

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

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Revision: E

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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.

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 Spare parts - Electrical parts

Cable harness



xx1500001878

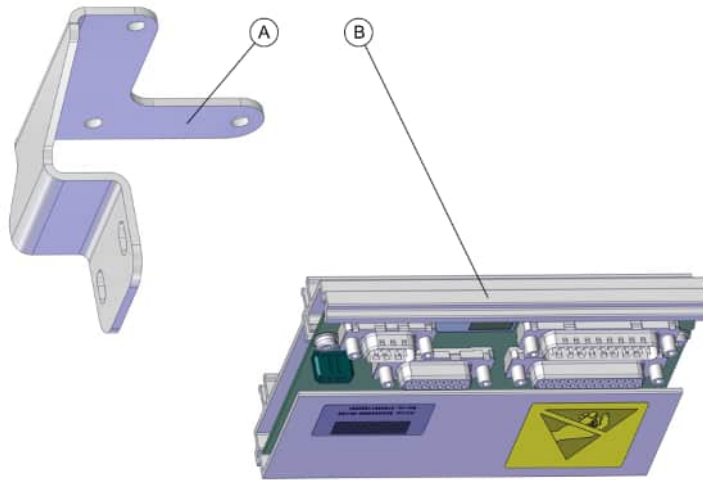
Spare part	Article number	Note
Cable harness	3HAC050792-001	
Cable harness Protection	3HAC077677-001	Cable protection hose, between axis 2 and axis 3

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1 Spare parts - Electrical parts

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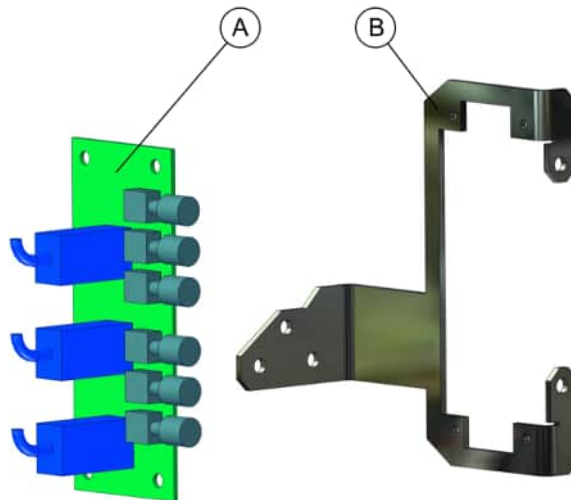
SMB unit



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

Brake release unit

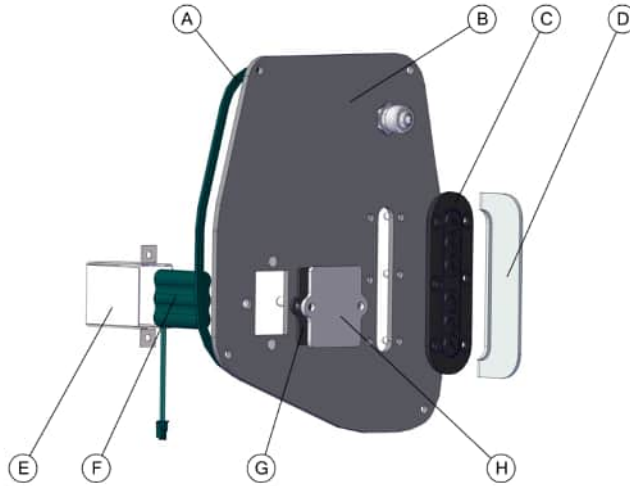


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	Spare part	Article number	Note
A	Brake release unit	3HAC065021-001	Brake release unit DSQC1052 and harness
B	Bracket	3HAC049785-001	

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Other parts



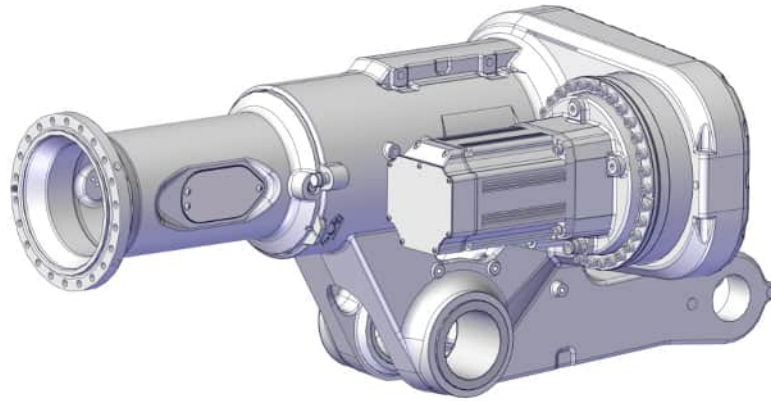
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	Spare part	Article number	Note
A	Gasket	3HAC044074-001	
B	Cover	3HAC044076-001	
C	Push button guard	3HAC6499-1	
D	Button guard plate	3HAC026331-001	
E	Battery holder	3HAC044161-001	
F	Battery pack	3HAC044075-001	RMU
G	Rubber cloth	3HAC044200-001	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

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2 Spare parts - Upper arm excluding wrist

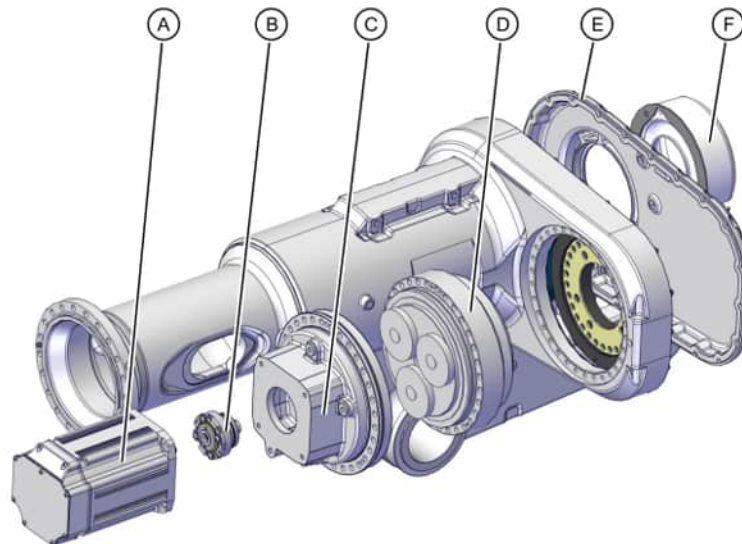
Upper arm excluding wrist



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

Other parts



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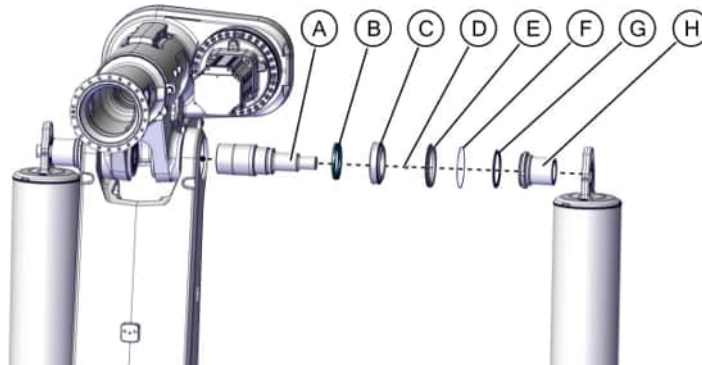
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2 Spare parts - Upper arm excluding wrist

