ROBOTICS

Product manual

FlexPendant Retractable Cable

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Product manual
FlexPendant Retractable Cable

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Original instructions.

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Overview of this manual

About this manual

This manual contains instructions for installing, maintaining, and repairing the *FlexPendant Retractable Cable* unit for S4C, S4C+, IRC5, IRC5P, and OmniCore.

Prerequisites

A maintenance/repair/installation craftsman working with an ABB manipulator must:

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

This manual should be used together with the product manual for the respective robot controller.

References

Tip

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

Reference	Document ID
Safety manual for robot - Manipulator and IRC5 or OmniCore controller [i]	*3HAC031045-001*
Product manual - IRC5	*3HAC047136-001*
Product manual - IRC5 Compact	*3HAC047138-001*
Product manual - IRC5 Panel Mounted Controller	*3HAC047137-001*
Product Manual - IRC5P	*3HNA008861-001*
Product manual - OmniCore C30 Type A	*3HAC089064-001*
Product manual - OmniCore C90XT	*3HAC073706-001*
Product manual - OmniCore E10	*3HAC079399-001*
Product manual - OmniCore V250XT Type B	*3HAC087112-001*
Product manual - OmniCore V400XT	*3HAC081697-001*
User's guide - S4Cplus (BaseWare OS 4.0)	*3HAC7793-1*
User's guide - S4C (BaseWare OS 3.2)	*3HAC5784-1*

[i] This manual contains all safety instructions from the product manuals for the manipulators and the controllers.

Revisions

Revision	Description
-	First edition
A	Added IRC5P.
B	Added information about external panel, see *Limitation on page 20*.
C	• Added information for SxTPU4 for IRC5. • Added information for OmniCore controllers.

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1 Safety

1.1 Limitation of liability

Limitation of liability

Any information given in this manual regarding safety must not be construed as a warranty by ABB that the industrial robot will not cause injury or damage even if all safety instructions are complied with.

The information does not cover how to design, install and operate a robot system, nor does it cover all peripheral equipment that can influence the safety of the robot system.

In particular, liability cannot be accepted if injury or damage has been caused for any of the following reasons:

- Use of the robot in other ways than intended.
- Incorrect operation or maintenance.
- Operation of the robot when the safety devices are defective, not in their intended location or in any other way not working.
- When instructions for operation and maintenance are not followed as intended.
- Non-authorized design modifications of the robot.
- Repairs on the robot and its spare parts carried out by in-experienced or non-qualified personnel.
- Foreign objects.
- Force majeure.

Spare parts and equipment

ABB supplies original spare parts and equipment which have been tested and approved for their intended use. The installation and/or use of non-original spare parts and equipment can negatively affect the safety, function, performance, and structural properties of the robot. ABB is not liable for damages caused by the use of non-original spare parts and equipment.

1.2 Requirements on personnel

General

Only personnel with appropriate training are allowed to install, maintain, service, repair, and use the robot. This includes electrical, mechanical, hydraulics, pneumatics, and other hazards identified in the risk assessment.

Persons who are under the influence of alcohol, drugs or any other intoxicating substances are not allowed to install, maintain, service, repair, or use the robot.

The plant liable must make sure that the personnel is trained on the robot, and on responding to emergency or abnormal situations.

Personal protective equipment

Use personal protective equipment, as stated in the instructions.

1.3 Installation and commissioning

National or regional regulations

The integrator of the robot system is responsible for the safety of the robot system.

The integrator is responsible that the robot system is designed and installed in accordance with the safety requirements set forth in the applicable national and regional standards and regulations.

The integrator of the robot system is required to perform a risk assessment.

Electrical safety

Incoming mains must be installed to fulfill national regulations.

The power supply wiring to the robot must be sufficiently fused and if necessary, it must be possible to disconnect it manually from the mains power.

The power to the robot must be turned off with the main switch and the mains power disconnected when performing work inside the controller cabinet. Lock and tag shall be considered.

Harnesses between controller and manipulator shall be fixed and protected to avoid tripping and wear.

Wherever possible, power on/off or rebooting the robot controller shall be performed with all persons outside the safeguarded space.

Note

Use a CARBON DIOXIDE (CO_2) extinguisher in the event of a fire in the robot.

Verify the safety functions

Before the robot system is put into operation, verify that the safety functions are working as intended and that any remaining hazards identified in the risk assessment are mitigated to an acceptable level.

1.4 Maintenance and repair

General

Corrective maintenance must only be carried out by personnel trained on the robot.

Maintenance or repair must be done with all electrical, pneumatic, and hydraulic power switched off, that is, no remaining hazards.

Hazards due to stored mechanical energy in the manipulator for the purpose of counterbalancing axes must be considered before maintenance or repair.

Never use the robot as a ladder, which means, do not climb on the controller, manipulator, including motors, or other parts. There are hazards of slipping and falling. The robot might be damaged.

Make sure that there are no tools, loose screws, turnings, or other unexpected parts remaining after maintenance or repair work.

When the work is completed, verify that the safety functions are working as intended.

Hot surfaces

Surfaces can be hot after running the robot, and touching these may result in burns. Allow the surfaces to cool down before maintenance or repair.

1.5 Safety during troubleshooting

General

When troubleshooting requires work with power switched on, special considerations must be taken:

- Safety circuits might be muted or disconnected.
- Electrical parts must be considered as *live*.
- The manipulator can move unexpectedly at any time.

DANGER

Troubleshooting on the controller while powered on must be performed by personnel trained by ABB or by ABB field engineers.

A risk assessment must be done to address both robot and robot system specific hazards.

WARNING

Hazards due to the use of brake release devices and/or gravity beneath the manipulator shall be considered.

A robot may perform unexpected limited movement.

WARNING

Manipulator movements can cause serious injuries on users and may damage equipment.

Related information

See also the safety information related to installation, operation, maintenance, and repair.

1.6 The unit is sensitive to ESD

Description

ESD (electrostatic discharge) is the transfer of electrical static charge between two bodies at different potentials, either through direct contact or through an induced electrical field. When handling parts or their containers, personnel not grounded may potentially transfer high static charges. This discharge may destroy sensitive electronics.

Safe handling

Use one of the following alternatives:

- Use a wrist strap.

