spare part number brake release unit (was BRK001, is DSQC1052).
D	Published in release R18.2. The following updates are done in this revision: <ul style="list-style-type: none">• Updated spare part numbers for cross roller bearings (is 3HAC062636-004 and 3HAC062636-005, was 3HAC062636-002 and 3HAC062636-003).
E	Published in release 23B. The following updates are made in this revision: <ul style="list-style-type: none">• Updated spare part numbers for cross roller bearings (is 3HAC067294-003 and 3HAC067294-002, was 3HAC062636-004 and 3HAC062636-005).• New spare part, guide pin for cross roller bearing.• Corrected spare part number for Hub with pinion, axis 6 gearbox.• Spare part number for axis-4 material set added.• Spare part number for balancing device material set added.
F	Published in release 24B. The following updates are made in this revision: <ul style="list-style-type: none">• Updated all spare part lists with spare part level and added a spare part level definition to the manual.• Added information for the OmniCore robot controller.• Updated the section <i>Lower arm</i>. It is redefined as an L3 spare part.
G	Published in release 24D. The following updates are made in this revision: <ul style="list-style-type: none">• Spare part numbers for parallel bar parts added. Image of parallel bar updated.

Product documentation

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.



Tip

All documents can be found via myABB Business Portal, www.abb.com/myABB.

Product manuals

Manipulators, controllers, DressPack, 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.
- Troubleshooting.
- Decommissioning.
- Reference information (safety standards, unit conversions, screw joints, lists of tools).
- Spare parts list with corresponding figures (or references to separate spare parts lists).
- References to circuit diagrams.

Technical reference manuals

The technical reference manuals describe reference information for robotics products, for example lubrication, the RAPID language, and system parameters.

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, software).
- How to install included or required hardware.
- How to use the application.

Continues on next page

- 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 troubleshooters.

1 Definition of spare part levels

Spare part level

ABB spare parts are categorized into two levels, L1 and L2. Always check the part level before conducting a service work on a spare part.

- L1 spare parts

The L1 parts can be replaced in the field. The maintenance and replacement instructions given in the related product manuals must be strictly followed. If there are any problems, contact your local ABB for support.

- L2 spare parts

To replace the L2 parts require specialized training and might need special tools. Only ABB field service personnel or qualified personnel trained by ABB can replace L2 parts.

- L3 spare parts

L3 spare parts shall only be replaced or repaired by qualified ABB service technician with knowledge of the application due to reduce risk of injury or damage to equipment. Improper installation may void warranty.

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2 Spare parts - Electrical parts

Cable harness



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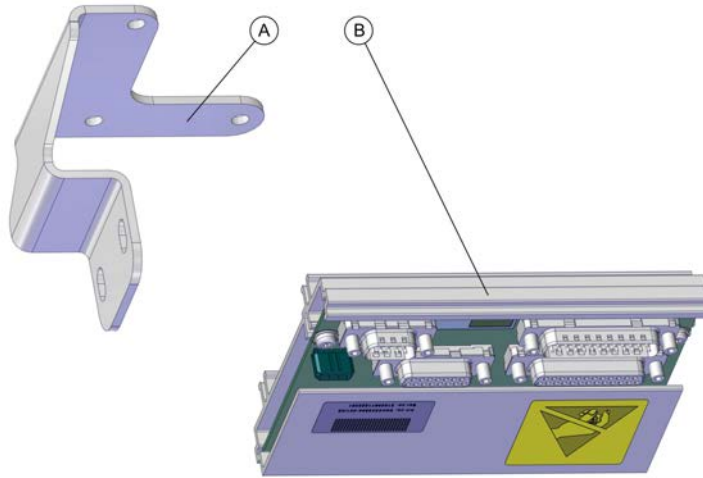
Spare part	Article number	Note	Level
Cable harness	3HAC050792-001		L2
Cable harness Protection	3HAC077677-001	Cable protection hose, between axis 2 and axis 3	L2

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2 Spare parts - Electrical parts

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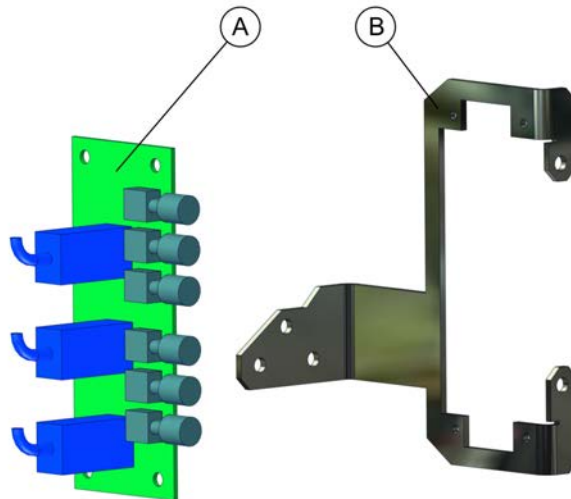
SMB unit



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	Spare part	Article number	Note	Level
A	Bracket	3HAC044073-001	RMU102	L2
B	SMB	3HAC043904-001	RMU102	L2

Brake release unit

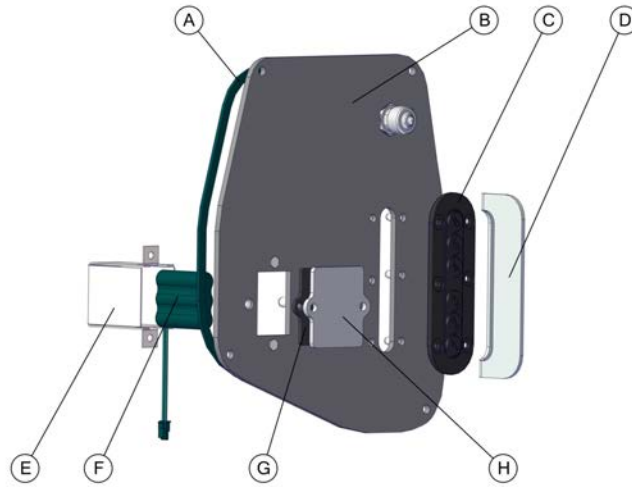


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	Spare part	Article number	Note	Level
A	Brake release unit	3HAC065021-001	Brake release unit DSQC1052 and harness	L2
B	Bracket	3HAC049785-001		L2

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Other parts



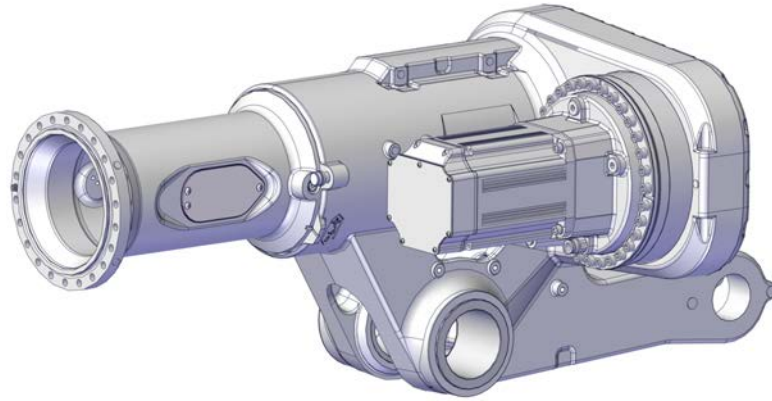
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	Spare part	Article number	Note	Level
A	Gasket	3HAC044074-001		L1
B	Cover	3HAC044076-001		L1
C	Push button guard	3HAC6499-1		L2
D	Button guard plate	3HAC026331-001		L2
E	Battery holder	3HAC044161-001		L2
F	Battery pack	3HAC044075-001	RMU	L1
G	Rubber cloth	3HAC044200-001		L1
H	Cover	3HAC044205-001		L1

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3 Spare parts - Upper arm excluding wrist