Continued

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

Material set axis 4



xx2300000345

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

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Arm extender



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

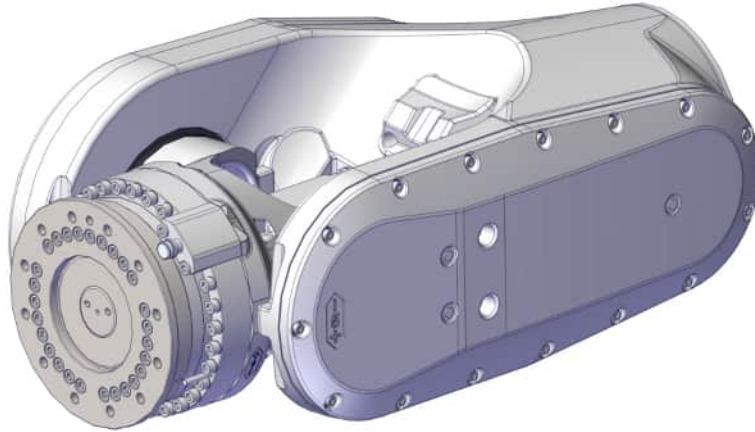
Arm extender - set

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

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3 Spare parts - Wrist

Wrist



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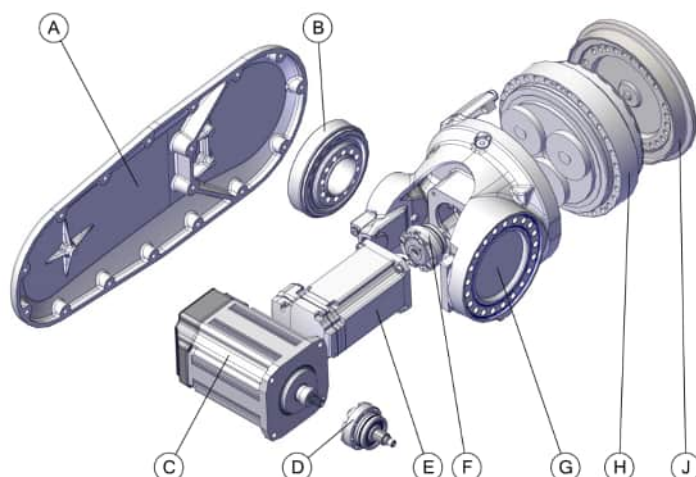
Spare part	Color	Article number	Note
Wrist	Graphite White	3HAC048653-006	
Wrist	ABB Orange	3HAC048653-004	

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3 Spare parts - Wrist

Continued

Other parts

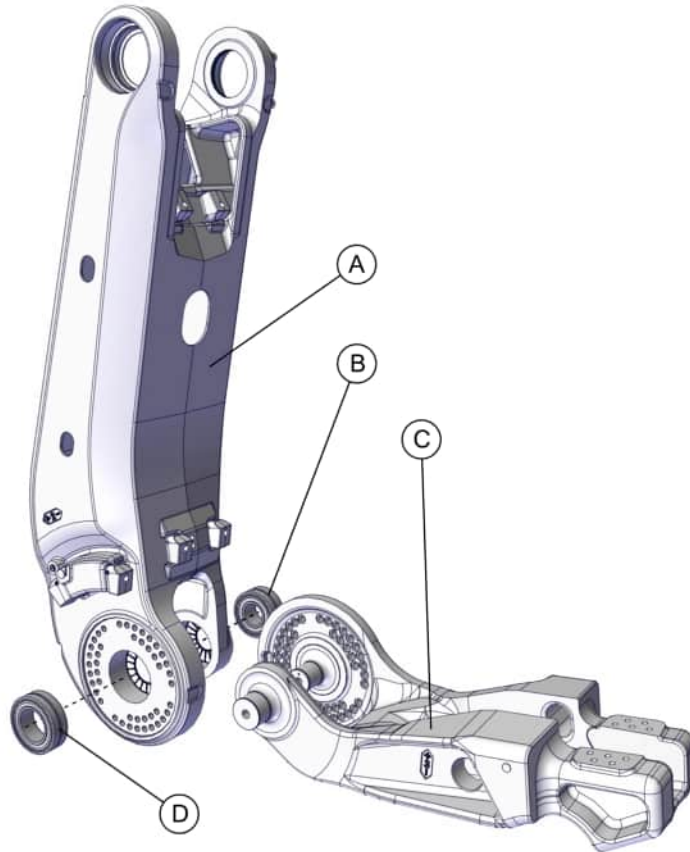


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	Spare part	Article number	Note
A	Cover	3HAC048657-004 Graphite White 3HAC048657-005 ABB Orange	
B	Support shaft (including bearing)	3HAC049735-003	
C	Rotating AC motor (including pinion)	3HAC058949-003	Article number for o-ring and connection box,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

4 Spare parts - Lower arm and parallel arm

Lower arm and parallel arm



xx1500001888

	Spare part	Article number	Note
A	Lower arm	3HAC048081-005 Graphite White 3HAC048081-006 ABB Orange	
B	Spherical roller bearing	3HAC12441-3	
C	Parallel arm	3HAC049074-003 Graphite White 3HAC049074-004 ABB Orange	
D	Spherical roller bearing	3HAC12441-4	

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5 Spare parts - Parallel bar

Parallel bar



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Spare part	Color	Article number	Note
Parallel bar	Graphite White	3HAC048077-003	
Parallel bar	ABB Orange	3HAC048077-004	

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6 Spare parts - Balancing device