  Wrist straps must be tested frequently to ensure that they are not damaged and are operating correctly.
- Use an ESD protective floor mat.

  The mat must be grounded through a current-limiting resistor.
- Use a dissipative table mat.

  The mat should provide a controlled discharge of static voltages and must be grounded.

2 Description of the FlexPendant Retractable Cable

About the FlexPendant Retractable Cable

The FlexPendant Retractable Cable, FPRC, is an automatic cable winding system for teach pendants. Spring driven, the system is a fast and easy way to maintain a clear and safe work area. Thanks to its spring-loaded retraction system, the FPRC automatically rewinds the teach pendant cable inside the reel.

The FPRC is available for all IRC5 controllers and OmniCore controllers with the FlexPendant.

For IRC5, there are three variants of the FPRC depending on the generation of the FlexPendant. These variants are not interchangeable. See section *Spare parts on page 45*.

For OmniCore E10 and IRC5 SxTPU4, an additional harness adapter is needed for connecting to the controller.

Applicable standards

The Retractable Cable is designed in accordance with the following requirements:

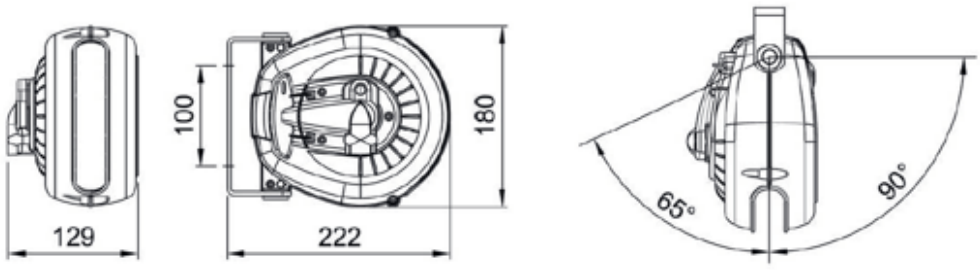
- Integrated brake to limit speed retraction.
- Complies with standards UNI EN ISO 13849-1 e2, CEI EN 60204-1, UNI EN ISO 10218-1, EN 61242-A1.
- Integrated filter to clean the cable.

Dimensions of standard versions

For IRC5 robots with FlexPendant versions 1, 2, and 3, the color of the reel is light grey. For FlexPendant version 4 (SxTPU4) and for OmniCore, the reel is dark grey. The dimensions are the same.

Dimensions, mini version

Version	Height	Width	Depth
Mini, 4 m	180 mm	129 mm	222 mm



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Dimensions, medium version

Version	Height	Width	Depth
Medium, 10 m	276 mm	219 mm	450 mm

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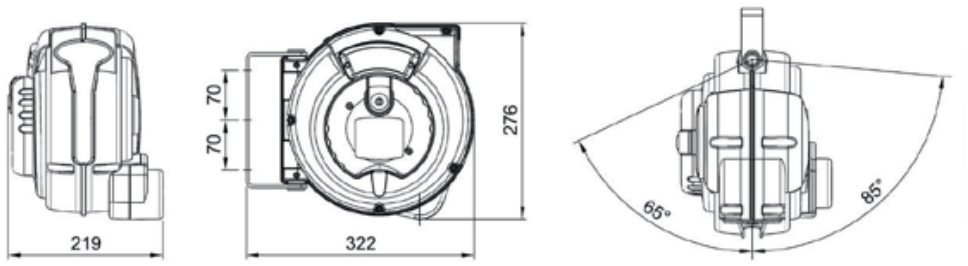

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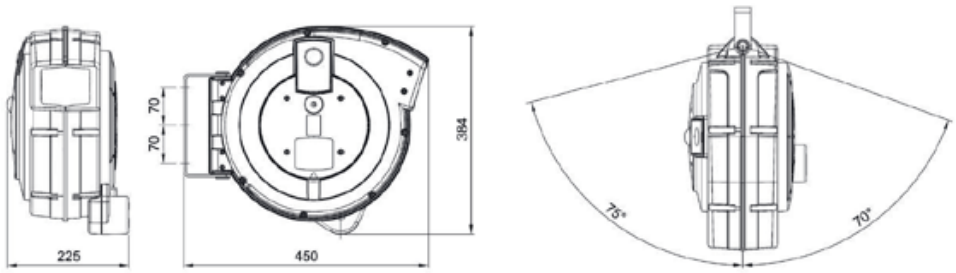
Dimensions, large version

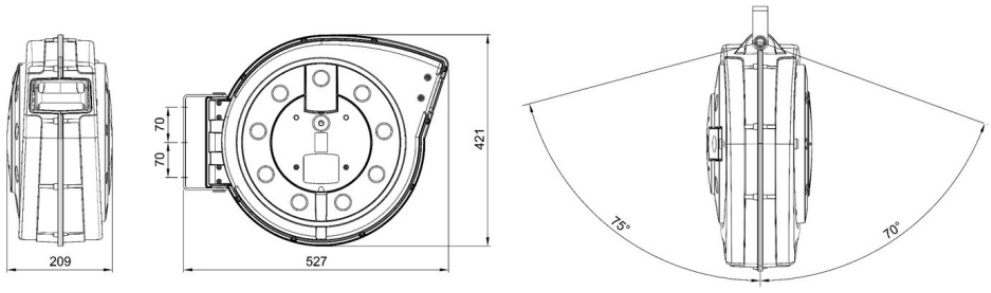
Version	Height	Width	Depth
Large, 20 m	384 mm	225 mm	450 mm



xx1300002622

Dimensions, jumbo version

Version	Height	Width	Depth
Jumbo, 25 m	421 mm	209 mm	527 mm



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Dimensions of paint versions

Dimensions, paint version

Version	Height	Width	Depth
Paint, 4 m	306 mm	227 mm	434 mm

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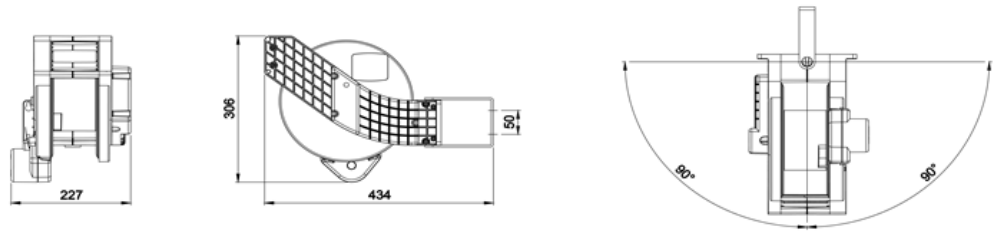

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Foundry versions

The heat-resistant glass braided sleeving consists of textile glass with a braided construction of high thermal resistance and a specially developed impregnation of a silicone resin. The combination of these two polymers allows this sleeve to be used in applications with high thermal and mechanical demands. The Foundry FPRC version withstands high continuous temperature, is halogen-free, with moderate thermal insulation, is soft, flexible, lightweight, and is RoHS compliant.