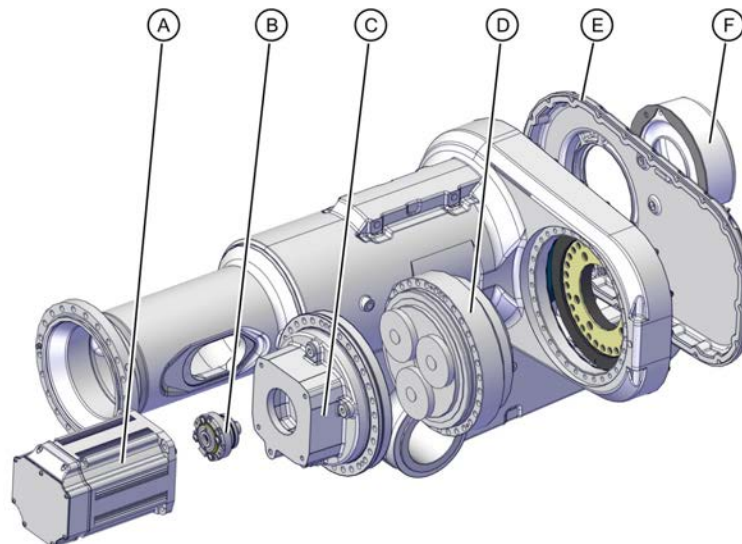
Upper arm excluding wrist



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Spare part	Color	Article number	Note	Level
Upper arm excluding wrist	Graphite White	3HAC048079-006		L2
Upper arm excluding wrist	ABB Orange	3HAC048079-004		L2

Other parts



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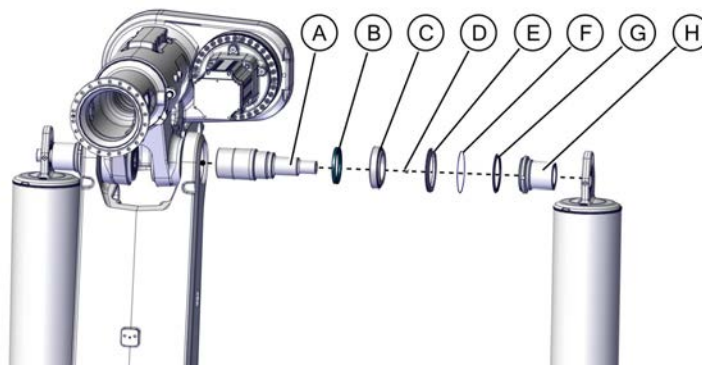
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3 Spare parts - Upper arm excluding wrist

Continued

	Spare part	Article number	Note	Level
A	Rotating AC motor (including pinion)	3HAC058950-003 Graphite White 3HAC049837-003 ABB Orange		L2
B	Hub with pinion	3HAC049906-003		L2
C	Motor flange	3HAC048254-006 Graphite White 3HAC048254-007 ABB Orange		L2
D	Reduction Gear RV-500N-236.36	3HAC043073-003 Graphite White 3HAC048293-001 ABB Orange		L3
E	Cover with sealing	3HAC051221-002 Graphite White 3HAC051221-003 ABB Orange	Sealing article number 3HAA1001-628	L2
F	Cabling cover	3HAC3261-1		L2

Material set axis 4



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	Spare part	Article number	Note	Level
A	Shaft	3HAC048467-001		L2
B	Sealing ring not dust lip	3HAB3702-17		L2
C	Taper roller bearing	3HAA2103-30		L2
D	VK cover	3HAA2166-12		L2
E	Sealing ring	3HAC048722-001		L2
F	O-ring	3HAB3772-58		L2
G	Gamma sealing	3HAC048723-001		L2
H	Lock nut	3HAC048724-001		L2

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Arm extender



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Spare part	Color	Article number	Note	Level
Arm extender	Graphite White	3HAC048171-004		L2
Arm extender	ABB Orange	3HAC048171-005		L2

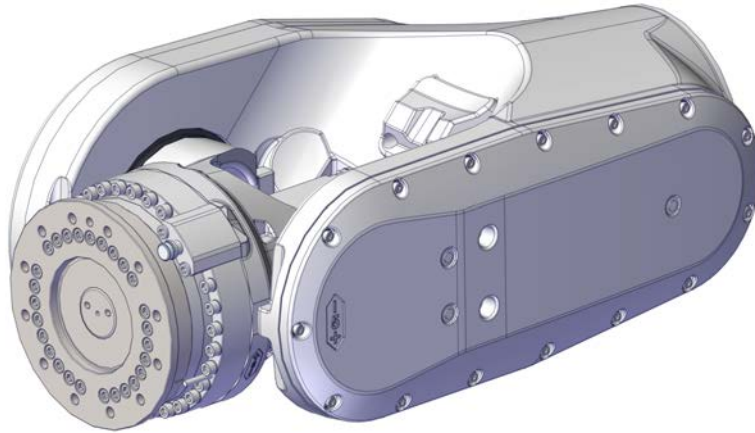
Arm extender - set

Spare part	Article number	Note	Level
Arm extender set	3HAC048171-007 Graphite White 3HAC048171-008 ABB Orange	Including screws and washers	L2

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4 Spare parts - Wrist

Wrist



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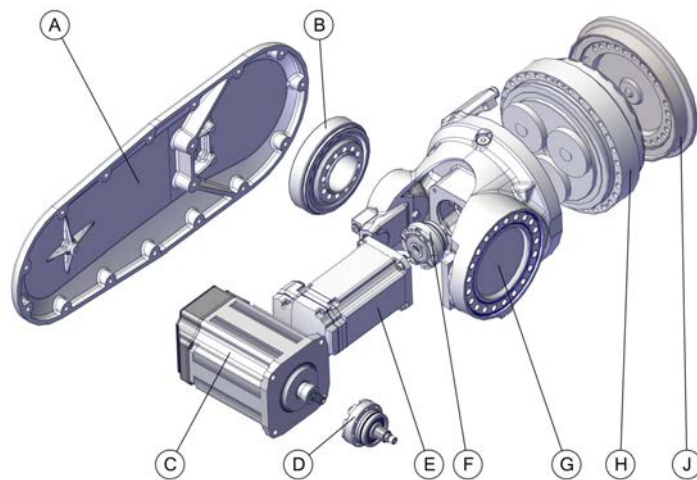
Spare part	Color	Article number	Note	Level
Wrist	Graphite White	3HAC048653-006		L2
Wrist	ABB Orange	3HAC048653-004		L2

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4 Spare parts - Wrist

Continued

Other parts

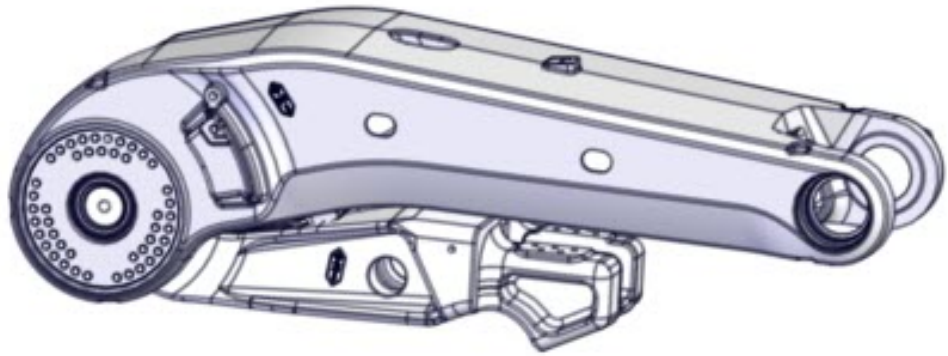


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	Spare part	Article number	Note	Level
A	Cover	3HAC048657-004 Graphite White 3HAC048657-005 ABB Orange		L2
B	Support shaft (including bearing)	3HAC049735-003		L2
C	Rotating AC motor (including pinion)	3HAC058949-003	Article number for o-ring and connection box, see Motors .	L2
D	Hub with pinion	3HAC051022-003		L2
E	Rotating AC motor (including pinion)	3HAC058951-003 Graphite White 3HAC049875-004 ABB Orange	Article number for o-rings and connection box, see Motors .	L2
F	Hub with pinion	3HAC049906-003		L2
G	Axis 6	3HAC048651-006 Graphite White 3HAC048651-004 ABB Orange		L2
H	Reduction Gear RV-500N-236.36	3HAC043073-003 Graphite White 3HAC048293-001 ABB Orange		L2
I	Turning disc (standard)	3HAC048445-003		L2
J	Turning disc (process)	3HAC051003-005		L2