Balancing device



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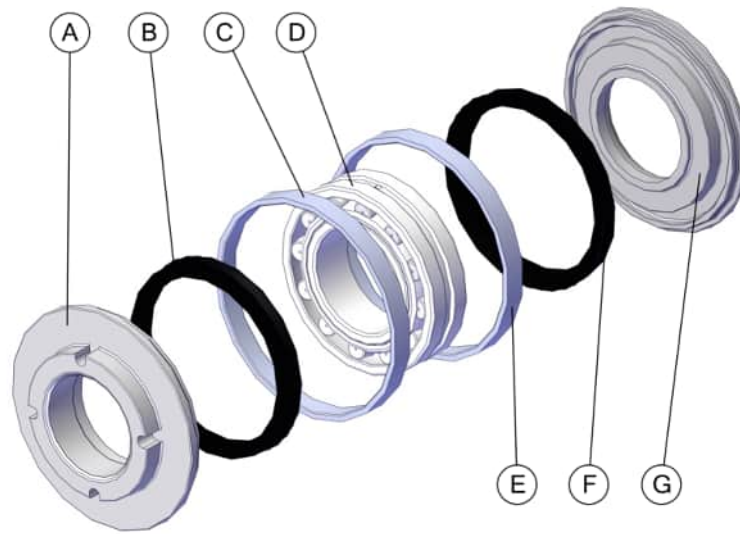
Spare part	Color	Article number	Note
Balancing device	Graphite White	3HAC048239-003	
Balancing device	ABB Orange	3HAC048239-004	
Balancing device material set	-	3HAC048239-006	

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6 Spare parts - Balancing device

Continued

Balancing device material set

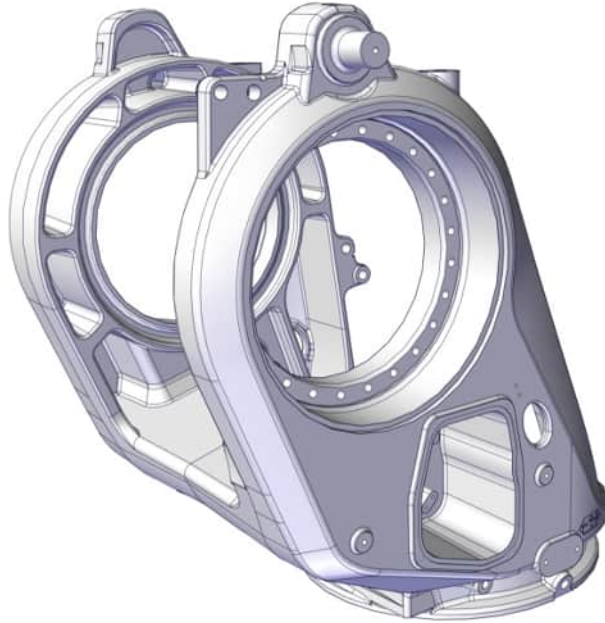


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	Spare part	Article number	Note
	Balancing device material set	3HAC048239-006	
A	V-ring		
B	Support ring		
C	Spherical roller bearing		
D	Spacer ring		
E	V-ring		
F	Support ring		

7 Spare parts - Frame and base

Frame



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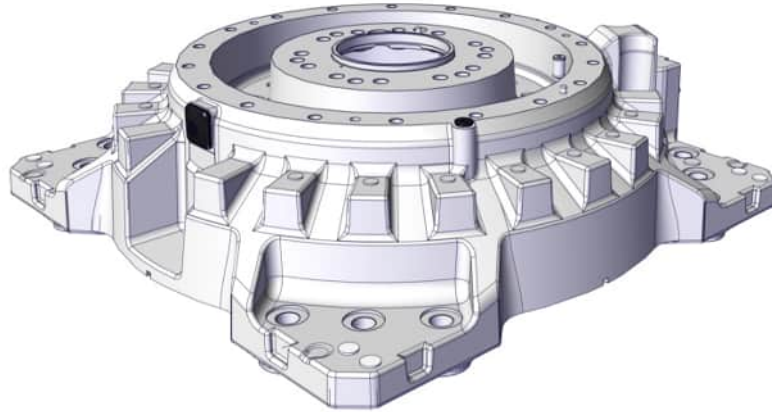
Spare part	Color	Article number	Note
Frame	Graphite White	3HAC048537-005	Make sure to order a new frame with a new cross roller bearing and guide pin.
Frame	ABB Orange	3HAC048537-006	Make sure to order a new frame with a new cross roller bearing and guide pin.

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7 Spare parts - Frame and base

Continued

Base

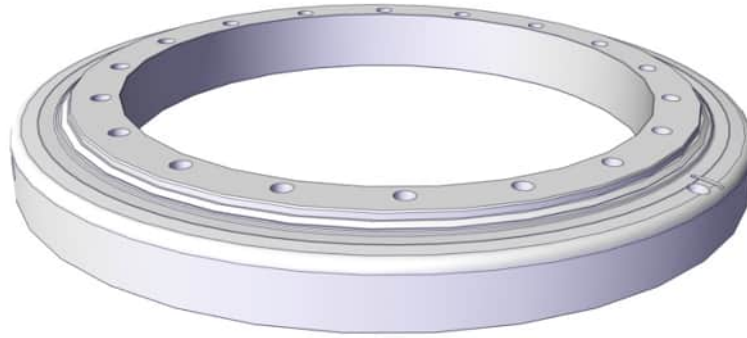


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Spare part	Color	Article number	Note
Base	Graphite White	3HAC048072-006	
Base	ABB Orange	3HAC048072-007	

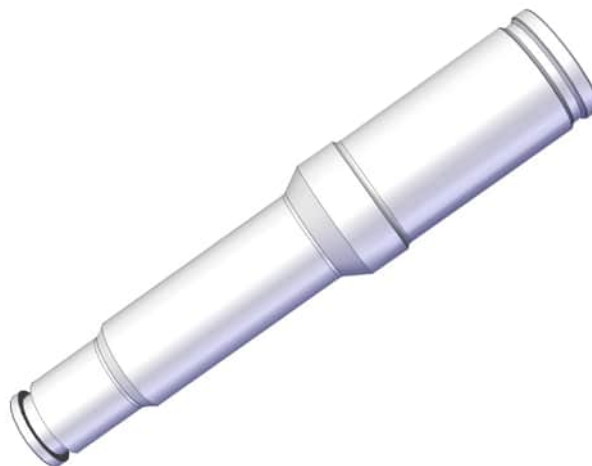
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Other parts



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



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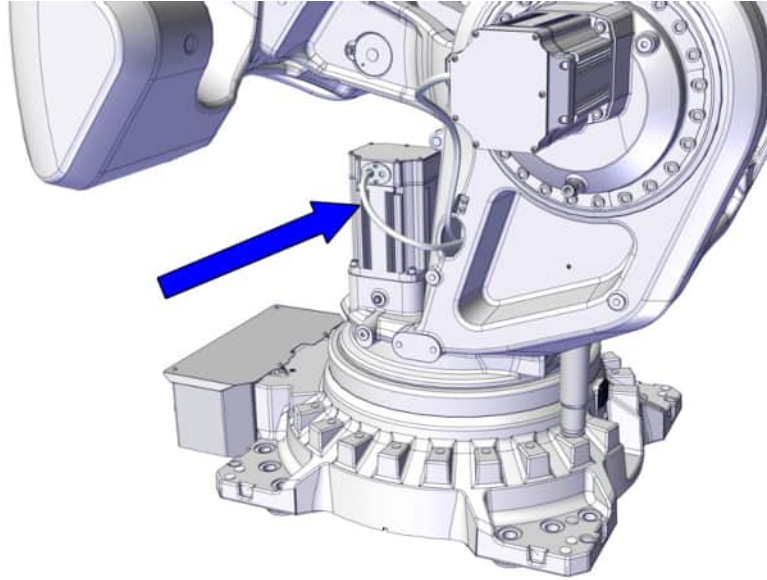
Spare part	Article number	Note
Mechanical stop pin	3HAC048180-001	