Temperature:

- Operative temperature: -55°C up to +240°C
- Short term temperature: +538°C

Available sizes:

- 10 m: medium size, same as 10 m FPRC
- 15/20 m: large size, same as 20 m FPRC
- 25 m: jumbo size

Customized versions

There are also customized versions available with extendable cable lengths, and extended length of the fixed cable.

Extended cable length:

- 15 m: medium size, same as 10 m FPRC
- 25/30 m: large size, same as 20 m FPRC
- 35 m: jumbo size

The standard length of the fixed cable is 2.5 m, but this can be customized, for example, 10+8 m/15+10 m/25+5 m.

There is also a special version available on request for the S3 and S4 controllers, see *Spare parts on page 45*.

Additional information

For more information, see the datasheet on www.abb.com/robotics

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3 Installation

3.1 Installing the bracket for IRC5 and OmniCore standard robots

Introduction

The bracket holding the retractable cable unit should be installed in a location that is suitable for your robot cell. ABB does not recommend installing it on the robot controller cabinet.

The size and quality of the attachment screws depend on the installation place.

For information about the bracket for paint robots, see *Installing the bracket for IRC5P paint robots on page 21*.

Note

The retractable cable unit must be installed vertically with the cable outlet at the top and the connection cable to the controller pointing down, see figure.

xx2400000880

Required equipment

Equipment	Note
Retractable cable unit	
Attachment screws and washers	2 pieces (mini) 3 pieces (medium, large, jumbo) The screw holes in the bracket has a diameter of 8 mm. ABB recommends using M8 socket head cap screws and wide flat washers. Screws and washers are not included in the delivery.

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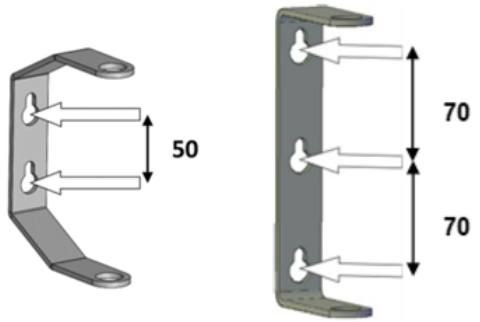
Installing the bracket

Use this procedure to install the bracket holding the FlexPendant Retractable Cable.

	Action	Note
1	Make holes for the bracket screws.  xx2400000969	Center distance of the holes: 50 mm (mini) Center distance of the holes: 70 mm (medium, large, jumbo)
2	Hold the bracket in place and secure it with the screws.	Continue with connecting the cables, see *Connecting the cables on page 23*.

Limitation

The overall length should not be longer than 60 m in total (including extension cables, external boxes, FPRC, etc.).

3.2 Installing the bracket for IRC5P paint robots

Introduction

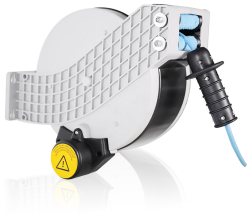
The bracket holding the retractable cable unit should be installed in a location that is suitable for your robot cell. ABB does not recommend installing it on the robot controller cabinet.

The size and quality of the attachment screws depend on the installation place.

For information about the bracket for standard robots, see *Installing the bracket for IRC5 and OmniCore standard robots on page 19*.

Note

The retractable cable unit must be installed vertically with the cable outlet at the top and the connection cable to the controller pointing down, see figure.



xx1600000629

CAUTION

The retractable cable unit must be installed outside the paint booth.

The grounding cable must be connected.

Required equipment

Equipment	Note
Retractable cable unit	
Attachment screws and washers	2 pieces The screw holes in the bracket has a diameter of 8 mm. ABB recommends using M8 socket head cap screws and wide flat washers. Screws and washers are not included in the delivery.

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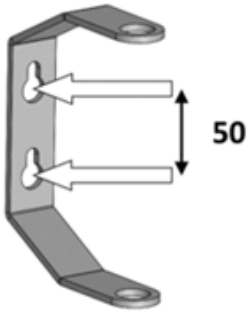
Installing the bracket

Use this procedure to install the bracket holding the FlexPendant Retractable Cable.

	Action	Note
1	Make holes for the bracket screws.  xx2400000970	Center distance of the holes: 50 mm
2	Hold the bracket in place and secure it with the screws.	Continue with connecting the cables, see *Connecting the cables on page 23*.

3.3 Connecting the cables

WARNING

Observe the following before commencing any repair work on the robot controller, or units connected to the controller:

- Switch off all electric power supplies with the power switch!
- Make sure you are grounded through a special ESD wrist bracelet or similar. Many components inside the module are sensitive to ESD (ElectroStatic Discharge) and can be destroyed if exposed to discharge. See *The unit is sensitive to ESD on page 14*

Introduction

When ordering the FPRC for an existing installation, the retractable cable replaces the original cable to the teach pendant. For OmniCore, the FPRC can be ordered together with the robot.

The connection cable is used between the controller and the reel.

The product manual for the robot controller must be used in combination with this manual for the following procedures.

WARNING

The emergency stop button and the three-position enabling device must be verified after the replacement. This requires that the power is turned on. Make sure that the area is safe before the verification.

CAUTION

Always inspect the connector for dirt or damage before connecting it to the controller. Clean or replace any damaged parts.

Connecting the connection cable

Use this procedure to connect the connection cable between the controller and the retractable cable unit.

