

# Product manual, spare parts IRB 8700

Power and productivity  
for a better world™



Trace back information:  
Workspace R16-2 version a6  
Checked in 2016-09-09  
Skribenta version 4.6.318

**Product manual, spare parts**

**IRB 8700 - 550/4.20**

**IRB 8700 - 800/3.50**

**IRC5**

**Document ID: 3HAC052854-001**

**Revision: A**

The information in this manual is subject to change without notice and should not be construed as a commitment by ABB. ABB assumes no responsibility for any errors that may appear in this manual.

Except as may be expressly stated anywhere in this manual, nothing herein shall be construed as any kind of guarantee or warranty by ABB for losses, damages to persons or property, fitness for a specific purpose or the like.

In no event shall ABB be liable for incidental or consequential damages arising from use of this manual and products described herein.

This manual and parts thereof must not be reproduced or copied without ABB's written permission.

Additional copies of this manual may be obtained from ABB.

The original language for this publication is English. Any other languages that are supplied have been translated from English.

© Copyright 2015 - 2016 ABB. All rights reserved.

ABB AB  
Robotics Products  
Se-721 68 Västerås  
Sweden

# Table of contents

Overview of this manual .....	7
Product documentation, IRC5 .....	8
<b>1 Spare parts - Electrical parts</b>	<b>11</b>
<b>2 Spare parts - Upper arm excluding wrist</b>	<b>15</b>
<b>3 Spare parts - Wrist</b>	<b>19</b>
<b>4 Spare parts - Lower arm and parallel arm</b>	<b>21</b>
<b>5 Spare parts - Parallel bar</b>	<b>23</b>
<b>6 Spare parts - Balancing device</b>	<b>25</b>
<b>7 Spare parts - Frame and base</b>	<b>27</b>
<b>8 Spare parts - Motors</b>	<b>31</b>
8.1 Axis-1 motor (including pinion) .....	31
8.2 Axis-2 motor (including pinion) .....	33
8.3 Axis-3 motor (including pinion) .....	35
8.4 Axis-4 motor (including pinion) .....	37
8.5 Axis-5 motor (including pinion) .....	39
8.6 Axis-6 motor (including pinion) .....	41
<b>9 Spare parts - Gearboxes</b>	<b>43</b>
9.1 Gearbox axis-1 .....	43
9.2 Gearbox axis-2 .....	45
9.3 Gearbox axis-3 .....	47
9.4 Gearbox axis-4 primary .....	48
9.5 Gearbox axis-6 .....	49
<b>10 Spare parts - Calibration items</b>	<b>51</b>
<b>11 Spare parts - Options</b>	<b>53</b>

**This page is intentionally left blank**

# 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"><li>• Updated spare parts due to sealing upgrade in the motors:<ul style="list-style-type: none"><li>- Motors</li><li>- Upper arm excluding wrist</li><li>- Wrist</li><li>- Axis 6 complete</li></ul></li></ul>

# 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*

**This page is intentionally left blank**

# 1 Spare parts - Electrical parts

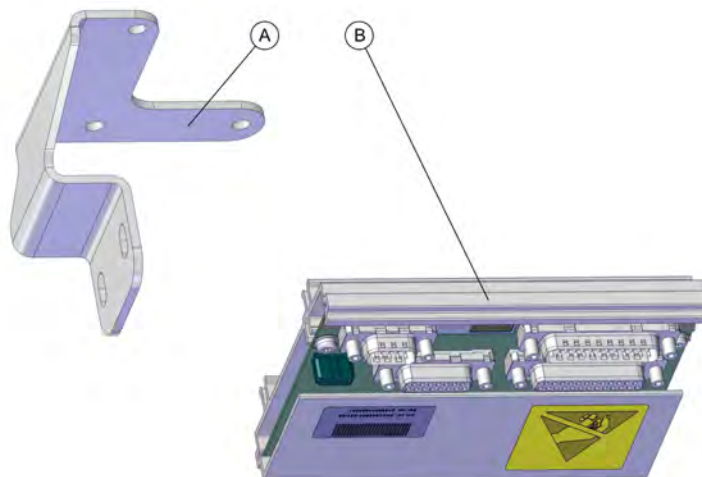
## Cable harness



xx1500001878

Spare part	Article number	Note
Cable harness	3HAC050792-001	

## SMB unit



xx1500001877

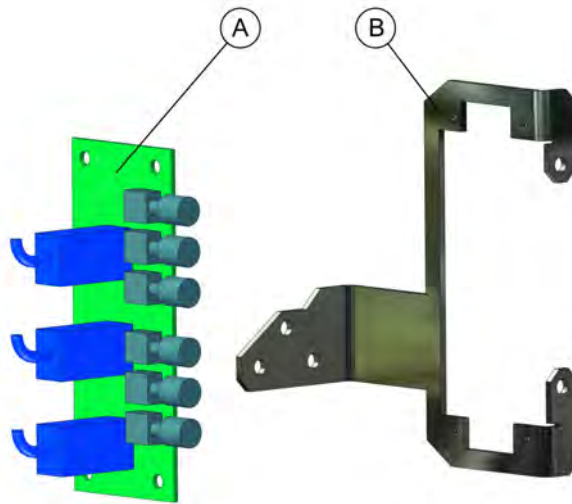
	Spare part	Article number	Note
A	SMB	3HAC043904-001	RMU102
B	Bracket	3HAC044073-001	RMU102

*Continues on next page*

## 1 Spare parts - Electrical parts

*Continued*

### Brake release unit



xx1500001879

	Spare part	Article number	Note
A	Brake release unit	3HAC046642-001	BRK001
B	Bracket	3HAC049785-001	

*Continues on next page*

## Other parts



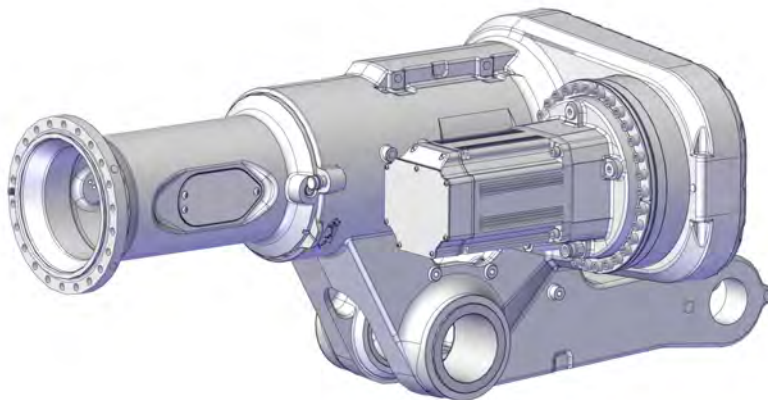
xx1500001876

	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	

**This page is intentionally left blank**

## 2 Spare parts - Upper arm excluding wrist

### Upper arm excluding wrist



xx1500001883

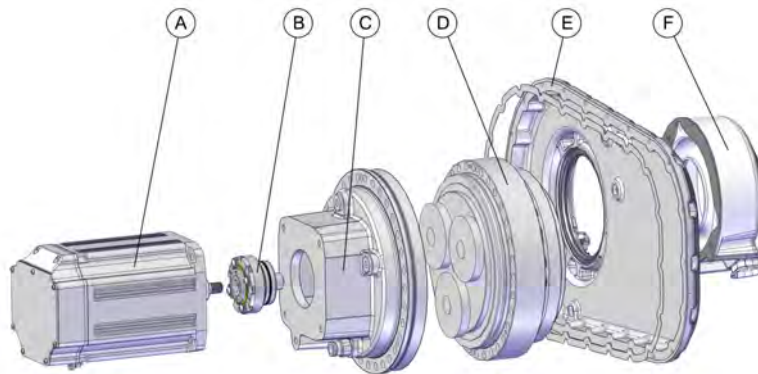
Spare part	Article number	Note
Upper arm excluding wrist	3HAC048079-006	