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8 Spare parts - Motors

8.1 Axis-1 motor (including pinion)

Axis-1 motor



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

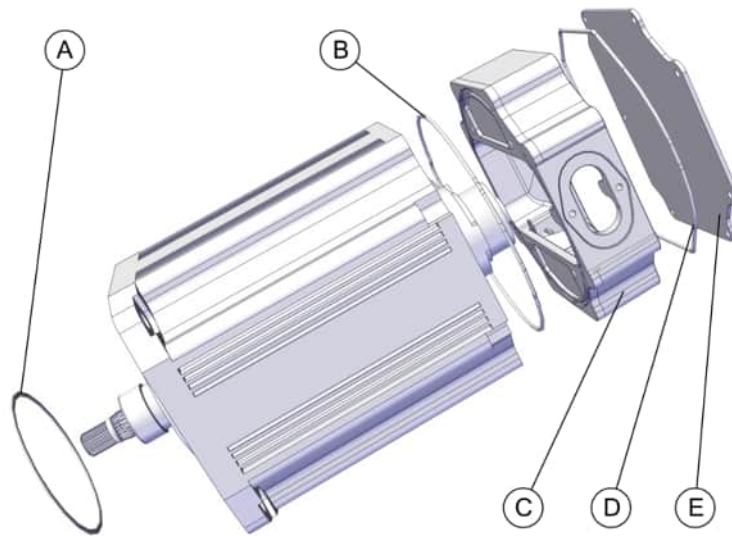
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8 Spare parts - Motors

8.1 Axis-1 motor (including pinion)

Continued

Other parts

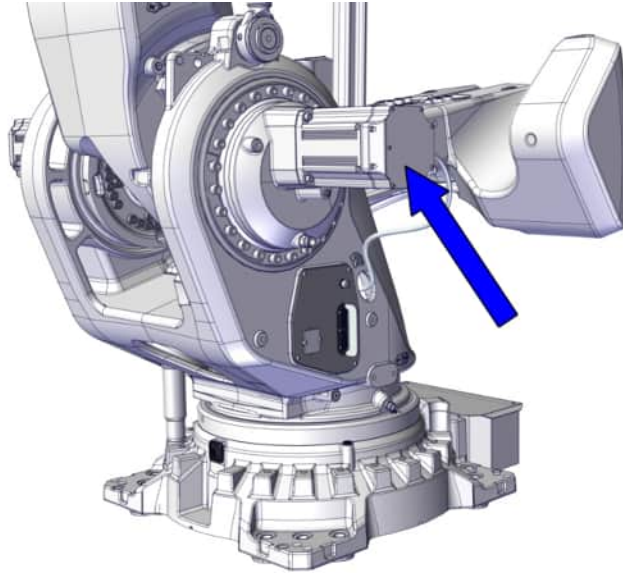


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	Spare part	Article number	Note
A	O-ring	3HAB3772-107	Motor
B	O-ring	3HAC054692-002	For cover and box
C	Connection box	3HAC029299-005 Graphite White 3HAC054660-002 ABB Orange	FS 180
D	O-ring	3HAC054692-002	For cover and box
E	Cover	3HAC029303-004 Graphite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

8.2 Axis-2 motor (including pinion)

Axis-2 motor



xx1500001895

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

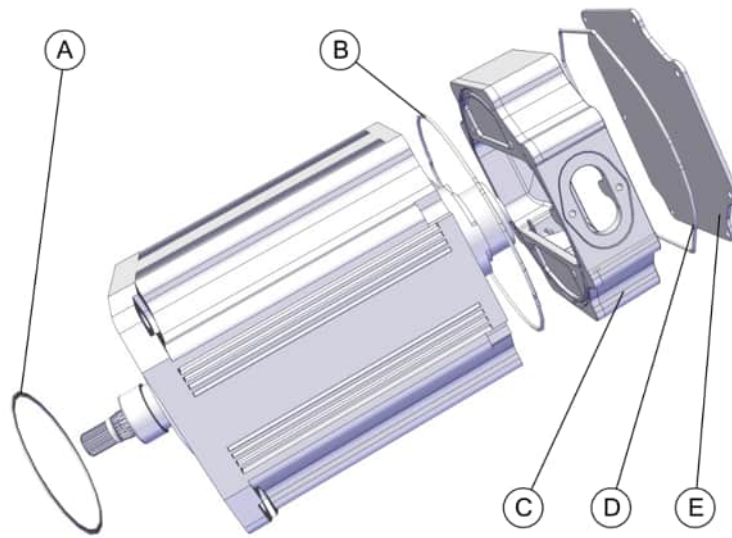
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8 Spare parts - Motors

8.2 Axis-2 motor (including pinion)

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Other parts

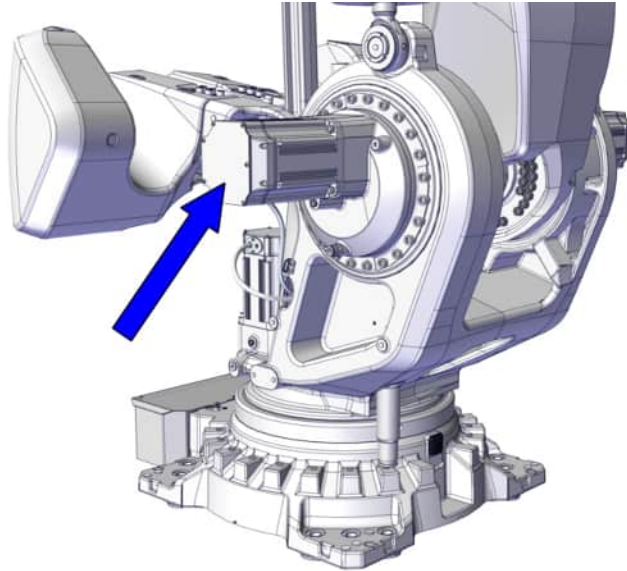


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	Spare part	Article number	Note
A	O-ring	3HAB3772-107	Motor
B	O-ring	3HAC054692-002	For cover and box
C	Connection box	3HAC029299-005 Graphite White 3HAC054660-002 ABB Orange	FS 180
D	O-ring	3HAC054692-002	For cover and box
E	Cover	3HAC029303-004 Graphite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