	Action	Note
1	If the FlexPendant is connected to the controller, disconnect it.	
2	Connect the connection cable to the retractable cable unit.	Secure the connection cable so that it cannot cause accidents or be damaged.
3	For OmniCore E10 and IRC5 SxTPU4, connect the harness adapter to the fixed cable.	Make sure that the connectors are fully aligned. The connectors are sensitive to skewed insertion.

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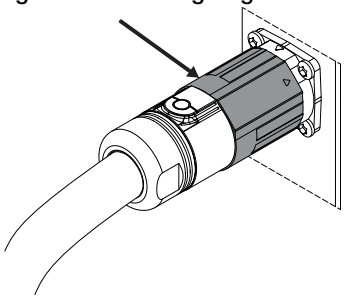
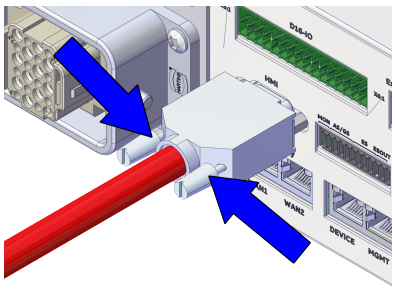
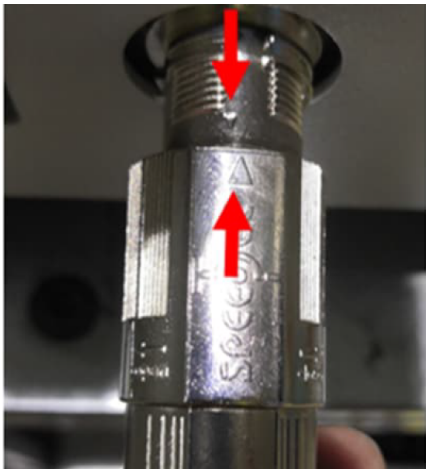
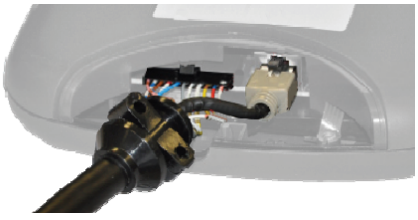
	Action	Note
4	Attach the connector to the controller and tighten the locking ring or screws.  xx1900000975  xx2100001343	Make sure that the connectors are fully aligned. The connectors are sensitive to skewed insertion.  xx2200001278

Connecting the retractable cable, IRC5 (SxTPU1, 2, 3)

Use this procedure to connect the FlexPendant to the retractable cable.

	Action	Note
1	Remove the small cover over the connectors on the back of the FlexPendant.	 xx1400000782
2	Lift the strain relief from its guides to loosen the cable.	
3	Push the tab fasteners and pull out the connectors. • Connector Black Dish • RJ45 Connector	 xx1300002543

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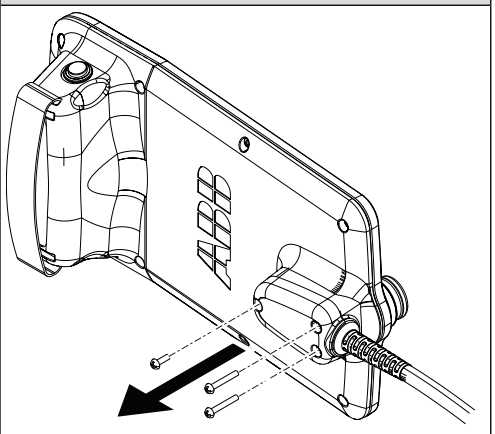
	Action	Note
4	Push the connectors for the retractable cable in place.	
5	Put the strain relief in the recess.	 xx1300002544
6	Put the housing cover in place. Tighten the screws.	
7	**CAUTION** Verify that the emergency stop button and the three-position enabling device are working.	This step is mandatory.

Connecting the retractable cable, IRC5 (SxTPU4), OmniCore

	Action	Note/Illustration
1	Remove the attachment screws for the power cable cover.	 xx1800001189

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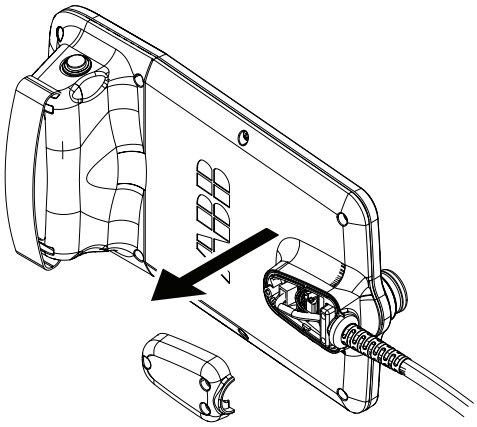
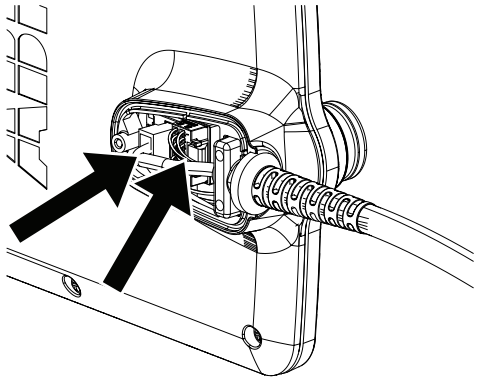
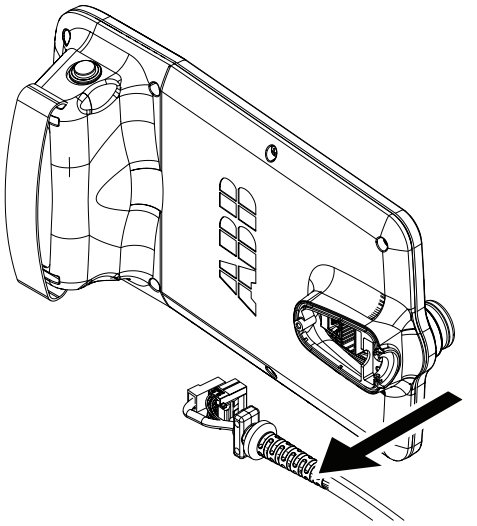
3.3 Connecting the cables
Continued