*Continues on next page*

## 2 Spare parts - Upper arm excluding wrist

*Continued*

### Other parts



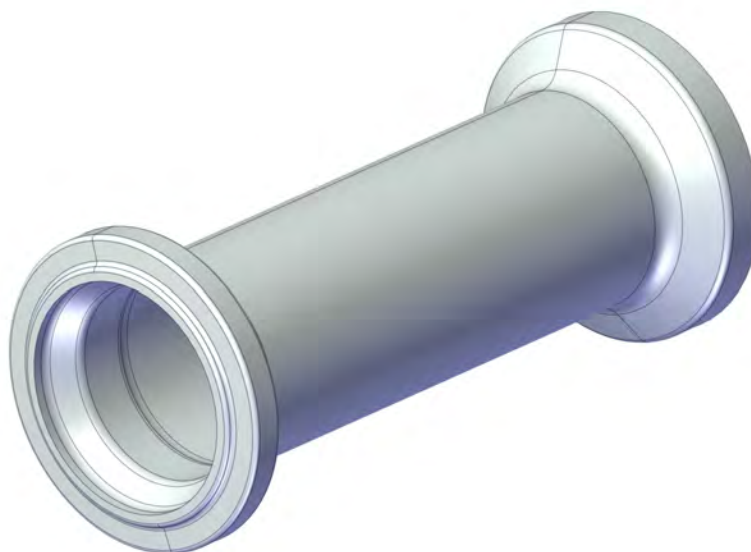
xx1500001884

	Spare part	Article number	Note
A	Rotating AC motor (including pinion)	3HAC058950-003	
B	Hub with pinion	3HAC049906-003	
C	Motor flange	3HAC048254-006	
D	Reduction Gear RV-500N-236.36	3HAC043073-003	
E	Cover with sealing	3HAC051221-002	Sealing no. 3HAA1001-628
F	Cabling cover	3HAC3261-1	

*Continues on next page*



### Arm extender



xx1500001887

Spare part	Article number	Note
Arm extender	3HAC048171-004	

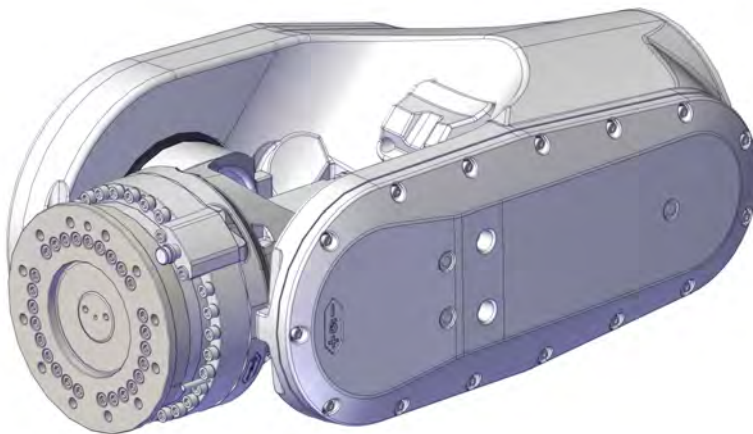
### Arm extender - set

Spare part	Article number	Note
Arm extender set	3HAC048171-007	Including screws and washers

**This page is intentionally left blank**

## 3 Spare parts - Wrist

### Wrist



xx1500001885

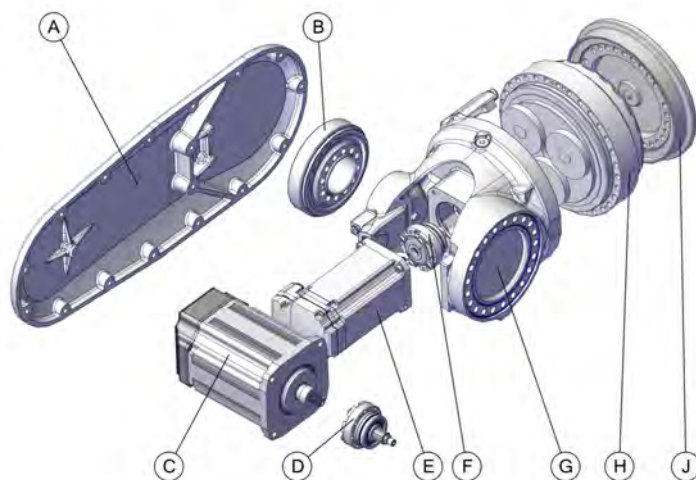
Spare part	Article number	Note
Wrist	3HAC048653-006	

*Continues on next page*

### 3 Spare parts - Wrist

Continued

#### Other parts

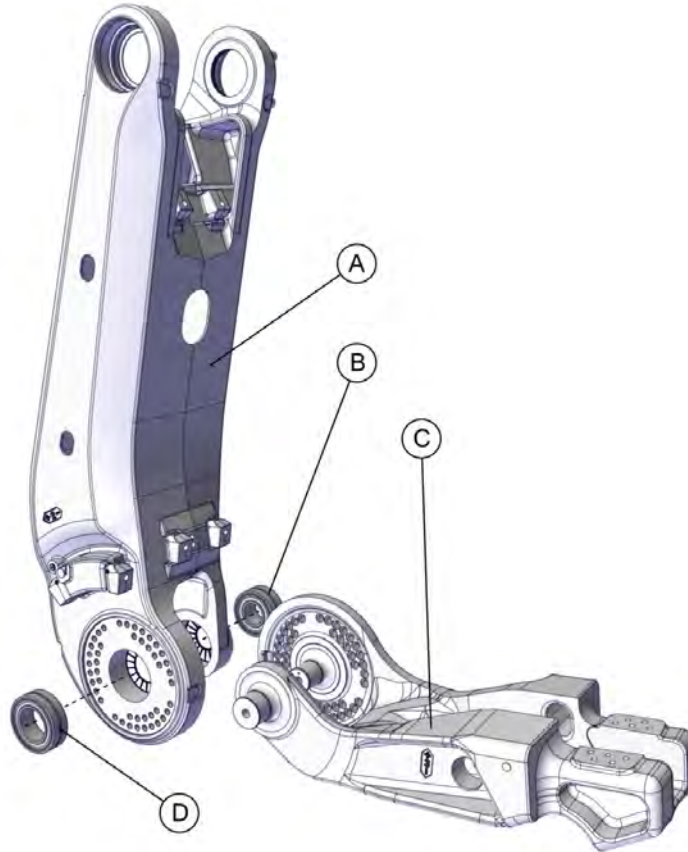


xx1500001886

	Spare part	Article number	Note
A	Cover	3HAC048657-004	
B	Hub with pinion	3HAC051022-003	
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	Article number for o-rings and connection box, see Motors.
F	Hub with pinion	3HAC051022-003	
G	Axis 6	3HAC048651-003	
H	Reduction Gear RV-500N-236.36	3HAC043073-003	
I	Turning disc (standard)	3HAC048445-001	
J	Turning disc (process)	3HAC051003-001	