8.3 Axis-3 motor (including pinion)

Axis-3 motor



xx1500001896

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

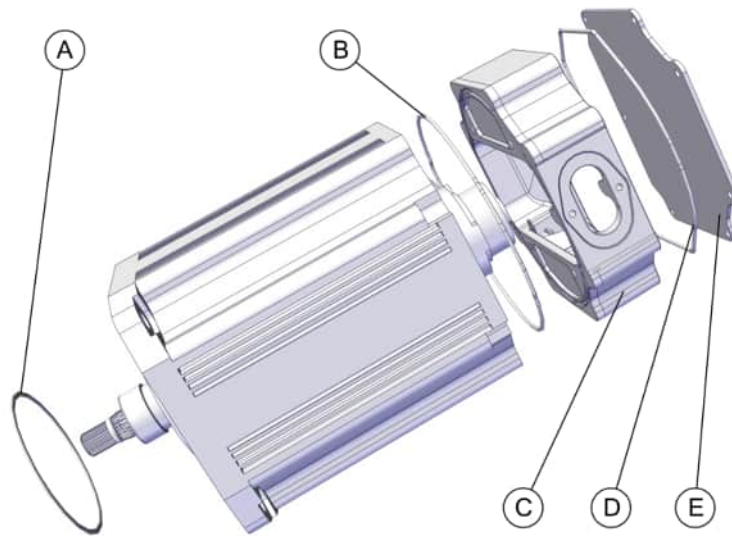
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8 Spare parts - Motors

8.3 Axis-3 motor (including pinion)

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Other parts

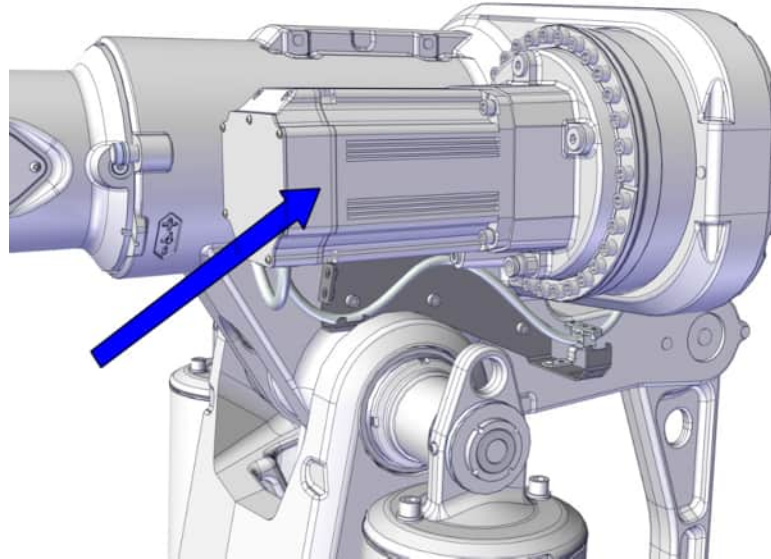


xx1500001894

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

8.4 Axis-4 motor (including pinion)

Axis-4 motor



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

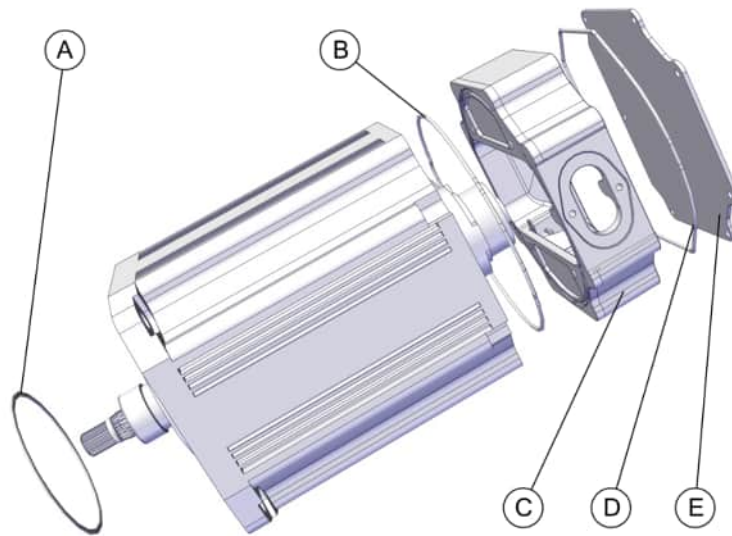
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8 Spare parts - Motors

8.4 Axis-4 motor (including pinion)

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Other parts

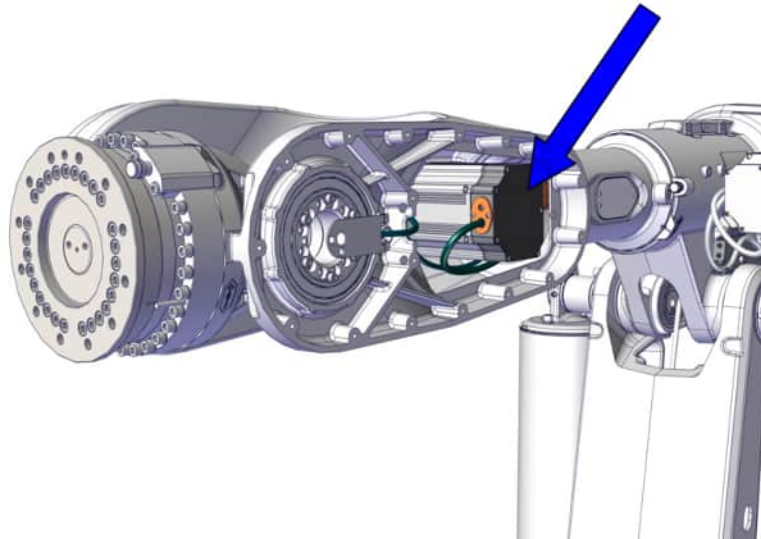


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	Spare part	Article number	Note
A	O-ring	3HAB3772-107	Motor
B	O-ring	3HAC054692-002	For cover and box
C	Connection box	3HAC029299-005 Graphite White 3HAC054660-002 ABB Orange	FS 180
D	O-ring	3HAC054692-002	For cover and box
E	Cover	3HAC029303-004 Graphite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