	Action	Note/Illustration
2	Remove the power cable cover.	 xx1800001190
3	Disconnect two connectors to the FlexPendant.	 xx1800001748
4	Remove the power cable. This step is not needed if the FPRC was delivered together with the robot from the factory.	 xx1800001192

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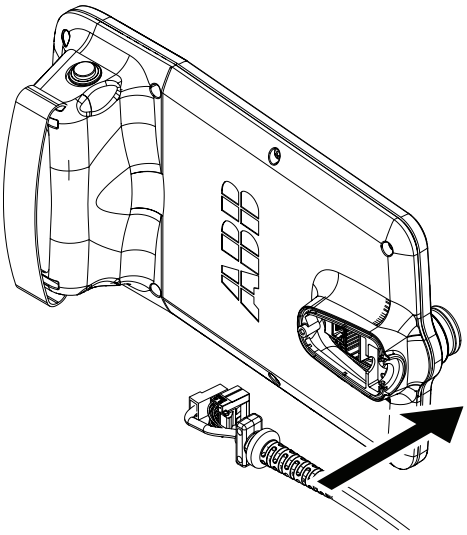
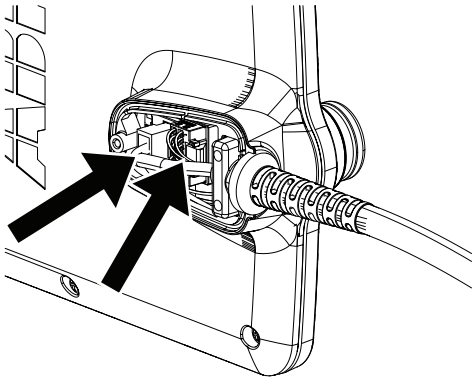
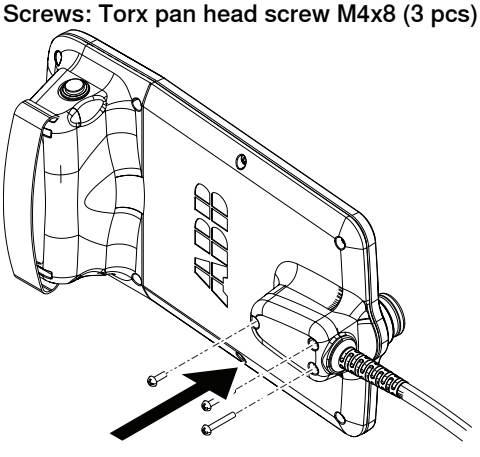
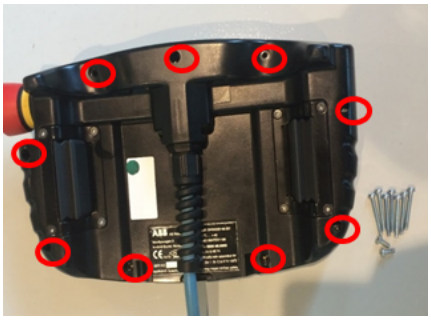
	Action	Note/Illustration
5	Fit the power cable from the FPRC.	 xx1800001193
6	Connect the power cable to the FlexPendant.	 xx1800001748
7	Fit the power cable cover and tighten the screws.	Screws: Torx pan head screw M4x8 (3 pcs)  xx1800001196
8	**CAUTION** Verify that the emergency stop button and the three-position enabling device are working.	This step is mandatory.

Continues on next page

Connecting the retractable cable, IRC5P

Use this procedure to connect the FlexPendant to the retractable cable.

Disconnect the original cable

	Action	Note
1	Remove the screws on the back cover of the FlexPendant using a torx screw driver.	 xx1600000631
2	Pull the front cover out of the back cover and remove the connector between them.	 xx1600000632
3	Remove the cable nut of the back cover.	 xx1600000633

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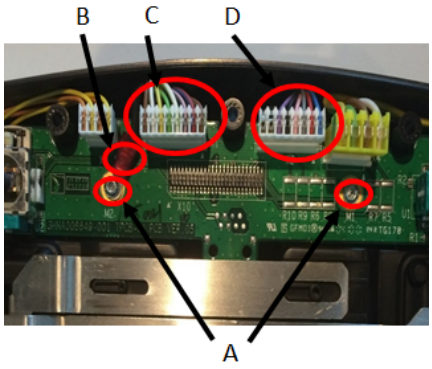
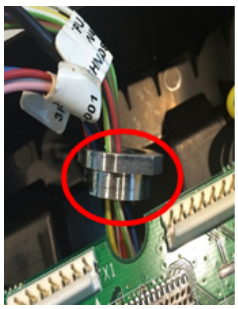
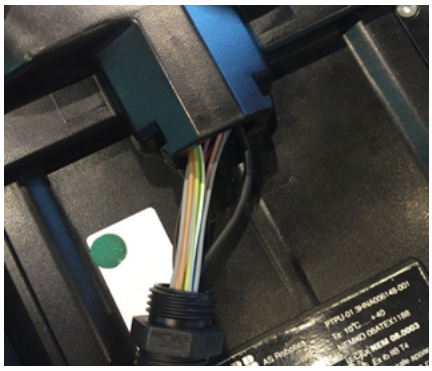
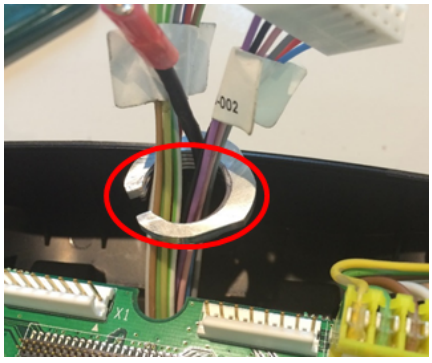
	Action	Note
4	Remove the screws (A) and the grounding wire (B). Disconnect the cable PTPU.X1 (C) and the cable PTPU.X2 (D).	 xx1600000634
5	Remove the cable ring and pull out the cables from the back cover. **Note** Be careful when pulling out the cables, the space is limited.	  xx1600000635

Connect the retractable cable

	Action	Note
1	Push the teach pendant cables into the cable hole of the back cover.	 xx1600000636
2	Install the cable ring.	 xx1600000637