## 4 Spare parts - Lower arm and parallel arm

### Lower arm and parallel arm



xx1500001888

	Spare part	Article number	Note
A	Lower arm	3HAC048081-005	
B	Spherical roller bearing	3HAC12441-3	
C	Parallel arm	3HAC049074-003	
D	Spherical roller bearing	3HAC12441-4	

**This page is intentionally left blank**

## 5 Spare parts - Parallel bar

### Parallel bar



xx1500001892

Spare part	Article number	Note
Parallel bar	3HAC048077-003	

**This page is intentionally left blank**



## 6 Spare parts - Balancing device

### Balancing device



xx1500001890

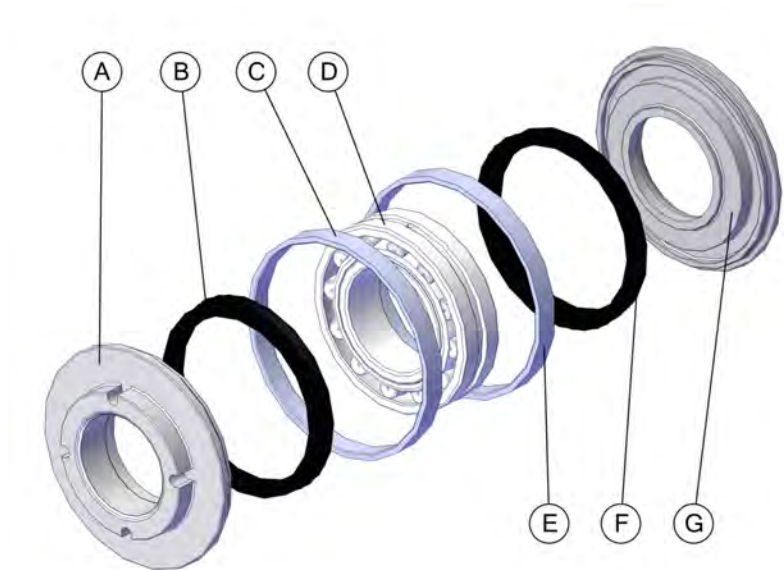
Spare part	Article number	Note
Balancing device	3HAC048239-003	

*Continues on next page*

## 6 Spare parts - Balancing device

*Continued*

### Balancing device material set

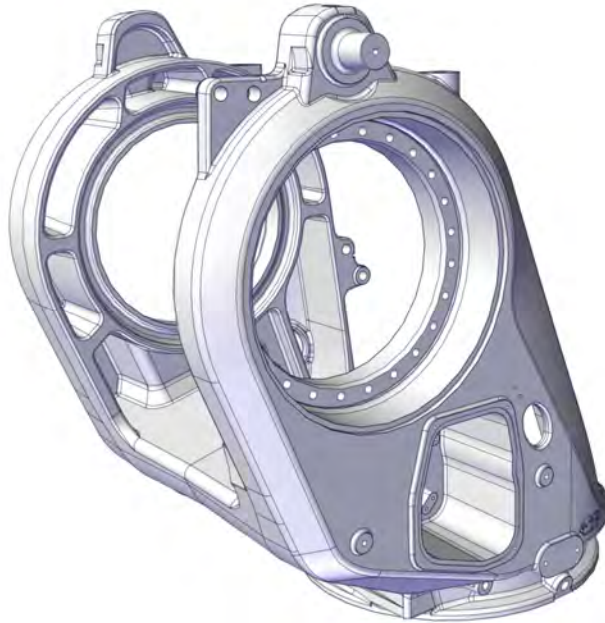


xx1500001891

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

## 7 Spare parts - Frame and base

### Frame



xx1500001881

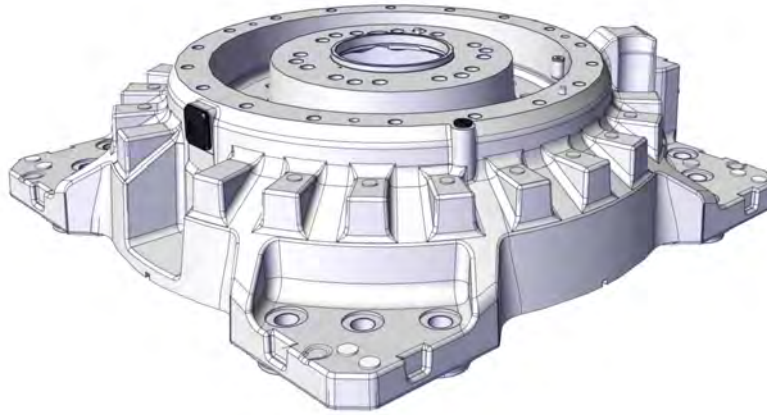
Spare part	Article number	Note
Frame	3HAC048537-005	