5 Spare parts - Lower arm

Lower arm and parallel arm



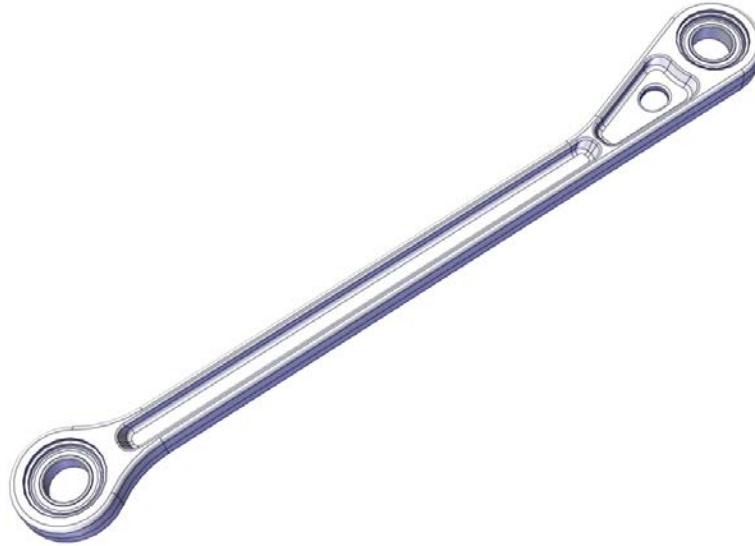
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	Spare part	Article number	Note	Level
A	Lower arm	3HAC048078-003 Graphite White 3HAC048078-004 ABB Orange		L3

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6 Spare parts - Parallel bar

Parallel bar



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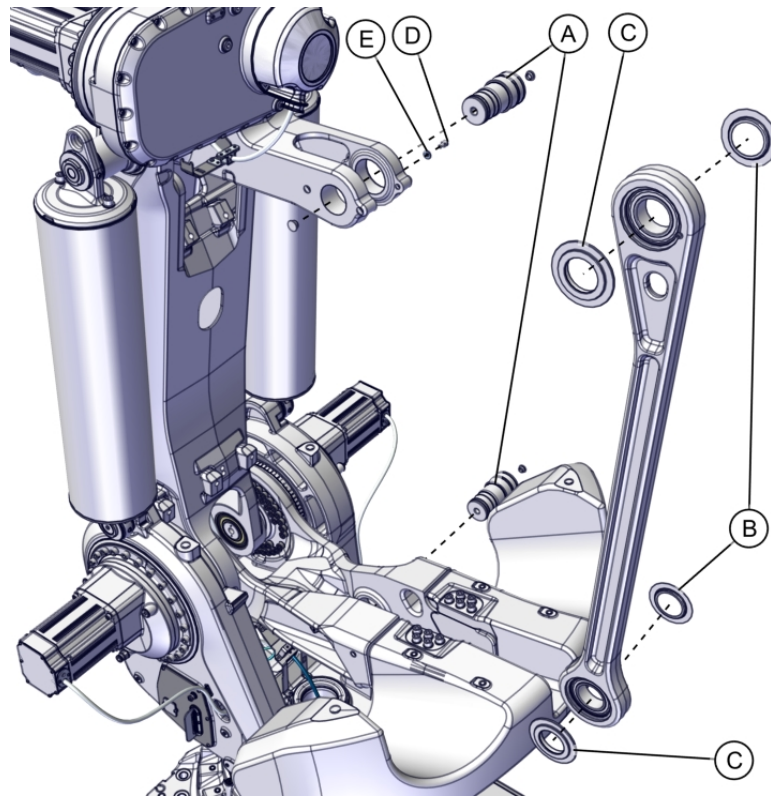
Spare part	Color	Article number	Note	Level
Parallel bar	Graphite White	3HAC048077-003		L2
Parallel bar	ABB Orange	3HAC048077-004		L2
Shaft		3HAC048837-001	Replace if damaged.	L2
Cover washer		3HAC048835-001	Replace if damaged.	L2
Thrust washer		3HAC048836-001	Replace if damaged.	L2
Hex socket head cap screw	M10x16 8.8-A3F	9ADA183-48	Replace if damaged.	L2
Spring washer, conical	10.5x23x2.5 Steel-mZn12c	9ADA334-8	Replace if damaged.	L2

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6 Spare parts - Parallel bar

Continued

Other parts



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	Spare part	Article number	Note	Level
A	Shaft	3HAC048837-001	Replace if damaged.	L2
B	Cover washer	3HAC048835-001	Replace if damaged.	L2
C	Thrust washer	3HAC048836-001	Replace if damaged.	L2
D	Hex socket head cap screw	9ADA183-48	Replace if damaged.	L2
E	Spring washer, conical	9ADA334-8	Replace if damaged.	L2

7 Spare parts - Balancing device

Balancing device



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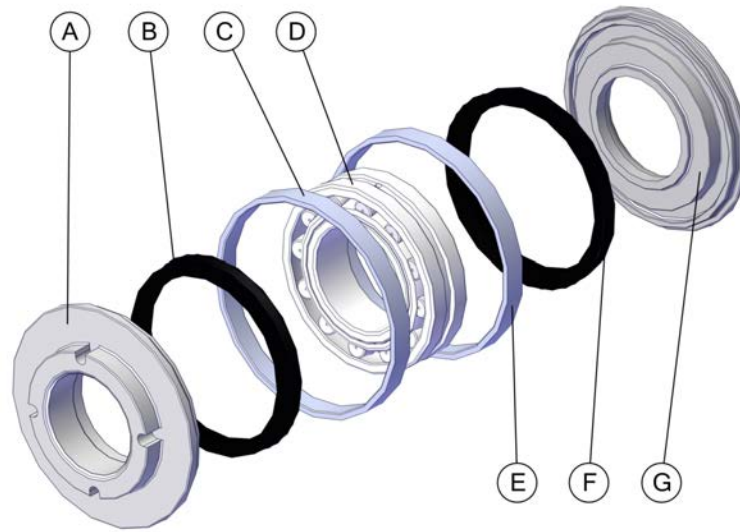
Spare part	Color	Article number	Note	Level
Balancing device	Graphite White	3HAC048239-003		L2
Balancing device	ABB Orange	3HAC048239-004		L2
Balancing device material set	-	3HAC048239-006		L2

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7 Spare parts - Balancing device

Continued

Balancing device material set

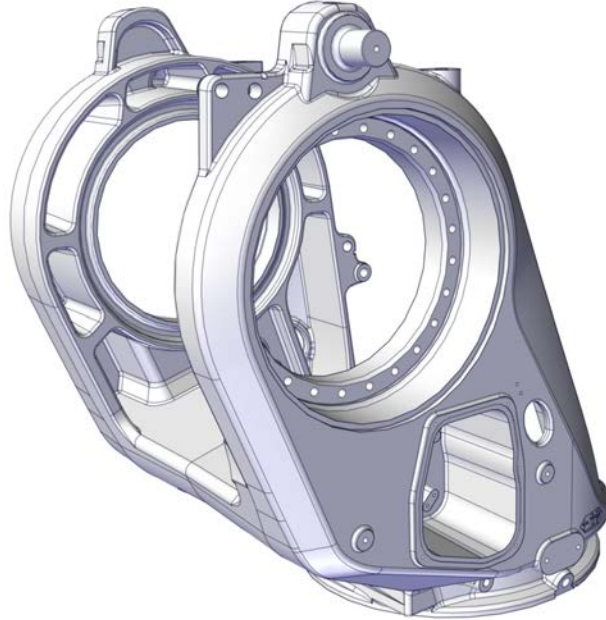


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	Spare part	Article number	Note	Level
	Balancing device material set	3HAC048239-006		L2
A	V-ring			L2
B	Support ring			L2
C	Spherical roller bearing			L2
D	Spacer ring			L2
E	V-ring			L2
F	Support ring			L2