8.5 Axis-5 motor (including pinion)

Axis-5 motor



xx1500001898

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

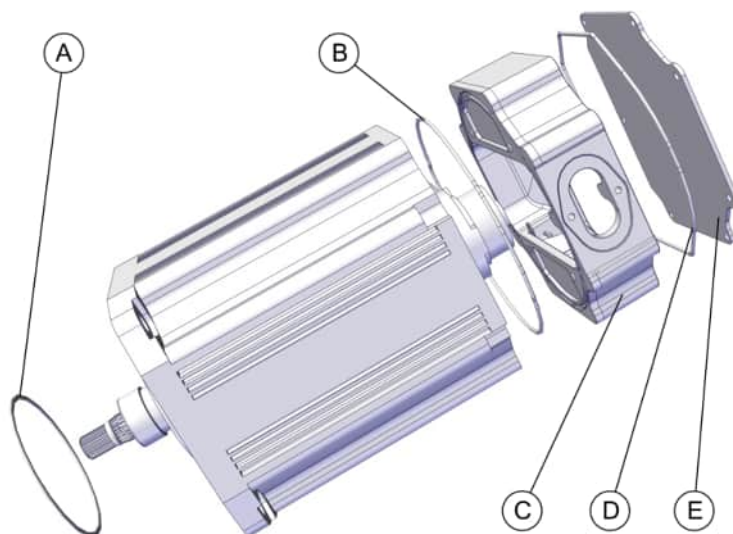
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8 Spare parts - Motors

8.5 Axis-5 motor (including pinion)

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Other parts

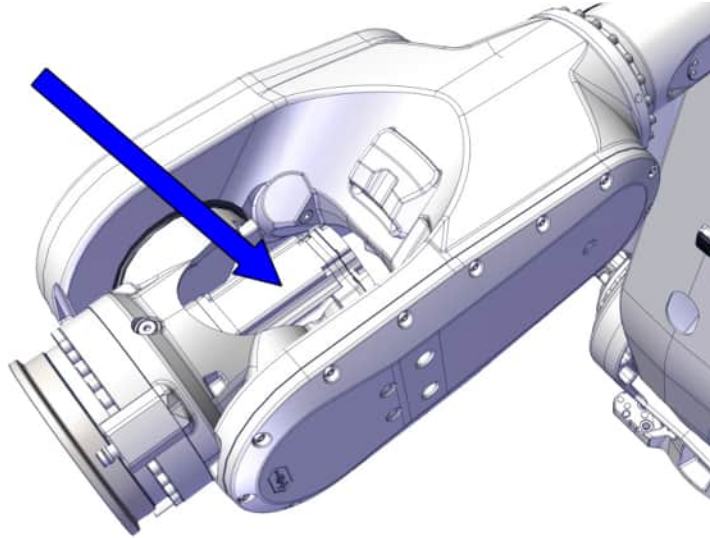


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	Spare part	Article number	Note
A	O-ring	3HAB3772-107	Motor
B	O-ring	3HAC054692-002	For cover and box
C	Connection box	3HAC029299-005 Graphite White 3HAC054660-002 ABB Orange	FS 180
D	O-ring	3HAC054692-002	For cover and box
E	Cover	3HAC029303-004 Graphite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

8.6 Axis-6 motor (including pinion)

Axis-6 motor



xx1500001941

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

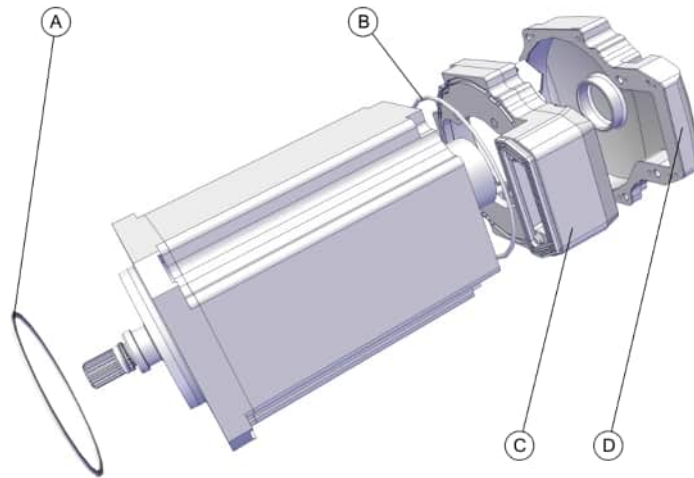
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8 Spare parts - Motors

8.6 Axis-6 motor (including pinion)

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Other parts



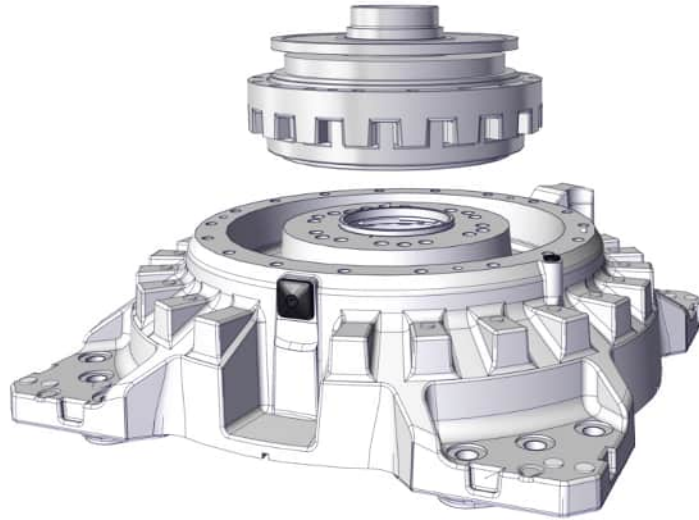
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	Spare part	Article number	Note
A	O-ring	3HAB3772-107	Motor
B	O-ring	3HAC3772-110	Box
C	Connection box	3HAC054616-002 Graphite White 3HAC054616-003 ABB Orange	
D	Cover	3HAC026607-004 Graphite White 3HAC026607-003 ABB Orange	M8 (including gasket)

9 Spare parts - Gearboxes

9.1 Gearbox axis-1

Gearbox



xx150001943

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

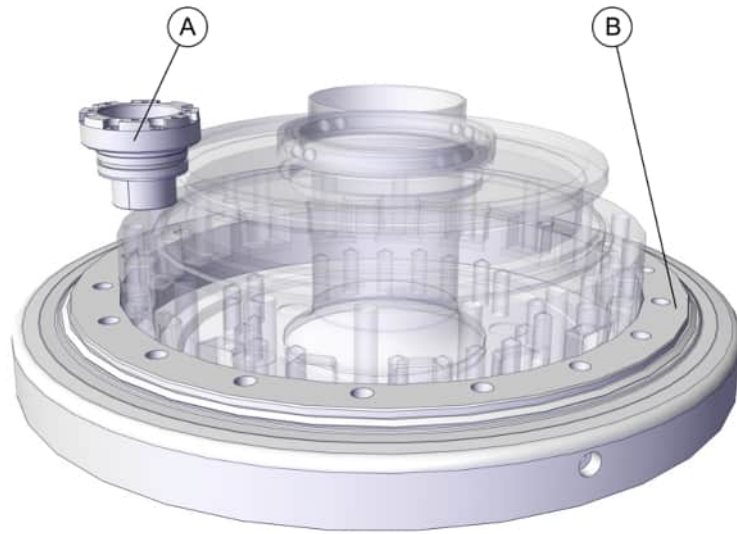
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9 Spare parts - Gearboxes