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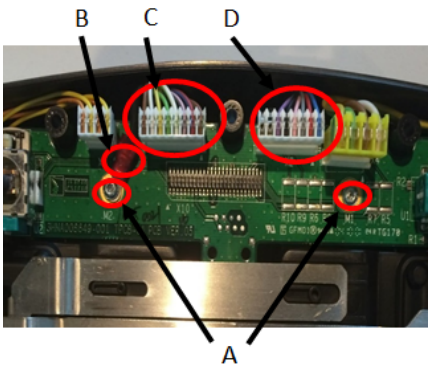
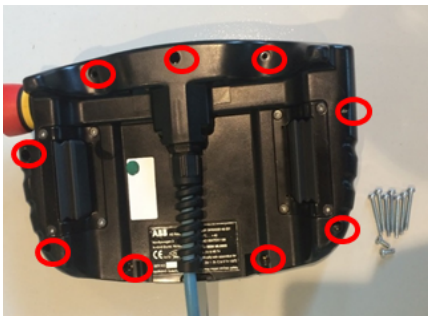
3.3 Connecting the cables

Continued

	Action	Note
3	Push the cable ring into position and tighten the cable nut to it.	 xx1600000638
4	Connect the wire (B) and the cables (C/D) and fasten the screw (A).	 xx1600000634
5	Connect the cable between the front cover and the back cover.	 xx1600000632
6	Tighten the screws on the back cover using a torx screw driver.	 xx1600000631 Tightening torque: 0.6 Nm

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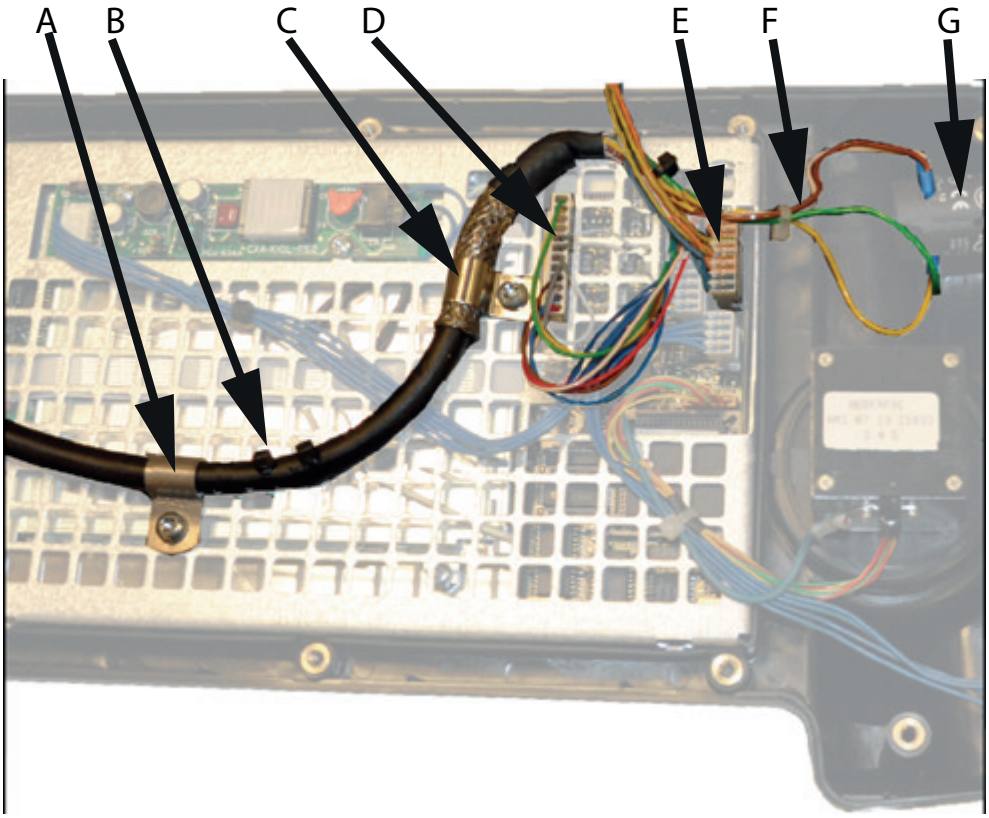
Connecting the retractable cable, S4C/S4C+

Use this procedure to connect the teach pendant to the retractable cable.



xx1300002540

A	Clamp
B	Plastic straps
C	Grounding clamp
D	Main cable connector
E	Cable connector from the back cover
F	Wires to the emergency stop
G	Emergency stop button

Disconnecting the original cable

	Action	Note
1	Remove the back housing cover of the teach pendant.	
2	Disconnect the cable from the back cover.	See position E in the figure.
3	Remove the grounding screw and clamp.	See position C in the figure.
4	Remove the screw, clamp, and plastic straps that attach the teach pendant cable.	See positions A and B in the figure.

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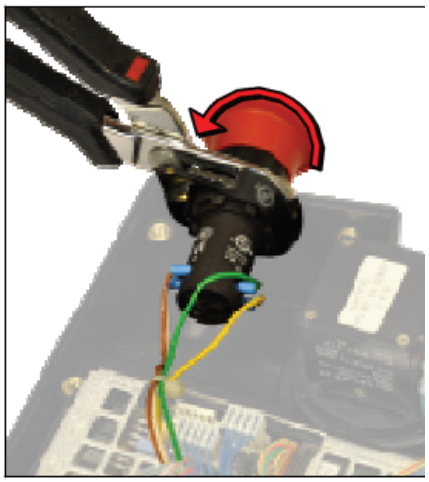
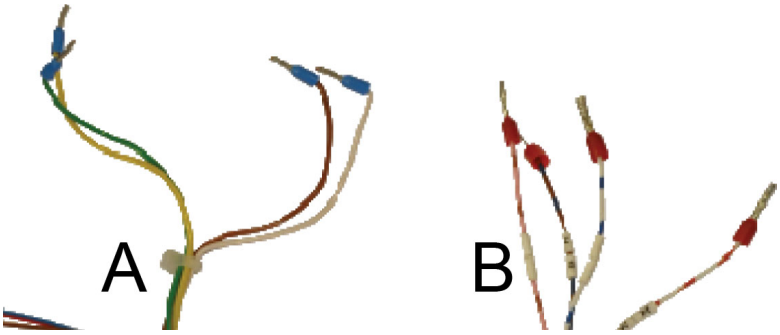
	Action	Note
5	Loosen the sealing ring of the emergency stop button.	 xx1300002541
6	Loosen the holding screws and remove the wires from the emergency stop button (brown, white, green, and yellow).	See positions F and G in the figure.
7	Disconnect the main cable connector.	See position D in the figure.