8 Spare parts - Frame and base

Frame



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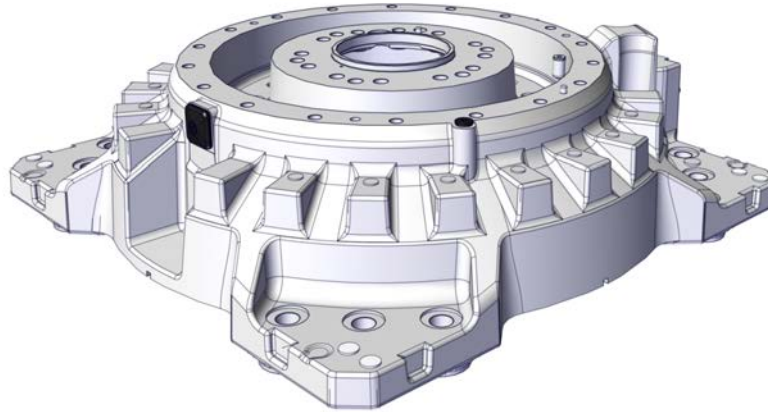
Spare part	Color	Article number	Note	Level
Frame	Graphite White	3HAC048537-005	Make sure to order a new frame with a new cross roller bearing and guide pin.	L2
Frame	ABB Orange	3HAC048537-006	Make sure to order a new frame with a new cross roller bearing and guide pin.	L2

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8 Spare parts - Frame and base

Continued

Base

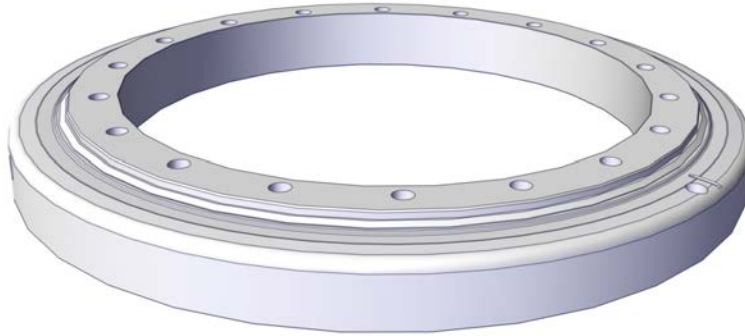


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Spare part	Color	Article number	Note	Level
Base	Graphite White	3HAC048072-006		L2
Base	ABB Orange	3HAC048072-007		L2

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Other parts



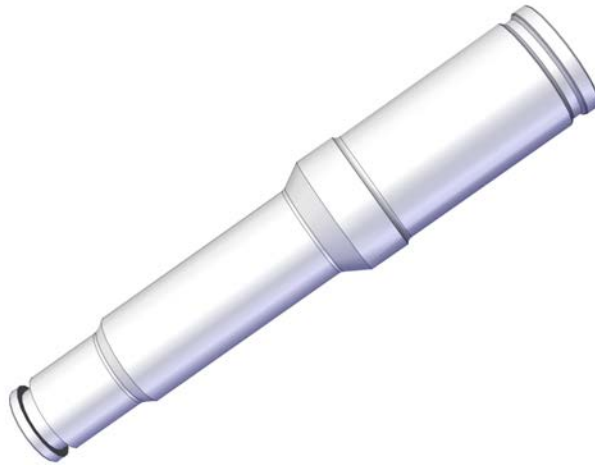
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Spare part	Color	Article number	Note	Level
Cross roller bearing	Graphite White	3HAC067294-003		L2
Cross roller bearing	ABB Orange	3HAC067294-002		L2
Guide pin		3ABA107-56	Use together with cross roller bearing and frame with guide hole.	L2

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8 Spare parts - Frame and base

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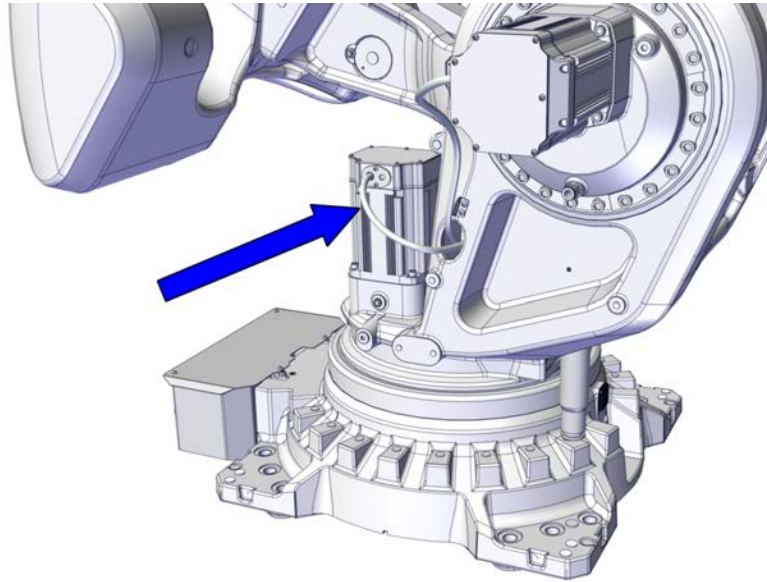
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Spare part	Article number	Note	Level
Mechanical stop pin	3HAC048180-001		L1

9 Spare parts - Motors

9.1 Axis-1 motor (including pinion)

Axis-1 motor



xx1500001893

Spare part	Color	Article number	Note	Level
Rotating AC motor (including pinion)	Graphite White	3HAC058949-003		L2
Rotating AC motor (including pinion)	ABB Orange	3HAC048393-004		L2

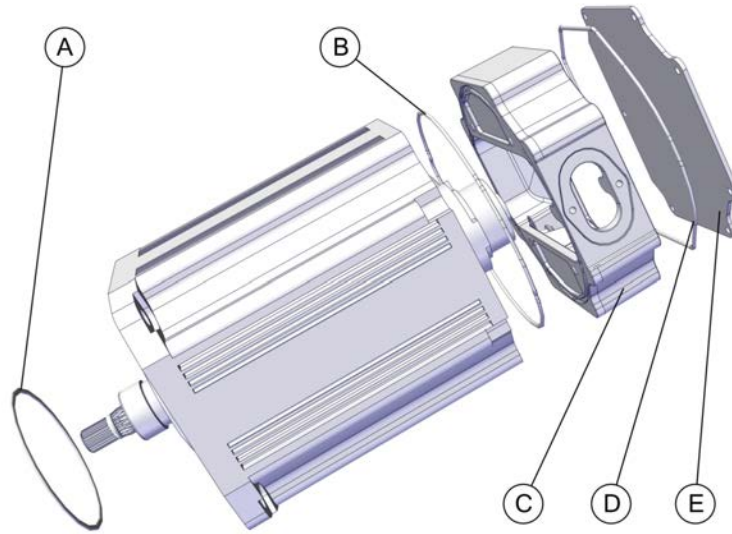
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9 Spare parts - Motors

9.1 Axis-1 motor (including pinion)

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Other parts

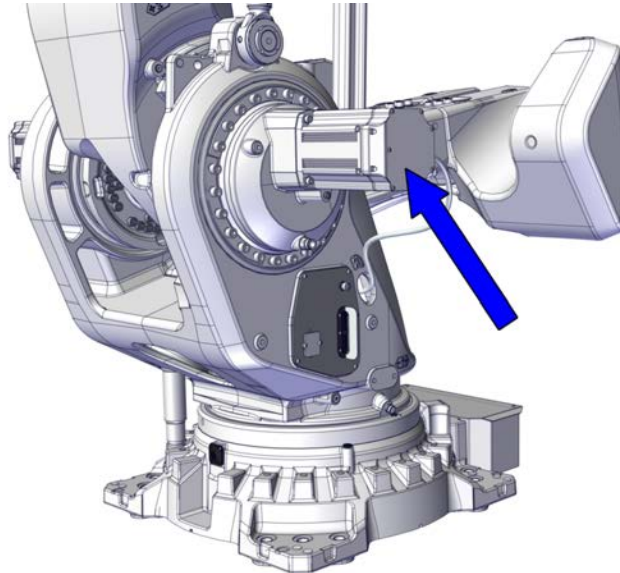


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	Spare part	Article number	Note	Level
A	O-ring	3HAB3772-107	Motor	L2
B	O-ring	3HAC054692-002	For cover and box	L2
C	Connection box	3HAC029299-005 Graphite White 3HAC054660-002 ABB Orange	FS 180	L2
D	O-ring	3HAC054692-002	For cover and box	L2
E	Cover	3HAC029303-004 Graphite White 3HAC029303-005 ABB Orange	For connection box FS 180	L2

9.2 Axis-2 motor (including pinion)

Axis-2 motor



xx1500001895

Spare part	Color	Article number	Note	Level
Rotating AC motor (including pinion)	Graphite White	3HAC058949-003		L2
Rotating AC motor (including pinion)	ABB Orange	3HAC048393-004		L2