*Continues on next page*

## 7 Spare parts - Frame and base

*Continued*

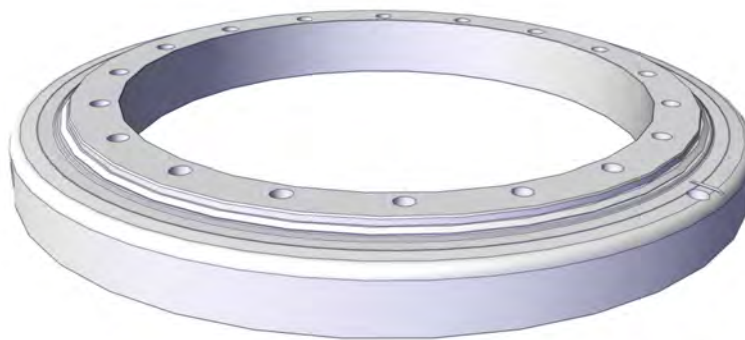
### Base



xx1500001880

Spare part	Article number	Note
Base	3HAC048072-006	

### Other parts



xx1500001882

Spare part	Article number	Note
Cross roller bearing	3HAC048069-003	

*Continues on next page*



xx1500001954

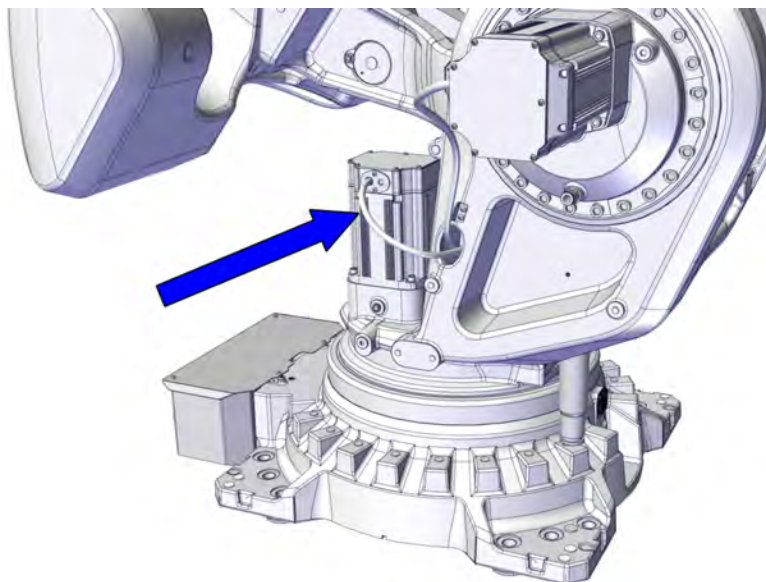
Spare part	Article number	Note
Mechanical stop pin	3HAC048180-001	

**This page is intentionally left blank**

## 8 Spare parts - Motors

### 8.1 Axis-1 motor (including pinion)

---

**Axis-1 motor**

xx1500001893

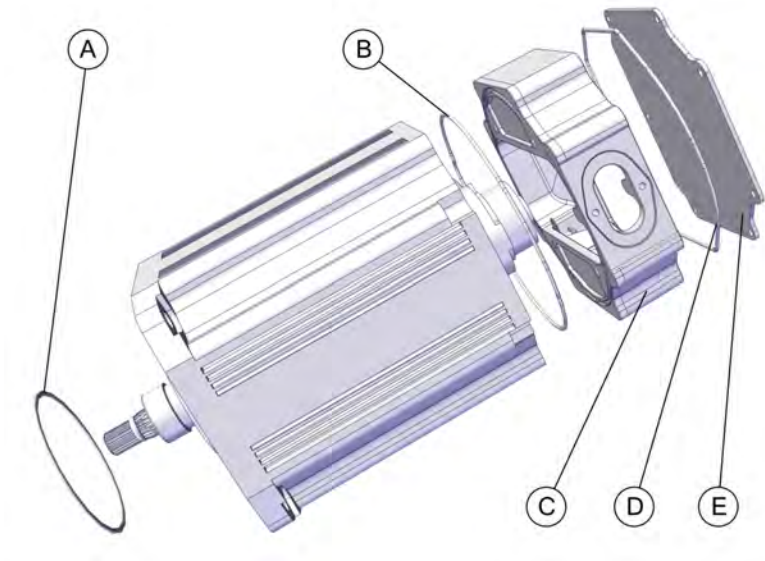
Spare part	Article number	Note
Rotating AC motor (including pinion)	3HAC058949-003	

*Continues on next page*

# 8 Spare parts - Motors

## 8.1 Axis-1 motor (including pinion) Continued

### Other parts



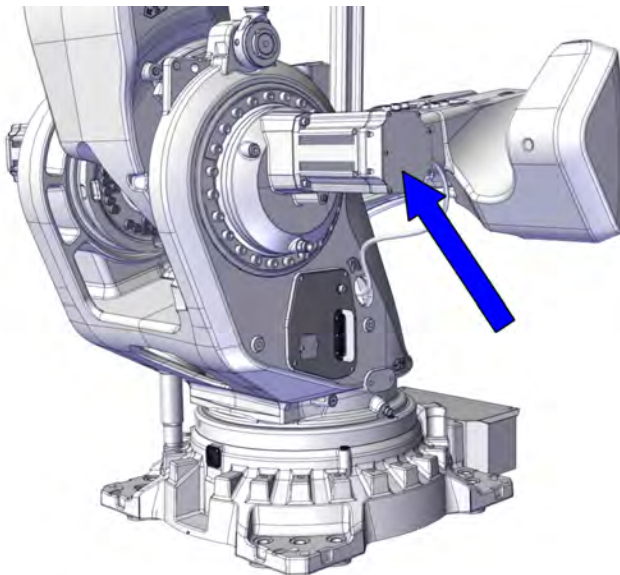
xx1500001894

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



#### 8.2 Axis-2 motor (including pinion)

##### Axis-2 motor



xx1500001895

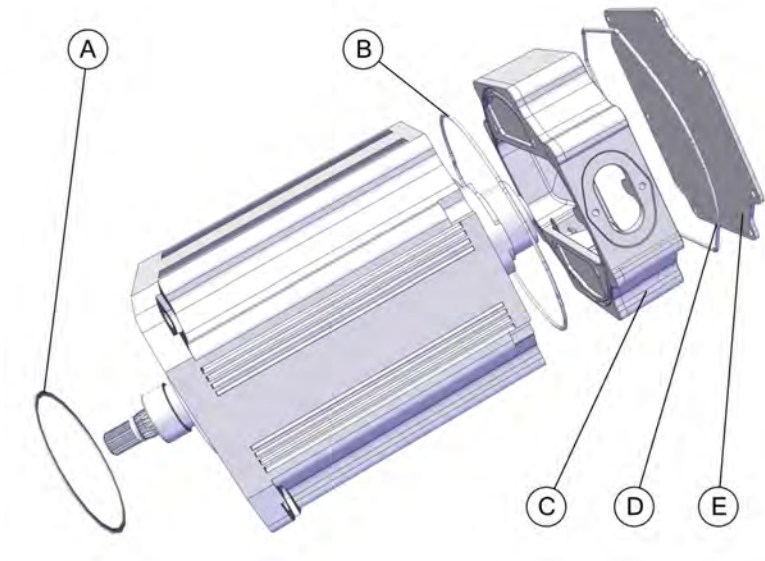
Spare part	Article number	Note
Rotating AC motor (including pinion)	3HAC058949-003	