9.1 Gearbox axis-1

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Other parts

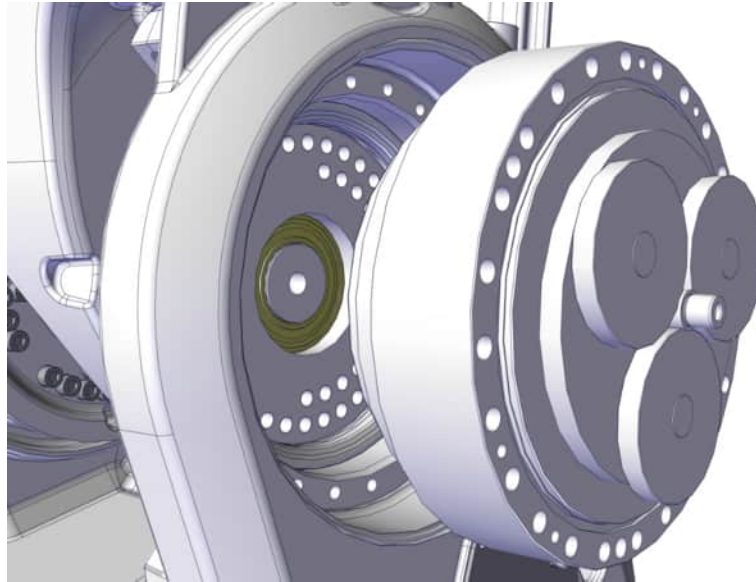


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	Spare part	Article number	Note
A	Hub with pinion	3HAC049795-003	
B	Cross roller bearing	3HAC067294-003	

9.2 Gearbox axis-2

Gearbox



xx1500001945

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

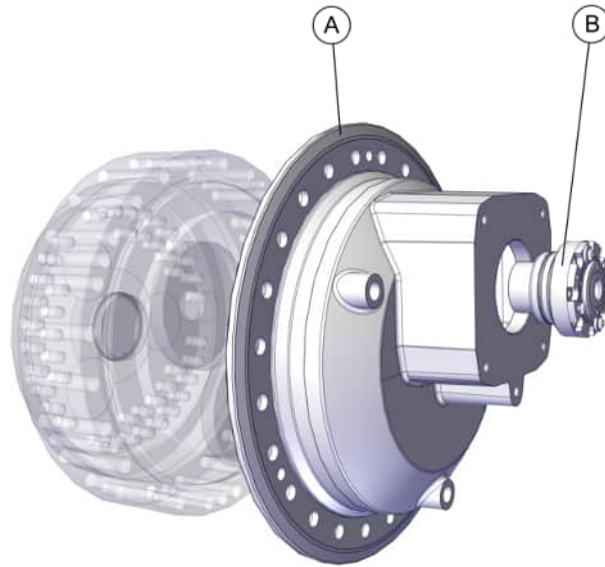
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9 Spare parts - Gearboxes

9.2 Gearbox axis-2

Continued

Other parts

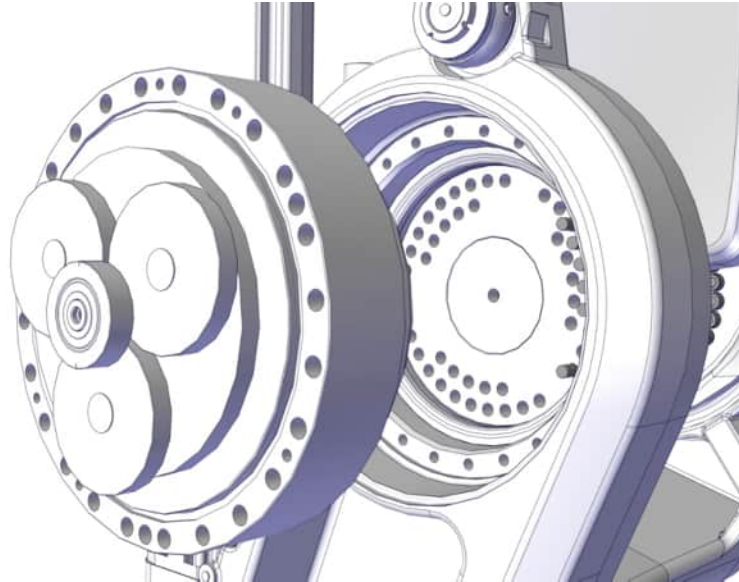


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	Spare part	Article number	Note
A	Cover	3HAC048177-006 Graphite White 3HAC048177-007 ABB Orange	
B	Hub with pinion	3HAC049795-003	

9.3 Gearbox axis-3

Gearbox



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

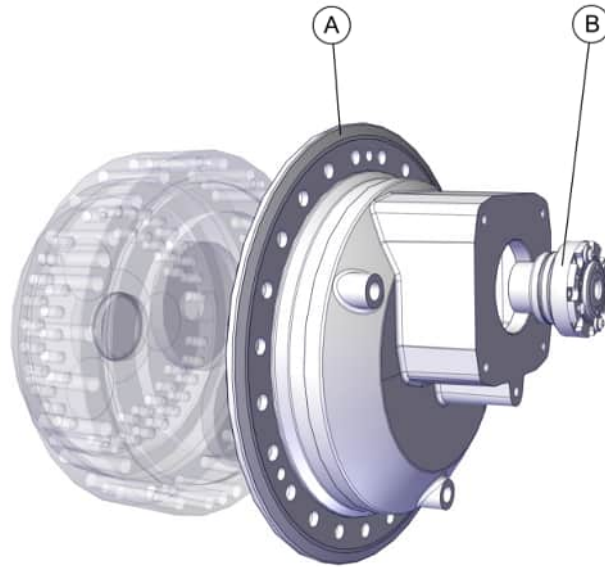
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9 Spare parts - Gearboxes

9.3 Gearbox axis-3

Continued

Other parts

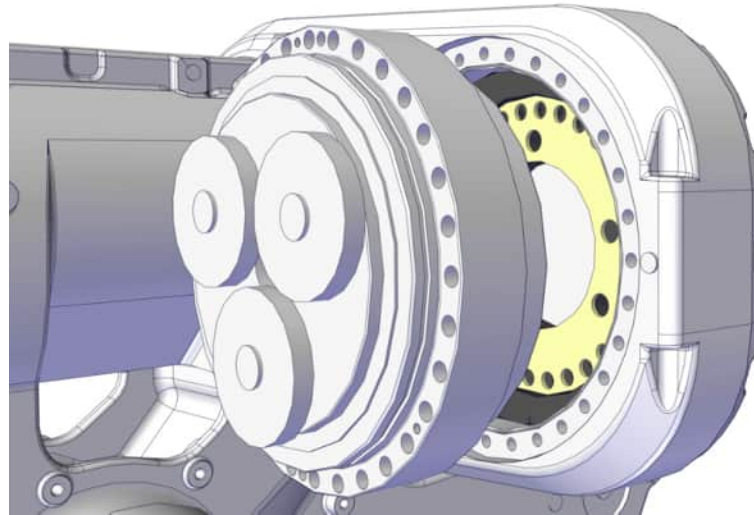


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	Spare part	Article number	Note
A	Cover	3HAC048177-006	
B	Hub with pinion	3HAC049795-003	