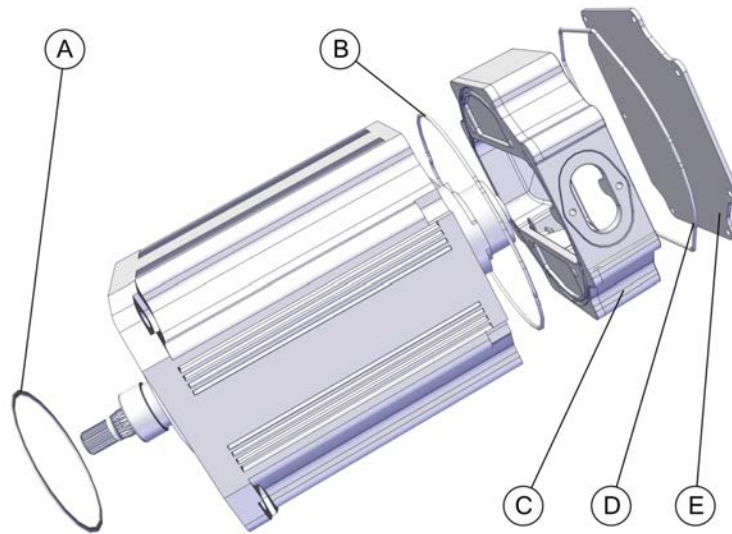
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9 Spare parts - Motors

9.2 Axis-2 motor (including pinion)

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Other parts

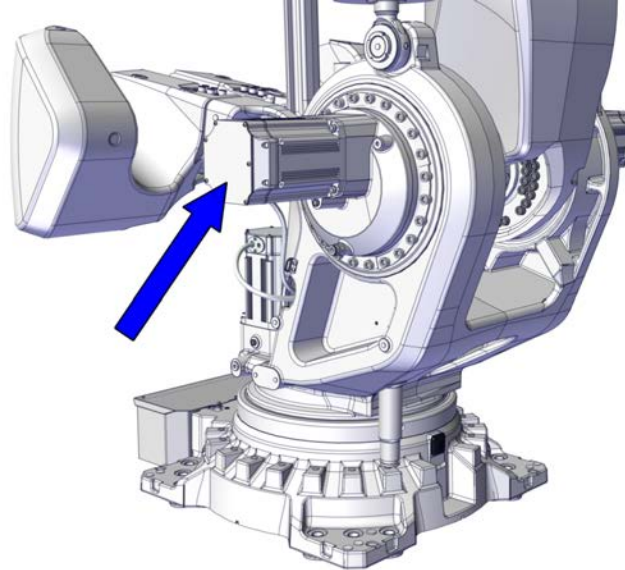


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	Spare part	Article number	Note	Level
A	O-ring	3HAB3772-107	Motor	L2
B	O-ring	3HAC054692-002	For cover and box	L2
C	Connection box	3HAC029299-005 Graphite White 3HAC054660-002 ABB Orange	FS 180	L2
D	O-ring	3HAC054692-002	For cover and box	L2
E	Cover	3HAC029303-004 Graphite White 3HAC029303-005 ABB Orange	For connection box FS 180	L2

9.3 Axis-3 motor (including pinion)

Axis-3 motor



xx1500001896

Spare part	Color	Article number	Note	Level
Rotating AC motor (including pinion)	Graphite White	3HAC058949-003		L2
Rotating AC motor (including pinion)	ABB Orange	3HAC048393-004		L2

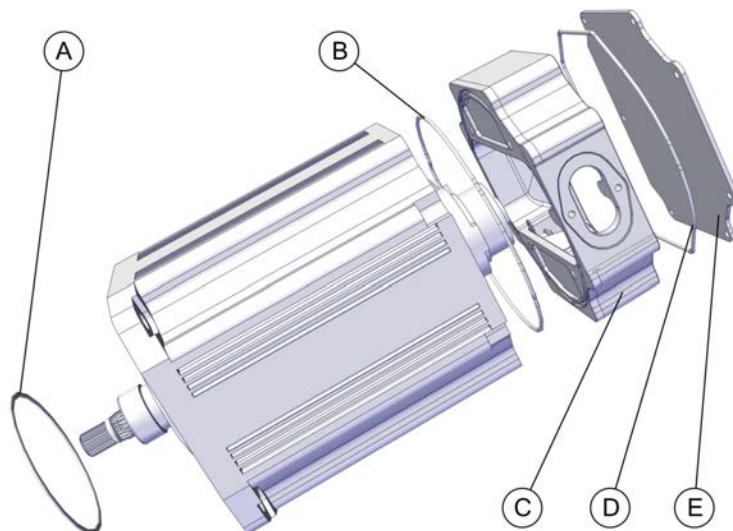
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9 Spare parts - Motors

9.3 Axis-3 motor (including pinion)

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Other parts

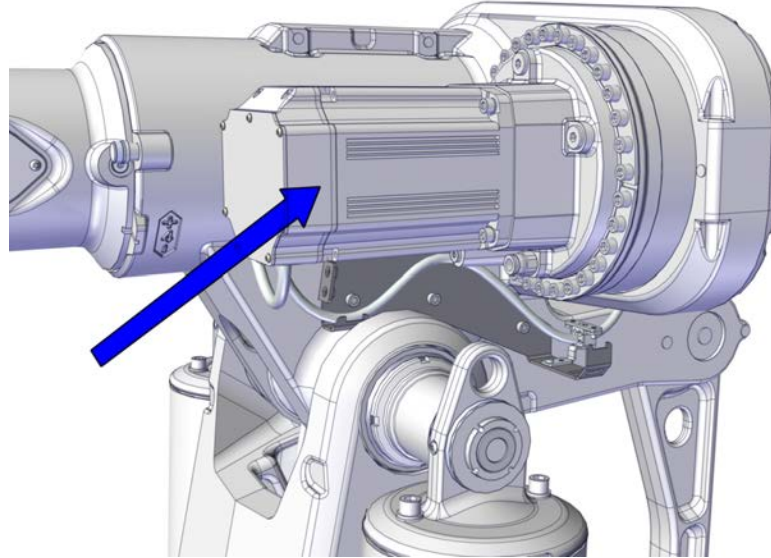


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	Spare part	Article number	Note	Level
A	O-ring	3HAB3772-107	Motor	L2
B	O-ring	3HAC054692-002	For cover and box	L2
C	Connection box	3HAC029299-005 Graphite White 3HAC054660-002 ABB Orange	FS 180	L2
D	O-ring	3HAC054692-002	For cover and box	L2
E	Cover	3HAC029303-004 Graphite White 3HAC029303-005 ABB Orange	For connection box FS 180	L2

9.4 Axis-4 motor (including pinion)

Axis-4 motor



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Spare part	Article number	Note	Level
Rotating AC motor (including pinion)	3HAC058950-003 Graphite White 3HAC049837-003 ABB Orange		L2

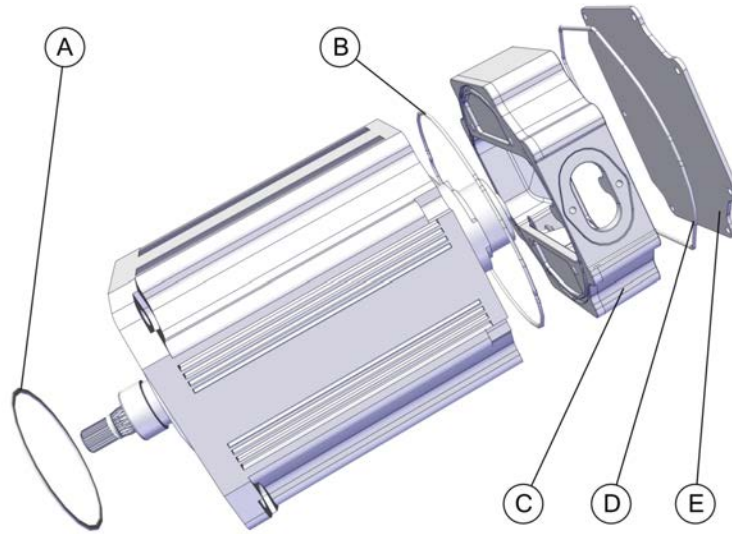
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9 Spare parts - Motors