Connecting the retractable cable

CAUTION

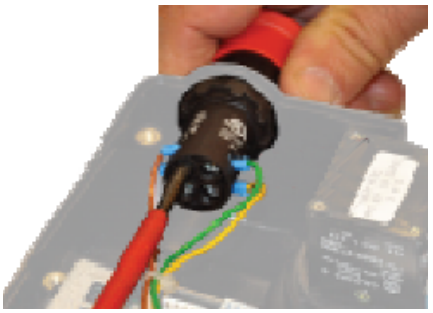
The color code of the wires in the retractable cable (B) do not match the colors of the original wires (A).



xx1400000543

Color code	Wire color
YE	Yellow
BN	Brown
GN	Green
WH	White

Continues on next page

	Action	Note
1	Connect the wires to the emergency stop button and tighten the holding screws. **CAUTION** The color code of the wires in the retractable cable do not match the color coding of the original. See the preceding table and figure. • Connect GN-11 and YE-12 on the first emergency channel. • Connect WH-21 and BN-22 on the second emergency channel.	 xx1300002542
2	Tighten the sealing ring of the emergency stop button.	
3	Connect the main connector.	See position D in the figure.
4	Put the grounding clamp in position and tighten the screw.	See position C in the figure.
5	Put the retractable cable in position and attach the clamps and screws.	See position A in the figure.
6	Adjust the length of the cable and put the gasket into the slot.	
7	Safety the cable and wires with plastic straps.	See position B in the figure.
8	Connect the connector of the teach pendant back cover.	See position E in the figure.
9	Put the housing cover in place. Make sure that no wires are squeezed.	
10	Tighten the screws.	
11	**CAUTION** Verify that the emergency stop button and the three-position enabling device are working.	This step is mandatory.

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4 Maintenance

4.1 Maintenance schedule and expected component life

Introduction

The FlexPendant Retractable Cable unit must be maintained at regular intervals.

Activities and intervals for standard robots

Maintenance activity	Equipment	Interval
Inspection	FlexPendant Retractable Cable	12 months
Inspection	Brake	12 months
Cleaning	FlexPendant Retractable Cable	When needed[i]
Cleaning	Brushes	When needed[i]
Cleaning	Cable	When needed[i]

[i] The interval depends on the working environment of the equipment.

Activities and intervals for paint robots

Maintenance activity	Equipment	Interval
Inspection	FlexPendant Retractable Cable	3 months
Inspection	Brake	3 months
Inspection	Removable carter	6 months
Inspection	Grounding cable	12 months
Inspection	Cable stopper, handle	12 months
Cleaning	FlexPendant Retractable Cable	When needed[i]
Cleaning	Brushes	When needed[i]
Cleaning	Cable	When needed[i]
Cleaning and replacement	Cleaning roller	Every month

[i] The interval depends on the working environment of the equipment.

Expected component life

The expected component life of the spare parts depend on the usage of the FlexPendant Retractable Cable. Replace them when they lose their effectiveness.

4.2 Inspecting the complete FlexPendant Retractable Cable

WARNING

Observe the following before commencing any repair work on the controller, or units connected to the controller:

- Switch off all electric power supplies with the power switch!
- Make sure you are grounded through a special ESD wrist bracelet or similar. Many components inside the module are sensitive to ESD (ElectroStatic Discharge) and can be destroyed if exposed to discharge. See *The unit is sensitive to ESD on page 14*

CAUTION

Do not open the FlexPendant Retractable Cable or the guarantee is not valid.

Inspection for standard robots

Use the following procedure to inspect the complete FlexPendant Retractable Cable.

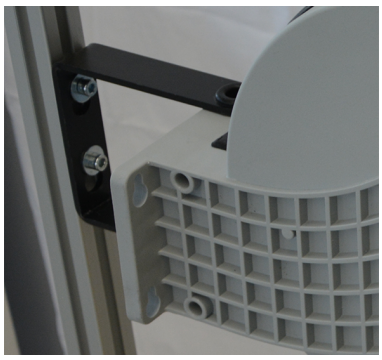
	Action	Note
1	Make sure that the holding screw of the bracket is tight.	 xx1300002384
2	Examine the connectors and cabling to make sure they are securely attached and that the cabling is not damaged.	
3	Examine the integrity of all the external plastic elements.	
4	Examine the cable jacket and make sure that the cable is not twisted. Use the black line print on the cable to detect torsion.	

Continues on next page

	Action	Note
5	Examine that the cable stopper is in place and cannot be moved.	 xx1300002382
6	Examine that no foreign objects or liquids are inside the cable reel. If so, remove it.	
7	To test the stop device, retraction spring, and brake: 1 Pull out at least 2 meters of the retractable cable to make sure that the stop device is working, that is, that the cable stays pulled out. There should be a click-clack sound while pulling out the cable. 2 Pull out the entire retractable cable and release it so the cable retracts. Examine that the entire cable length is retracted slowly. 3 Pull out cable and release it. Stop the retraction to make sure that the stop device is working. 4 Repeat 4 times.	If the brake is too fast, then it should be replaced, see *Replacing the brake on page 41*.  xx1300002383
8	Examine that there is sealing glue on all locking screws. Do not remove the glue.	

Inspection for paint robots

Use the following procedure to inspect the complete FlexPendant Retractable Cable.