*Continues on next page*

# 8 Spare parts - Motors

## 8.2 Axis-2 motor (including pinion) Continued

### Other parts

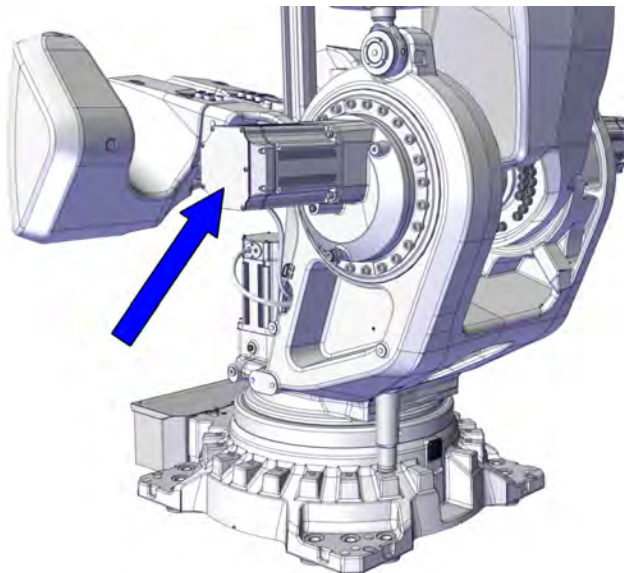


xx1500001894

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

### 8.3 Axis-3 motor (including pinion)

#### Axis-3 motor



xx1500001896

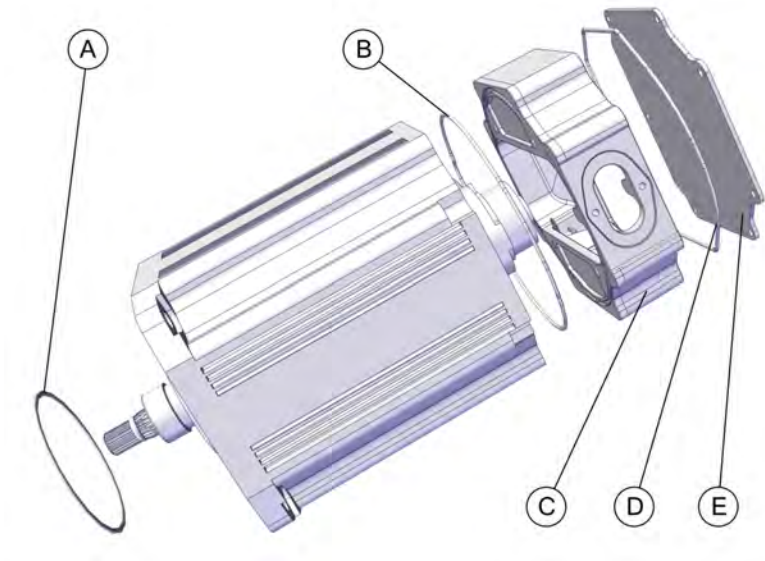
Spare part	Article number	Note
Rotating AC motor (including pinion)	3HAC058949-003	

*Continues on next page*

8 Spare parts - Motors

8.3 Axis-3 motor (including pinion)  
Continued

Other parts

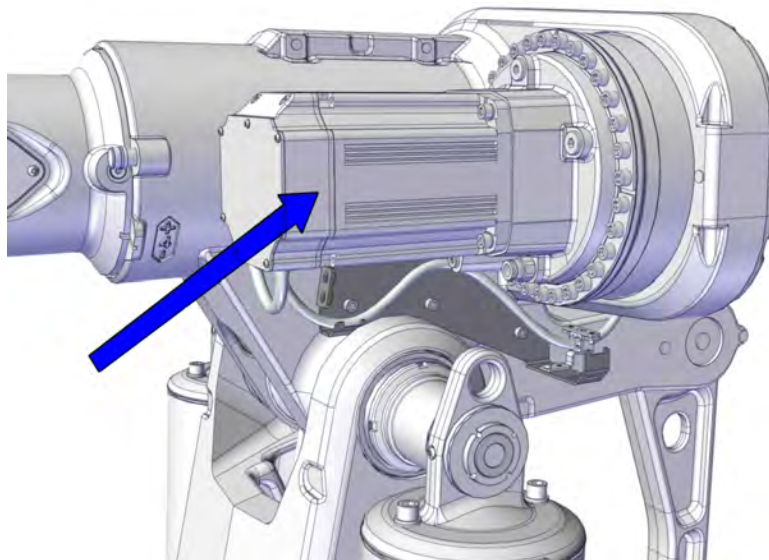


xx1500001894

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

#### 8.4 Axis-4 motor (including pinion)

##### Axis-4 motor



xx1500001897

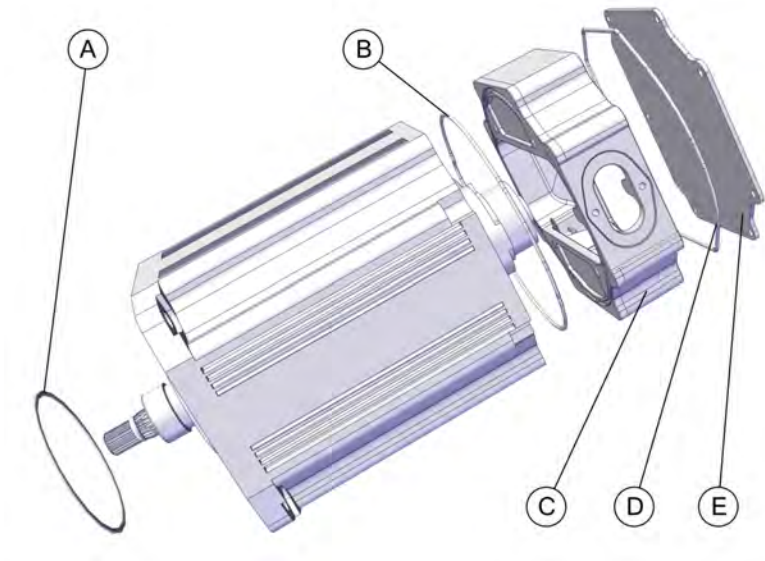
Spare part	Article number	Note
Rotating AC motor (including pinion)	3HAC058950-003	

*Continues on next page*

8 Spare parts - Motors

8.4 Axis-4 motor (including pinion)  
Continued

Other parts



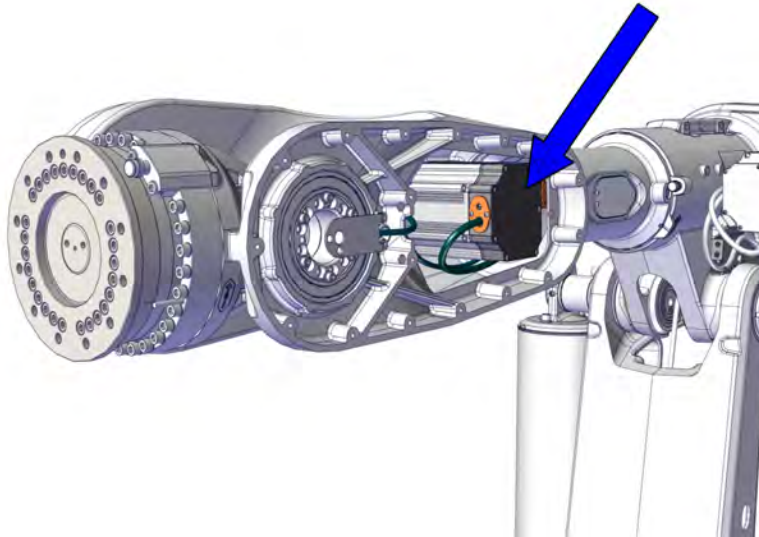
xx1500001894

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

---

**8.5 Axis-5 motor (including pinion)**

---

**Axis-5 motor**

xx1500001898

Spare part	Article number	Note
Rotating AC motor (including pinion)	3HAC058949-003	