9.4 Axis-4 motor (including pinion)

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Other parts

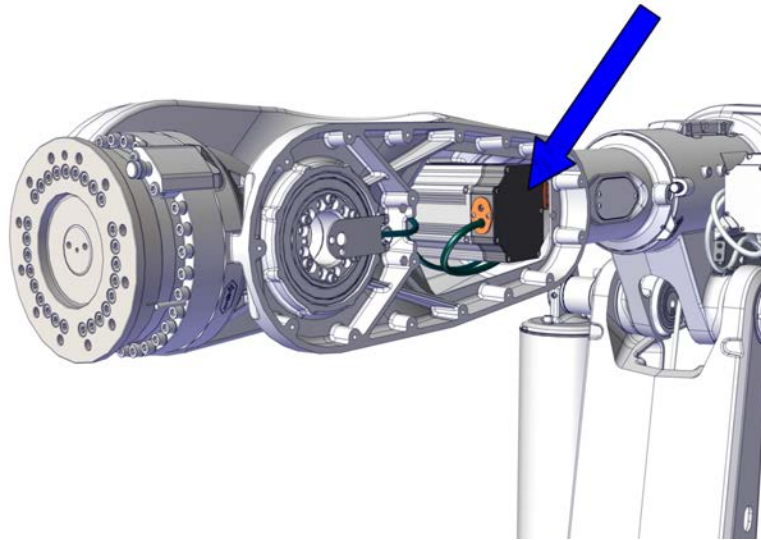


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	Spare part	Article number	Note	Level
A	O-ring	3HAB3772-107	Motor	L2
B	O-ring	3HAC054692-002	For cover and box	L2
C	Connection box	3HAC029299-005 Graphite White 3HAC054660-002 ABB Orange	FS 180	L2
D	O-ring	3HAC054692-002	For cover and box	L2
E	Cover	3HAC029303-004 Graphite White 3HAC029303-005 ABB Orange	For connection box FS 180	L2

9.5 Axis-5 motor (including pinion)

Axis-5 motor



xx1500001898

Spare part	Color	Article number	Note	Level
Rotating AC motor (including pinion)	Graphite White	3HAC058949-003		L2
Rotating AC motor (including pinion)	ABB Orange	3HAC048393-004		L2

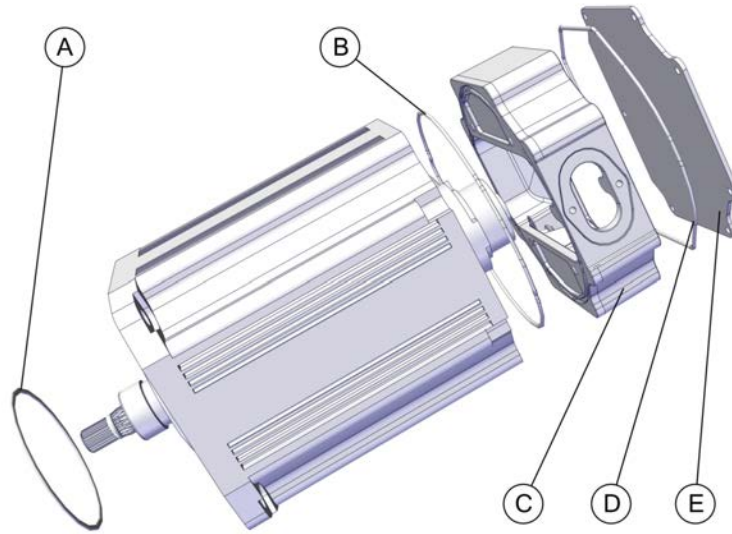
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9 Spare parts - Motors

9.5 Axis-5 motor (including pinion)

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Other parts

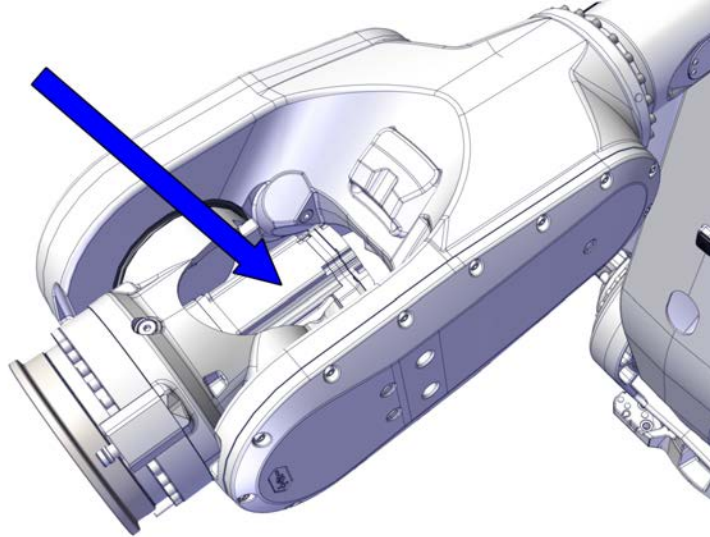


xx1500001894

	Spare part	Article number	Note	Level
A	O-ring	3HAB3772-107	Motor	L2
B	O-ring	3HAC054692-002	For cover and box	L2
C	Connection box	3HAC029299-005 Graphite White 3HAC054660-002 ABB Orange	FS 180	L2
D	O-ring	3HAC054692-002	For cover and box	L2
E	Cover	3HAC029303-004 Graphite White 3HAC029303-005 ABB Orange	For connection box FS 180	L2

9.6 Axis-6 motor (including pinion)

Axis-6 motor



xx1500001941

Spare part	Article number	Note	Level
Rotating AC motor (including pinion)	3HAC058951-003 Graphite White 3HAC049875-004 ABB Orange		L2

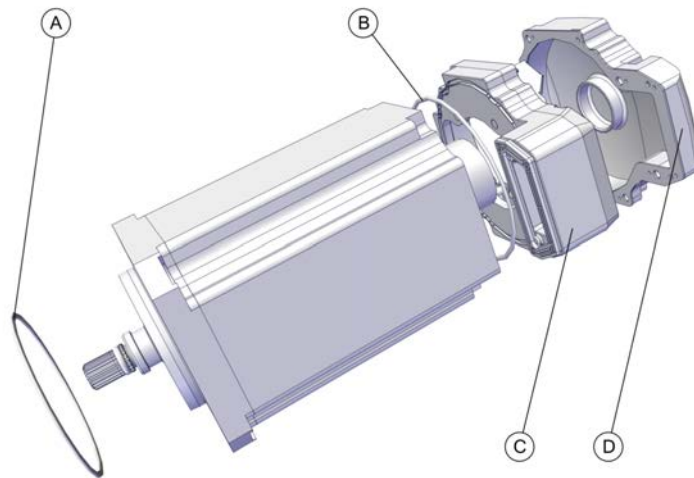
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9 Spare parts - Motors

9.6 Axis-6 motor (including pinion)

Continued

Other parts



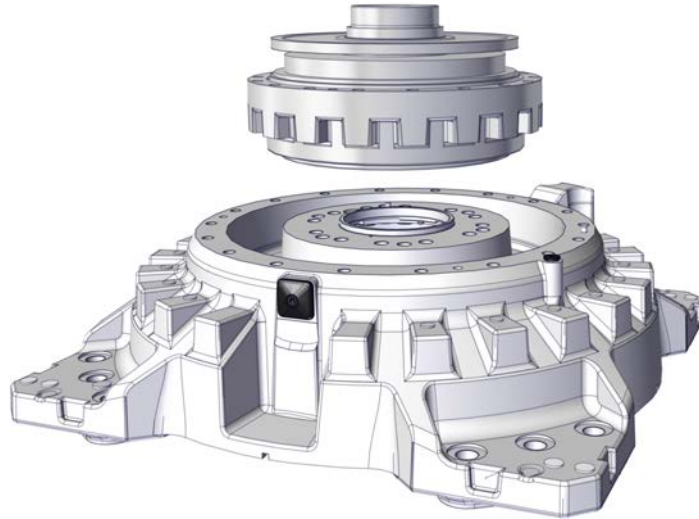
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	Spare part	Article number	Note	Level
A	O-ring	3HAB3772-107	Motor	L2
B	O-ring	3HAC3772-110	Box	L2
C	Connection box	3HAC054616-002 Graphite White 3HAC054616-003 ABB Orange		L2
D	Cover	3HAC026607-004 Graphite White 3HAC026607-003 ABB Orange	M8 (including gasket)	L2