	Action	Note
1	Make sure that the holding screw of the bracket is tight.	 xx1600000639

Continues on next page

4.2 Inspecting the complete FlexPendant Retractable Cable

Continued

	Action	Note
2	Examine the connectors and cabling to make sure they are securely attached and that the cabling is not damaged.	
3	Examine the integrity of all the external plastic elements.	
4	Examine the cable jacket and make sure that the cable is not twisted. Use the black line print on the cable to detect torsion.	
5	Examine that the cable stopper is in place and cannot be moved.	
6	Examine that no foreign objects or liquids are inside the cable reel. If so, remove it.	
7	To test the stop device, retraction spring, and brake: 1 Pull out at least 2 meters of the retractable cable to make sure that the stop device is working, that is, that the cable stays pulled out. There should be a click-clack sound while pulling out the cable. 2 Pull out the entire retractable cable and release it so the cable retracts. Examine that the entire cable length is retracted slowly. 3 Pull out cable and release it. Stop the retraction to make sure that the stop device is working. 4 Repeat 4 times.	If the brake too fast, then it should be replaced, see *Replacing the brake on page 41*.  xx1600000640
8	Examine that there is sealing glue on all locking screws. Do not remove the glue.	
9	Examine the cleaning roller.	
10	Examine the handle.	

4.3 Cleaning the complete FlexPendant Retractable Cable

Required equipment

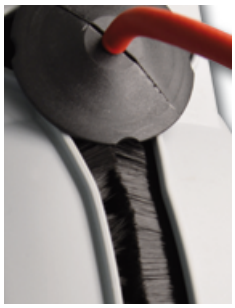
Equipment, etc.	Note
Vacuum cleaner	ESD protected
Cleaning agent, exterior cleaning	If necessary, use rag with e.g. alcohol or a paint approved cleaner for the paint version

Cleaning

Use the following procedure to clean the complete FlexPendant Retractable Cable.

Note

The cable must be stopped at the end of the rewinding or completely out to perform the cleaning.

	Action	Note
1	Clean the interior of the FlexPendant Retractable Cable with a vacuum cleaner if necessary.	
2	Clean the exterior of the FlexPendant Retractable Cable using a soft cloth and water or a mild cleaning agent.	
3	Clean the brushes with a vacuum cleaner.	 xx1400000781

Do's and don'ts!

The section below specifies some special considerations when cleaning the FlexPendant Retractable Cable.

Always!

- Always use ESD protection
- Always use cleaning equipment as specified above! Any other cleaning equipment may shorten the life of paintwork, rust inhibitors, signs, or labels!

Never!

- Never remove any covers or other protective devices when cleaning the outside of the FlexPendant Retractable Cable.
- Never use water or liquid inside the FlexPendant Retractable Cable.

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5 Repair

5.1 Replacing the brake

Introduction

The brake limits the rolling speed when retracting the cable. The brake loses power gradually over time and should be replaced.

CAUTION

If the brake is not working, then the FlexPendant can be damaged if the retraction is so strong that the operator loses his grip.

xx1300002383

Replacing the brake

Use this procedure to replace the brake on the FlexPendant Retractable Cable.

	Action	Note
1	Retract the cable so that all cable is inside the housing.	

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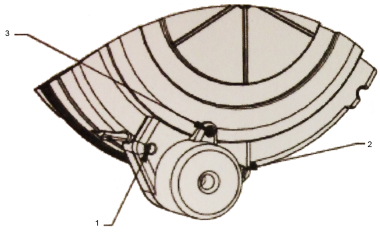
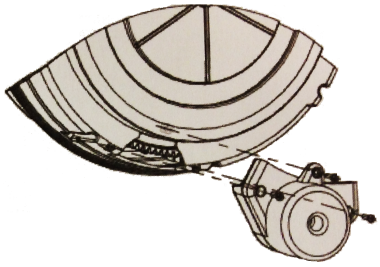
5.1 Replacing the brake

Continued

	Action	Note
2	Remove the screws holding the brake.	Standard robots  xx1400000544 Paint robots  xx1600000640
3	Pull out the brake.	 xx1400000545
4	Push the new brake in place.	
5	Safety the brake with the screws.	

5.2 Replacing the cable stopper

Introduction

The cable stopper prevents the cable from retracting too far. The cable stopper should be replaced if damaged.

The position of the cable stopper can be modified.

xx1300002382

Cable stopper for standard robots

xx1600000688

Cable stopper handle for paint robots

Replacing the cable stopper

Use this procedure to replace the cable stopper on the FlexPendant Retractable Cable.

	Action	Note
1	Retract the cable leaving approximately 50 cm pulled out, to make the cable stopper easily accessible.	
2	Remove the screws holding the cable stopper.	
3	Pull the pieces apart and remove the cable stopper.	
4	Assemble the new cable stopper around the cable.	
5	Safety the cable stopper with the screws.	

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6 Spare parts

Introduction

Note

All locking screws other than those used for the spare parts are totally sealed. Do not remove the sealing glue.

The fixing screws of the spare parts are not sealed.

CAUTION

Do not open the FlexPendant Retractable Cable or the guarantee is not valid.

FPRC S4, IRC5 SxTPU1, SxTPU2, SxTPU3 standard robots

These variants of the cable reel are light grey.

Cable length	S4C/S4C+ TPU	IRC5 SxTPU1 & SxTPU2	IRC5 SxTPU3
3 m	N.A.	N.A.	3HAC047724-003
5 m	N.A.	N.A.	3HAC047724-004
10 m	3HAC047665-001	3HAC047666-001	3HAC047724-001
20 m	3HAC047665-002	3HAC047666-002	3HAC047724-002

FPRC IRC5 SxTPU4, OmniCore standard robots

These variants of the cable reel are dark grey.

Product	Cable length	Article number
FPRC mini	4 m	3HAC086287-003
FPRC medium	10 m	3HAC086287-001
FPRC large	20 m	3HAC086287-002
Harness adapter for OmniCore E10	0.4 m	3HAC077870-001
Harness adapter for IRC5	0.4 m	3HAC087068-001

Spare parts for standard robots

Part	Spare part number	Description
Cable stopper	3HAC049831-001	
Brake	3HAC049832-001	10 meters. Small version.
Brake	3HAC049832-002	20 meters. Large version.

Spare parts for paint robots

Part	Spare part number	Description
Cable stopper, handle	3HNA026564-001	

Continues on next page

Continued

Part	Spare part number	Description
Brake	3HNA026568-001	
Cover A+B	3HNA026565-001	
Cleaning roller, blue	3HNA026566-001	
Cleaning roller, red	3HNA026567-001	

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