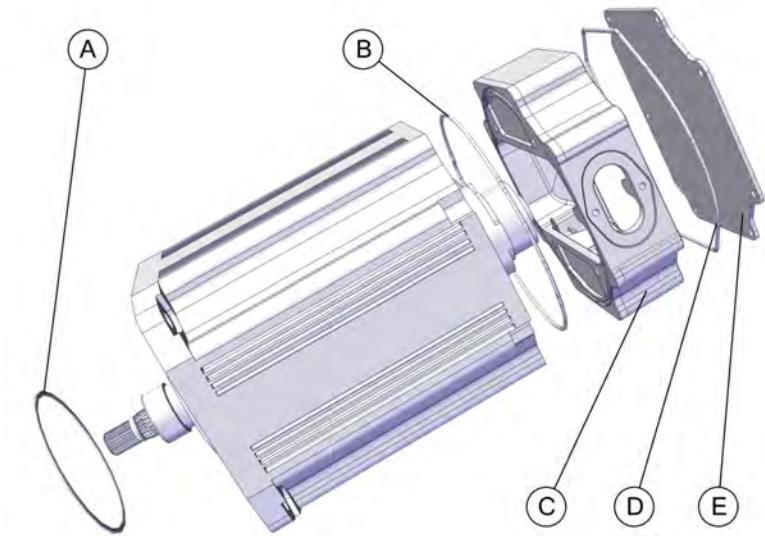
*Continues on next page*



# 8 Spare parts - Motors

## 8.5 Axis-5 motor (including pinion) Continued

### Other parts



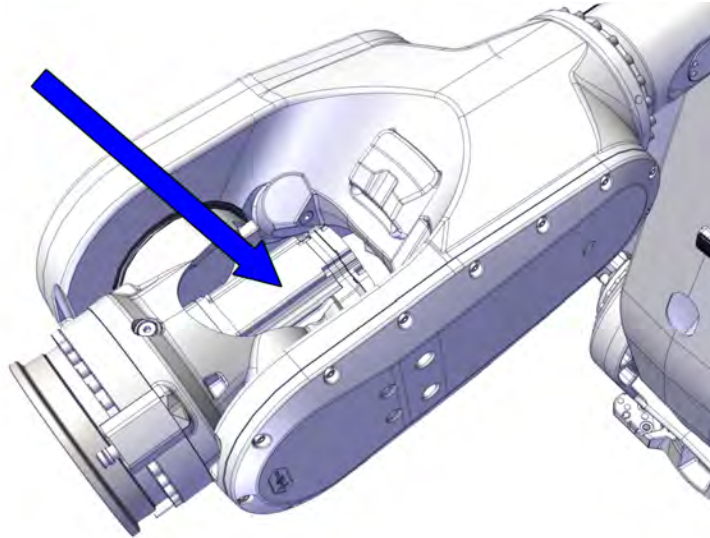
xx1500001894

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



#### 8.6 Axis-6 motor (including pinion)

##### Axis-6 motor



xx1500001941

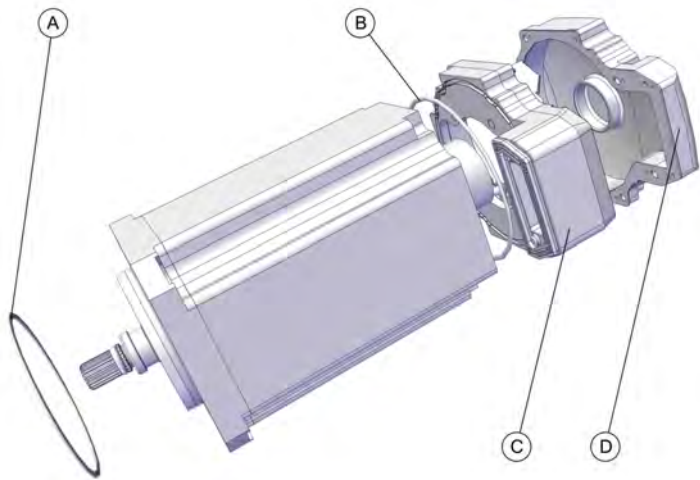
Spare part	Article number	Note
Rotating AC motor (including pinion)	3HAC058951-003	

*Continues on next page*

8 Spare parts - Motors

8.6 Axis-6 motor (including pinion)  
Continued

Other parts



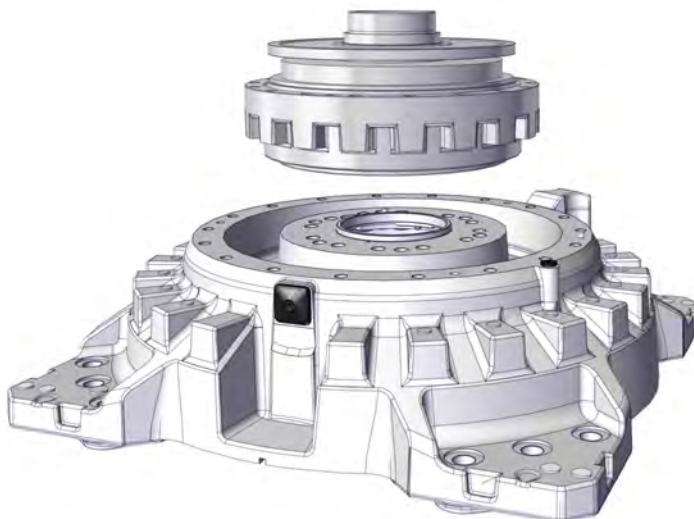
xx1500001942

	Spare part	Article number	Note
A	O-ring	3HAB3772-107	Motor
B	O-ring	3HAC3772-110	Box
C	Connection box	3HAC043343-002	
D	Cover	3HAC026607-004	M8 (including gasket)

## 9 Spare parts - Gearboxes

### 9.1 Gearbox axis-1

#### Gearbox



xx1500001943

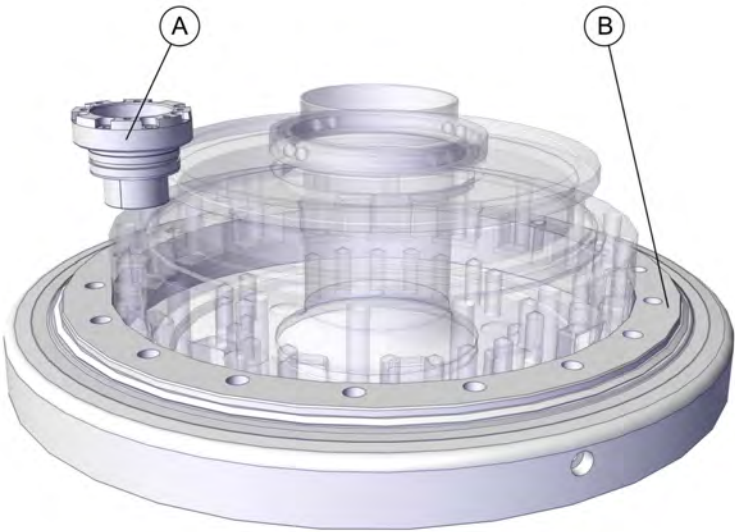
Spare part	Article number	Note
Reduction gear RV 700CS	3HAC048963-002	