9.4 Gearbox axis-4 primary

Gearbox



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

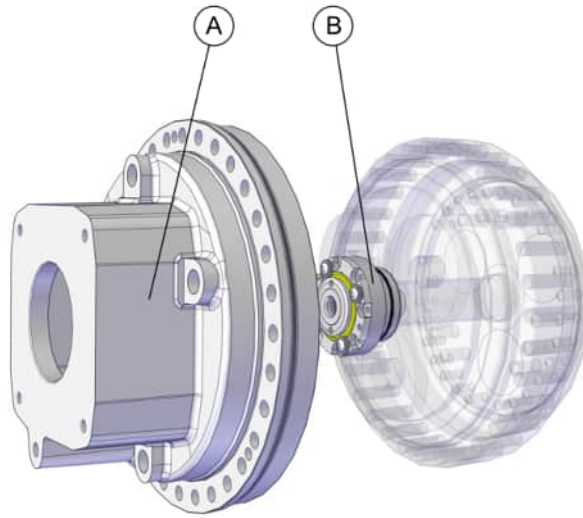
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9 Spare parts - Gearboxes

9.4 Gearbox axis-4 primary

Continued

Other parts

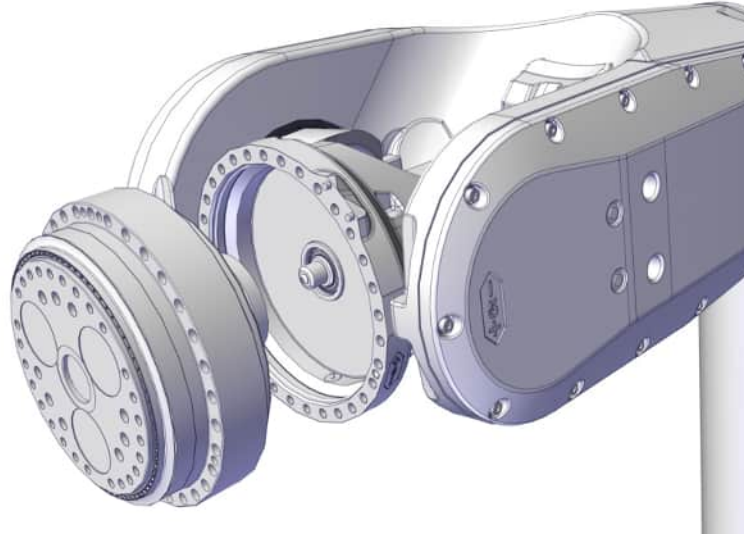


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	Spare part	Article number	Note
A	Motor flange	3HAC048254-006 Graphite White 3HAC048254-007 ABB Orange	
B	Hub with pinion	3HAC049906-003	

9.5 Gearbox axis-6

Gearbox



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

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10 Spare parts - Calibration items

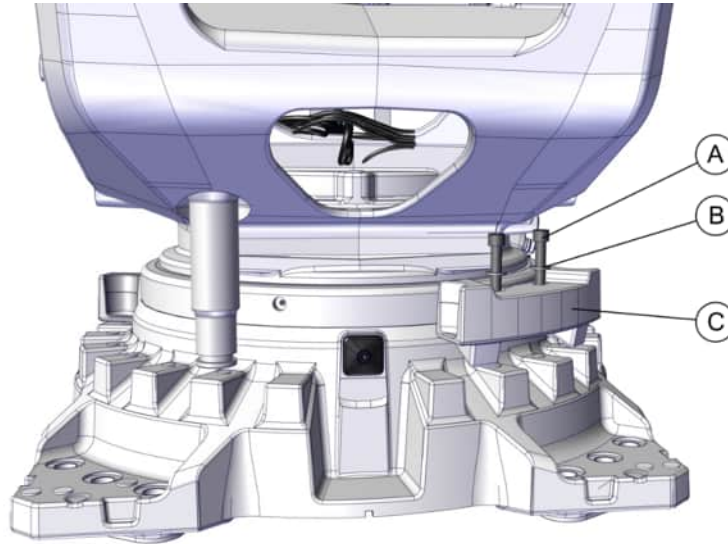
Calibration items

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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11 Spare parts - Options

Mechanical stop

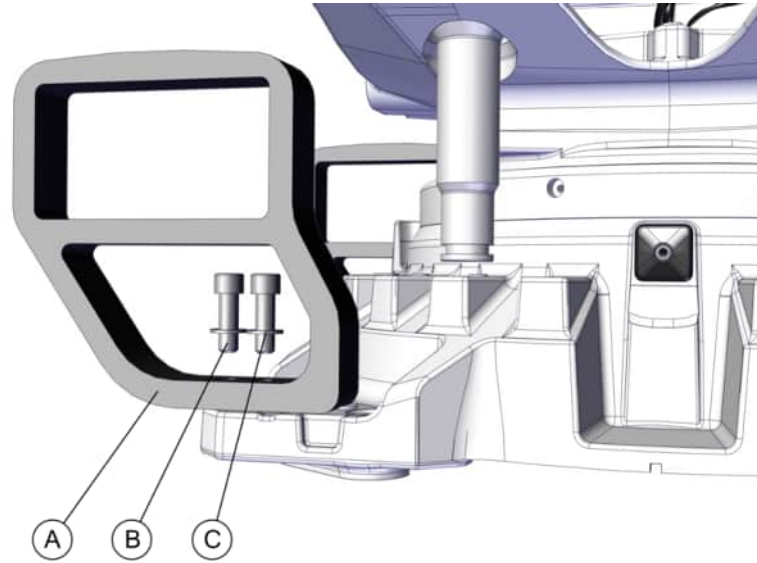


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	Spare part	Article number	Note
	Additional mechanical stop	3HAC053706-003	
A	Hex socket head cap screw (4 pcs)		
B	Washer (4 pcs)		
C	MechanicalStop (2 pcs)		
	Documentation		

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Fork lift accessory



xx1500001953

	Spare part	Article number	Note
	Fork lift accessory set	3HAC053662-003	
A	Fork lift device (4 pcs)		
B	Hex socket head cap screw, M20x60 (8 pcs)		
C	Washer, 21x37x3 (8 pcs)		
	Documentation		

Cooling fans

	Spare part	Article number	Note
	Single fan unit set ⁱ	3HAC060789-001	Fits axis 1, axis 2 or axis 3 separately.
	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

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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