10 Spare parts - Gearboxes

10.1 Gearbox axis-1

Gearbox



xx1500001943

Spare part	Article number	Note	Level
Reduction gear RV 700CS	3HAC048963-002		L2

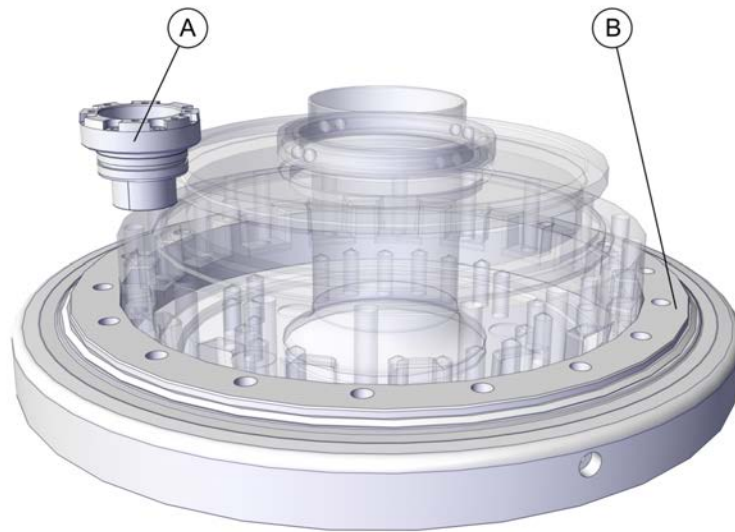
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10 Spare parts - Gearboxes

10.1 Gearbox axis-1

Continued

Other parts

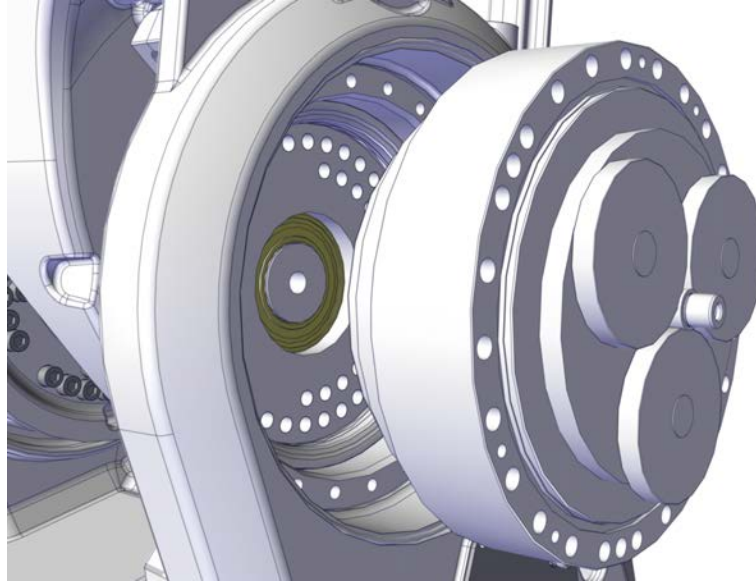


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	Spare part	Article number	Note	Level
A	Hub with pinion	3HAC049795-003		L2
B	Cross roller bearing	3HAC067294-003		L2

10.2 Gearbox axis-2

Gearbox



xx1500001945

Spare part	Article number	Note	Level
Reduction gear RV 900N incl. input gear	3HAC048392-003		L2
Sealing ring	3HAC052423-001		L2

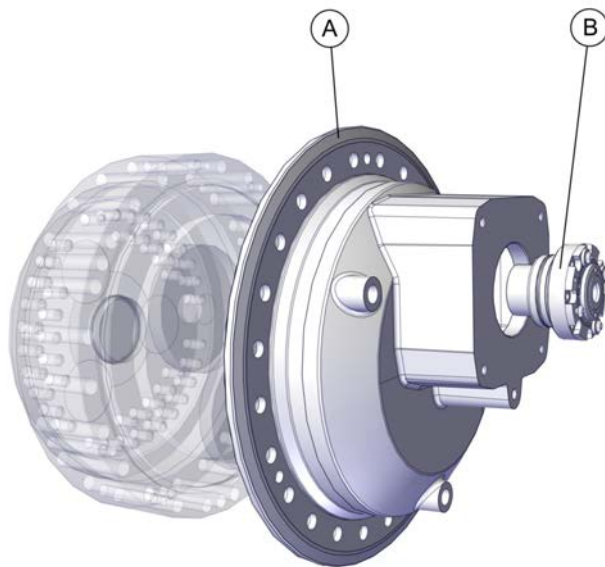
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10 Spare parts - Gearboxes

10.2 Gearbox axis-2

Continued

Other parts

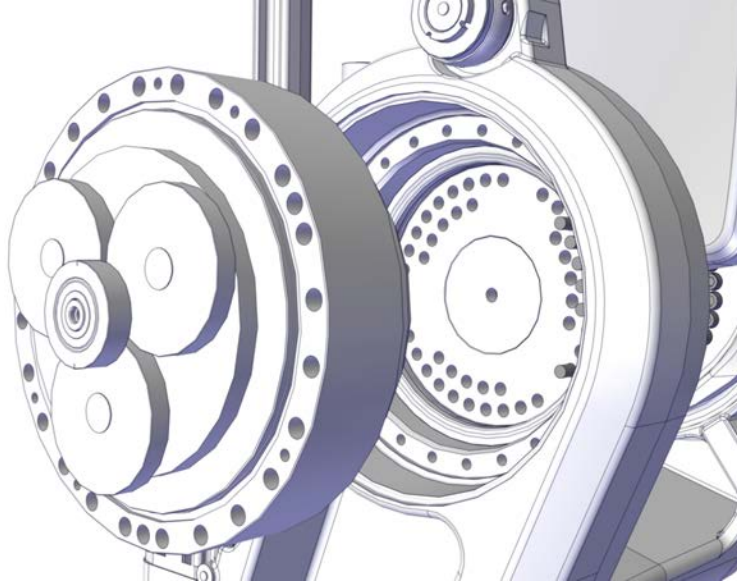


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	Spare part	Article number	Note	Level
A	Cover	3HAC048177-006 Graphite White 3HAC048177-007 ABB Orange		L2
B	Hub with pinion	3HAC049795-003		L2

10.3 Gearbox axis-3

Gearbox



Spare part	Article number	Note	Level
Reduction gear RV 900N incl input gear	3HAC048392-003		L2
Sealing ring	3HAC052423-001		L2

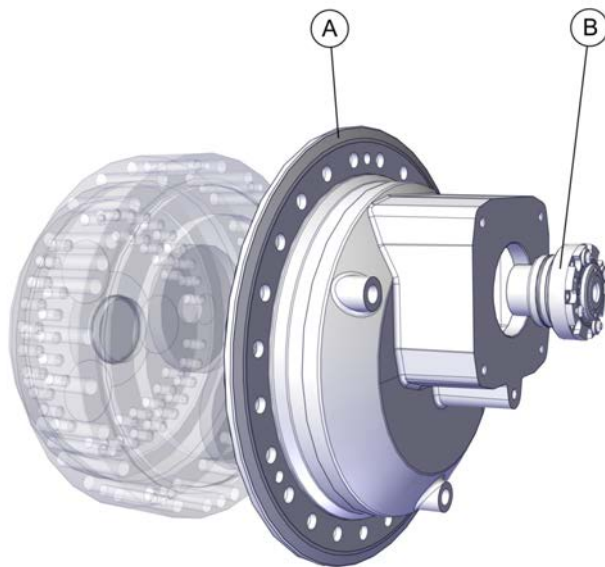
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10 Spare parts - Gearboxes