*Continues on next page*

9 Spare parts - Gearboxes

9.1 Gearbox axis-1  
Continued

Other parts

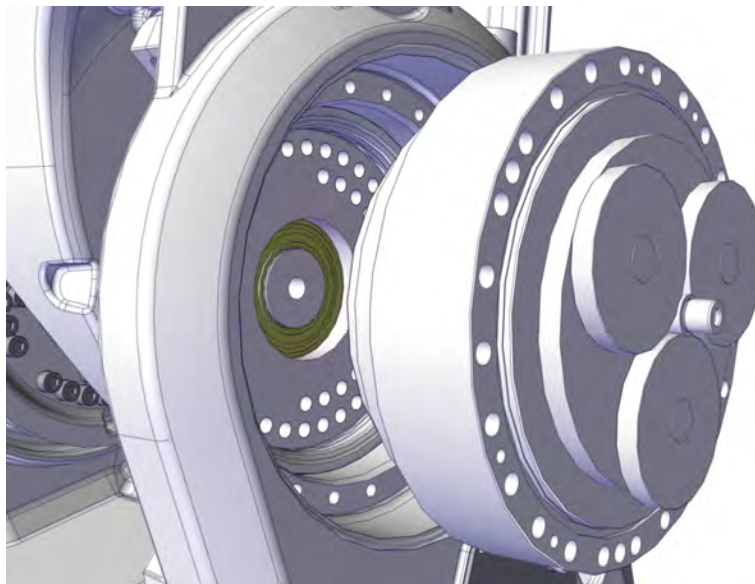


xx1500001944

	Spare part	Article number	Note
A	Hub with pinion	3HAC049795-003	
B	Cross roller bearing	3HAC048069-003	

## 9.2 Gearbox axis-2

### Gearbox



xx1500001945

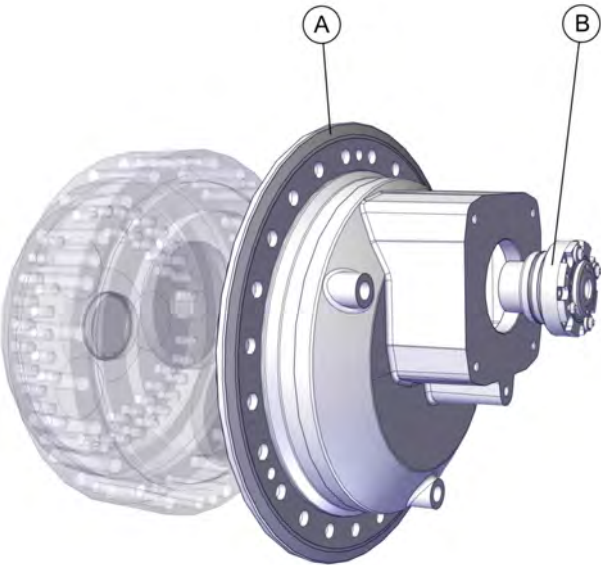
Spare part	Article number	Note
Reduction gear RV 900N incl input gear	3HAC048392-003	