10.3 Gearbox axis-3

Continued

Other parts

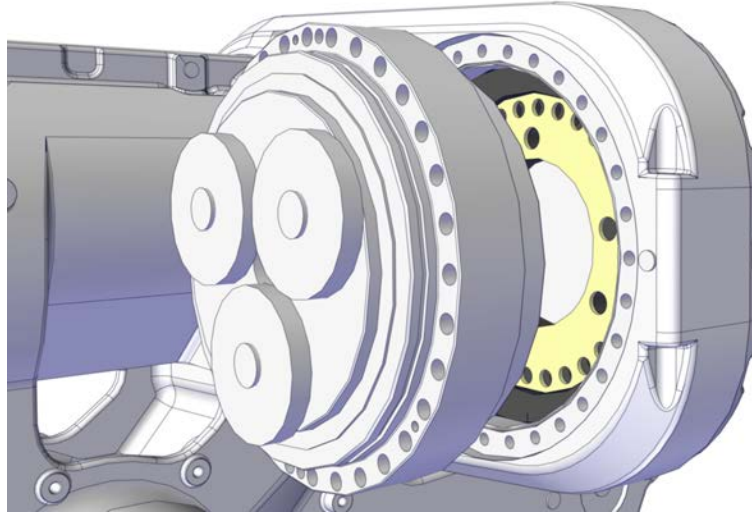


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	Spare part	Article number	Note	Level
A	Cover	3HAC048177-006		L2
B	Hub with pinion	3HAC049795-003		L2

10.4 Gearbox axis-4 primary

Gearbox



xx1500001948

Spare part	Article number	Note	Level
Reduction Gear RV-500N-236.36	3HAC043073-003 Graphite White 3HAC048293-001 ABB Orange		L3

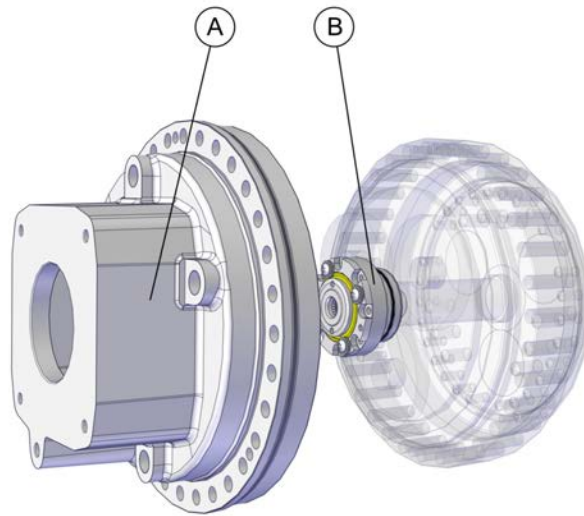
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10 Spare parts - Gearboxes

10.4 Gearbox axis-4 primary

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Other parts

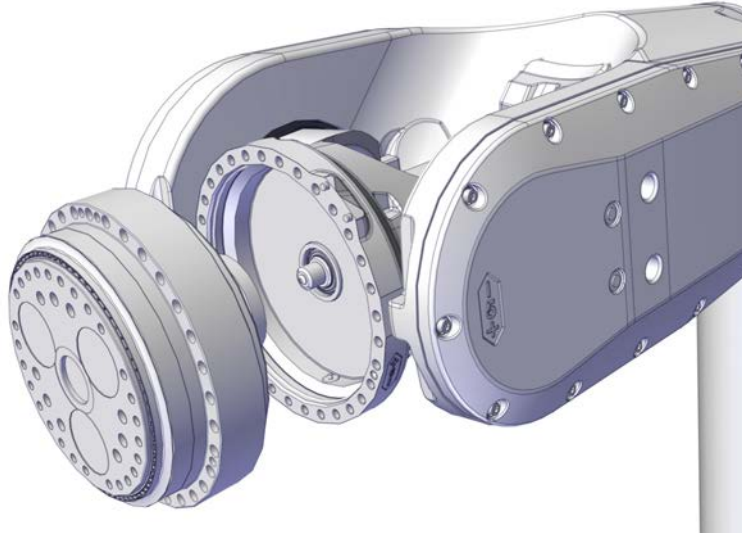


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	Spare part	Article number	Note	Level
A	Motor flange	3HAC048254-006 Graphite White 3HAC048254-007 ABB Orange		L2
B	Hub with pinion	3HAC049906-003		L2

10.5 Gearbox axis-6

Gearbox



xx1500001951

Spare part	Article number	Note	Level
Reduction Gear RV-500N-236.36	3HAC043073-003 Graphite White 3HAC048293-001 ABB Orange		L2
Sealing ring	3HAC052423-002		L2

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11 Spare parts - Calibration items

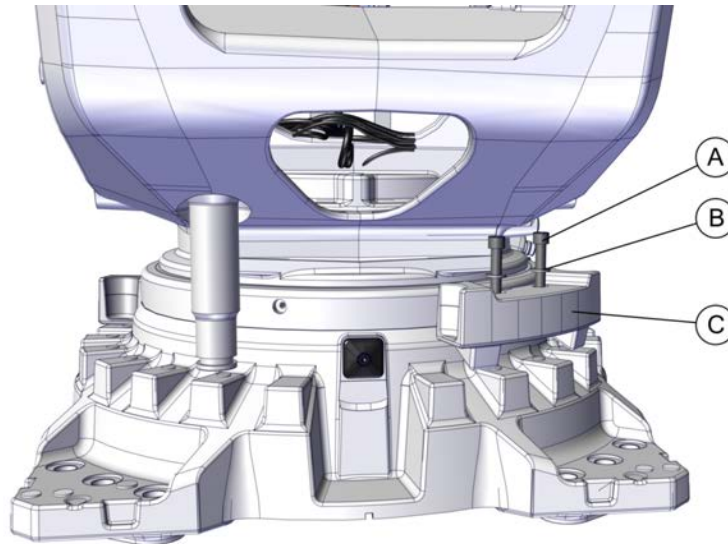
Calibration items

Spare part	Article number	Note
Protection cover and plug set	3HAC056806-001	Contains replacement calibration pin covers and protective plugs for the bushing.

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12 Spare parts - Options

Mechanical stop



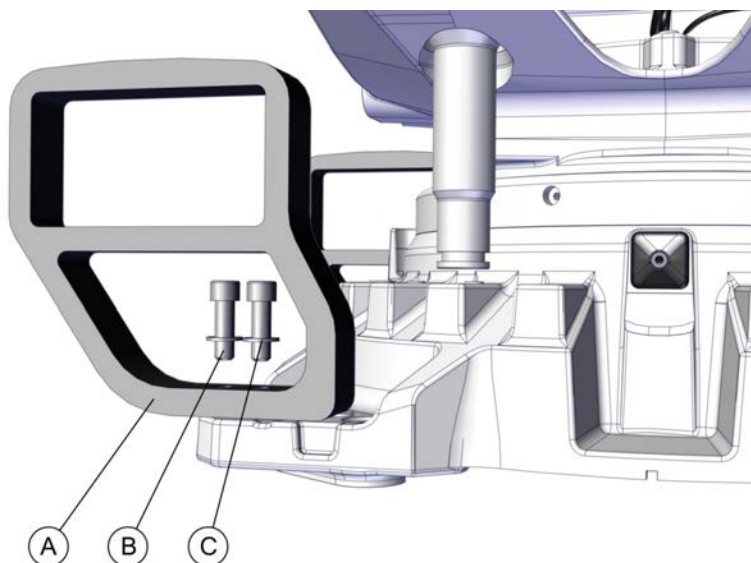
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	Spare part	Article number	Note	Level
	Additional mechanical stop	3HAC053706-003		L1
A	Hex socket head cap screw (4 pcs)			L1
B	Washer (4 pcs)			L1
C	MechanicalStop (2 pcs)			L1
	Documentation			

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Fork lift accessory



xx1500001953

	Spare part	Article number	Note
	Fork lift accessory set	3HAC053662-003	Contains fork lift pockets and all required hardware for installation on robot base. User instructions are enclosed with the tool.
A	Fork lift device (4 pcs)		
B	Hex socket head cap screw, M20x60 (8 pcs)		
C	Washer, 21x37x3 (8 pcs)		

Cooling fans

	Spare part	Article number	Note	Level
	Single fan unit set ⁱ	3HAC060789-001	Fits axis 1, axis 2 or axis 3 separately.	L2
	Double fan unit set ⁱ	3HAC060886-001	Fits for axis combinations: <ul style="list-style-type: none"> axes 1 and 2 axes 1 and 3 axes 2 and 3 	L2

ⁱ The fans are not fully classified for foundry environment and can only operate normally in protection type Standard or dry Foundry Plus environment where there is no material build-up on the fan blades.

When cooling fans are installed the regular cleaning of the robot need to be adjusted to the specification of protection type Standard.



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