*Continues on next page*

9 Spare parts - Gearboxes

9.2 Gearbox axis-2  
Continued

Other parts

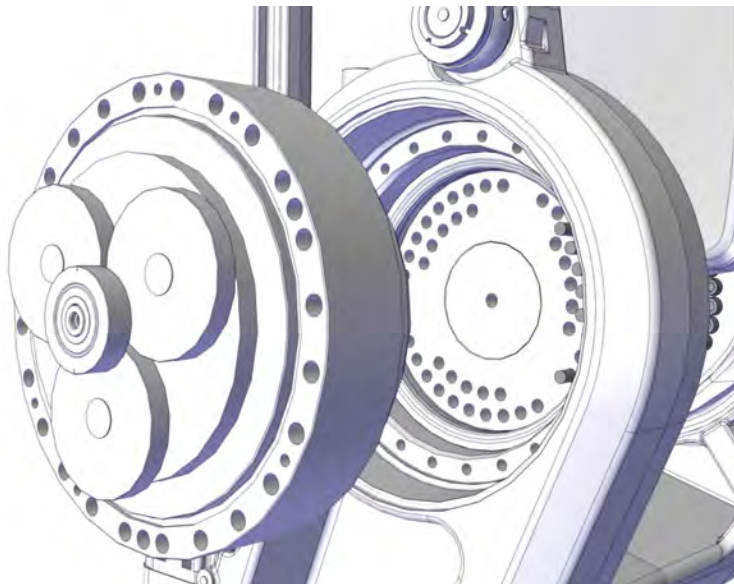


xx1500001946

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

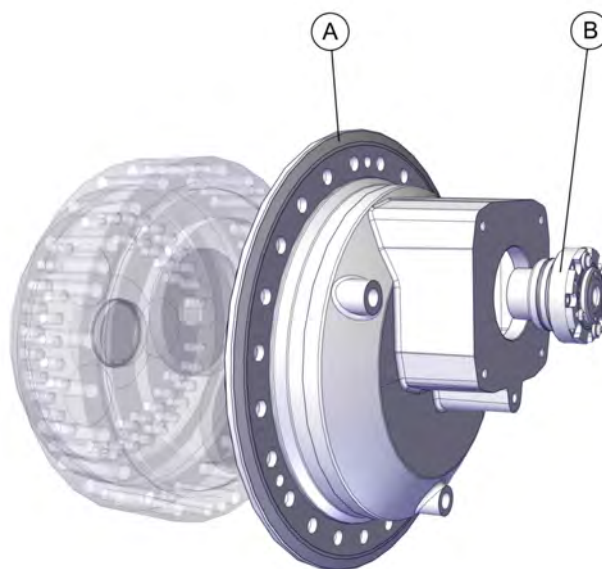
### 9.3 Gearbox axis-3

#### Gearbox



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

#### Other parts



xx1500001946

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

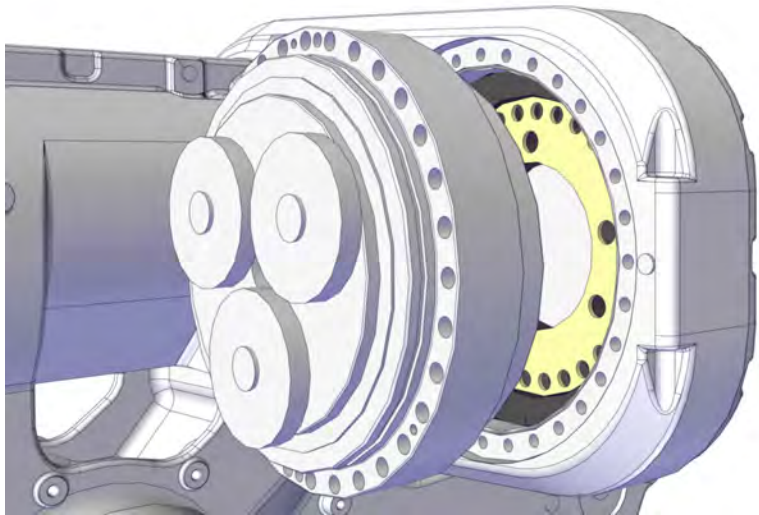


9 Spare parts - Gearboxes

9.4 Gearbox axis-4 primary

9.4 Gearbox axis-4 primary

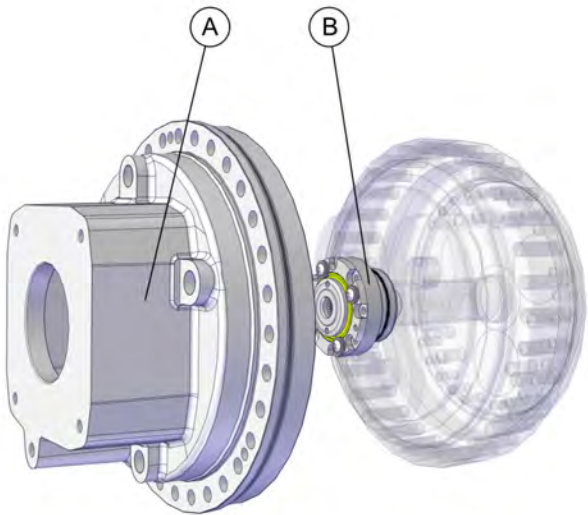
Gearbox



xx1500001948

Spare part	Article number	Note
Reduction Gear RV-500N-236.36	3HAC043073-003	

Other parts



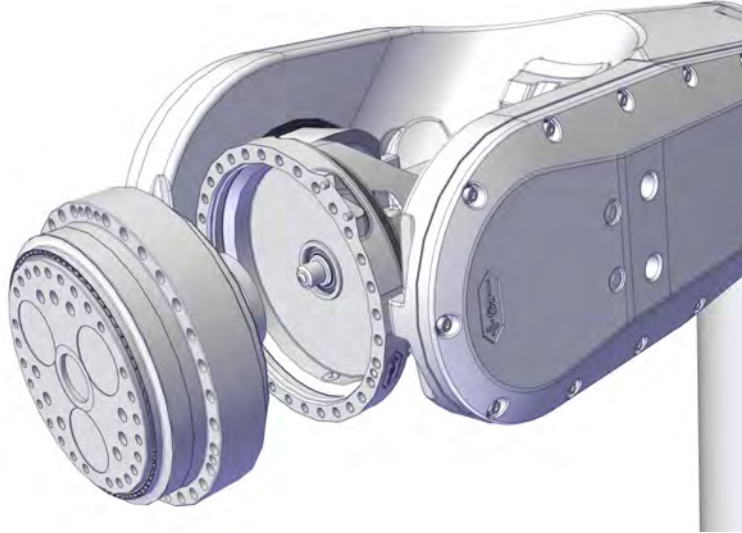
xx1500001949

	Spare part	Article number	Note
A	Motor flange	3HAC048254-006	
B	Hub with pinion	3HAC049906-003	



### 9.5 Gearbox axis-6

#### Gearbox



xx1500001951

Spare part	Article number	Note
Reduction Gear RV-500N-236.36	3HAC043073-003	

**This page is intentionally left blank**

## 10 Spare parts - Calibration items

---

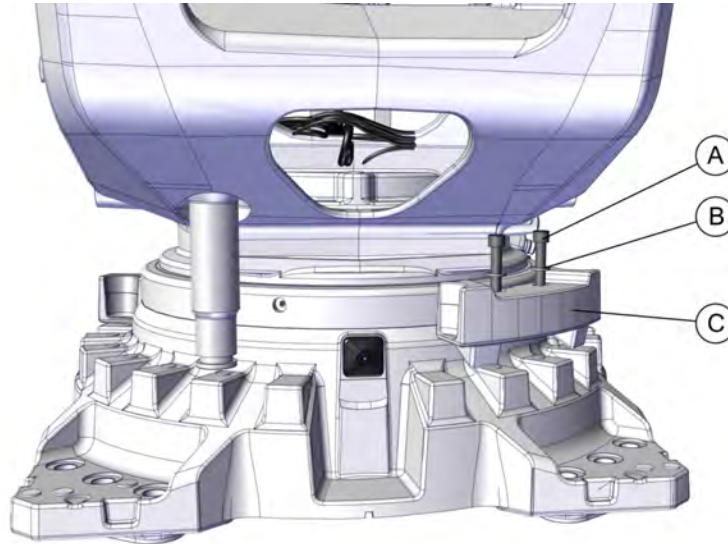
### Calibration items

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

**This page is intentionally left blank**

# 11 Spare parts - Options

## Mechanical stop

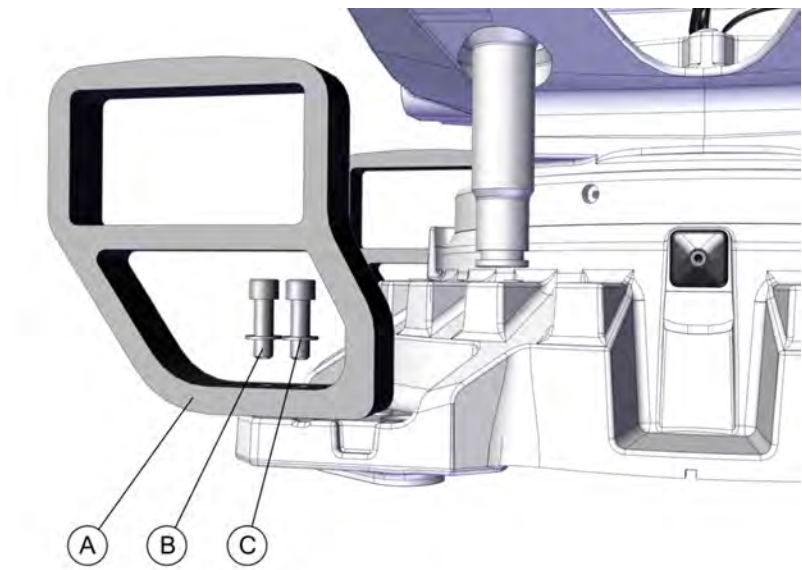


xx1500001952

	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		

*Continues on next page*

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		



# Contact us

## **ABB AB**

**Discrete Automation and Motion  
Robotics**

S-721 68 VÄSTERÅS, Sweden

Telephone +46 (0) 21 344 400

## **ABB AS, Robotics**

**Discrete Automation and Motion**

Nordlysvegen 7, N-4340 BRYNE, Norway

Box 265, N-4349 BRYNE, Norway

Telephone: +47 51489000

## **ABB Engineering (Shanghai) Ltd.**

No. 4528 Kangxin Highway

PuDong District

SHANGHAI 201319, China

Telephone: +86 21 6105 6666

[www.abb.com/robotics](http://www.abb.com/robotics)