

# EWELLIX

A Schaeffler Company

## Vertical axis for FANUC collaborative robots LIFTKIT-FA-601 and LIFTKIT-FA-630

**FANUC**



# The heritage of innovation

Ewellix is a global innovator and manufacturer of linear motion and actuation solutions. Our state-of-the-art linear solutions are designed to increase machine performance, maximise uptime, reduce maintenance, improve safety and save energy. We engineer solutions for assembly automation, medical equipment, mobile machinery, distribution and a wide range of other industrial applications.

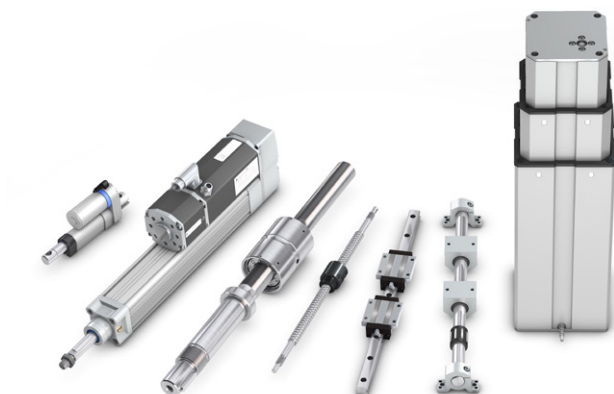
## Technology leadership

We earned our reputation through decades of engineering excellence. Our journey began over 50 years ago as part of the SKF Group, a leading global technology provider. Our history provided us with the expertise to continuously develop new technologies and use them to create cutting edge products that offer our customers a competitive advantage.

In 2019, we became independent and changed our name to Ewellix. We are proud of our heritage. This gives us a unique foundation on which to build an agile business with engineering excellence and innovation as our core strengths.

## Global presence and local support

With our global presence, we are uniquely positioned to deliver standard components and custom-engineered solutions, with full technical and applications support around the world. Our skilled engineers provide total life-cycle support, helping to optimise the design, operation and maintenance of equipment thus improving productivity and reliability while reducing costs. At Ewellix, we don't just provide products; we engineer integrated solutions that help customers realise their ambitions.



## Schaeffler Group – We pioneer motion

Ewellix is since 2023 owned by the Schaeffler Group.

As a leading global supplier to the automotive and industrial sectors, the Schaeffler Group has been driving forward groundbreaking inventions and developments in the fields of motion and mobility for over 75 years.

With innovative technologies, products, and services for electric mobility, CO<sub>2</sub>-efficient drives, Industry 4.0, digitalization, and renewable energies, the company is a reliable partner for making motion and mobility more efficient, intelligent, and sustainable.

Schaeffler manufactures high-precision components and systems for powertrain and chassis applications as well as rolling and plain bearing solutions for a large number of industrial applications.



## Benefits for handling and inspection

Ewellix provides effective solutions to complete vertical adjustment in a smart way with a wide range of “ready to mount” additional linear axis solutions. We designed them for different applications, giving to your robot an extended operation range.

Fully automated pick and place solutions are becoming a new standard with packaging stations.

A standard collaborative robot does not have such a large vertical working range. With the Ewellix LIFTKIT the base of the robot can be lifted or lowered to work at optimal position.

Stacking on pallets starts at floor level, but the stack can be up to 2 m high, and that's where LIFTKIT can increase your packaging station efficiency.

And every time you need a repetitive operation, as end of line quality inspection, our LIFTKIT can guarantee precision and reliability to maximize your results.

Here below an application example in automotive assembly lines, with a custom LIFTKIT vertical axis for ceiling mounting installation.



# Linear axis for collaborative robots LIFTKIT-FA-601 and -630

## Operating range extension

- Vertical lifting of the cobot by up to 1 400 mm with compact retracted height.
- Robust column design for industrial use, vibration free motion and virtually maintenance free.

## Plug-and-play solution

- Hardware interface compatible with CRX-5iA, CRX-10iA, CRX-10iA/L, CRX-20iA/L, CRX-25iA, CRX-30iA robots.
- FANUC CRX-ready product.
- Software control integrated with FANUC CRX plugin for easy motion programming.
- Requires the installation of the FANUC R648 Socket messaging option.

## Cost savings and higher productivity

Cobots combined with Ewellix LIFTKIT provide a cost-effective solution to upgrade an existing assembly shop, moving from a manual handled to a fully automatized line.

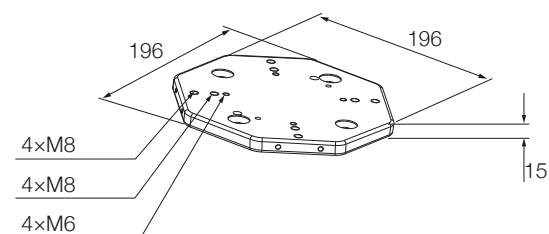
**FANUC**

## Technical data

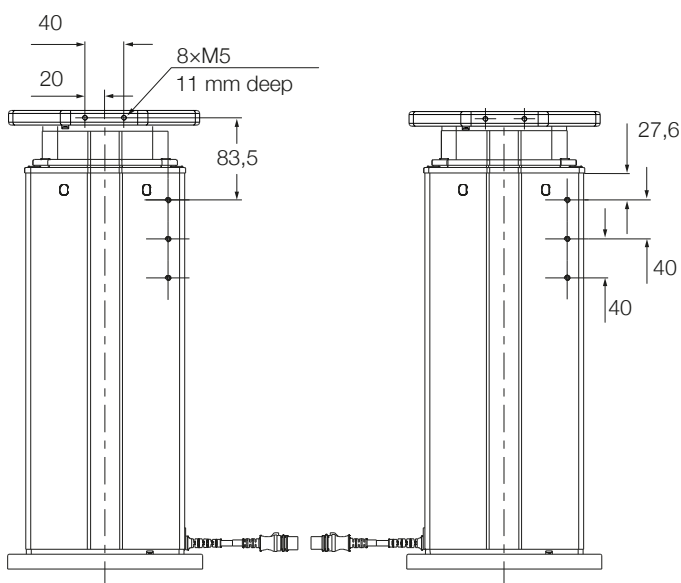
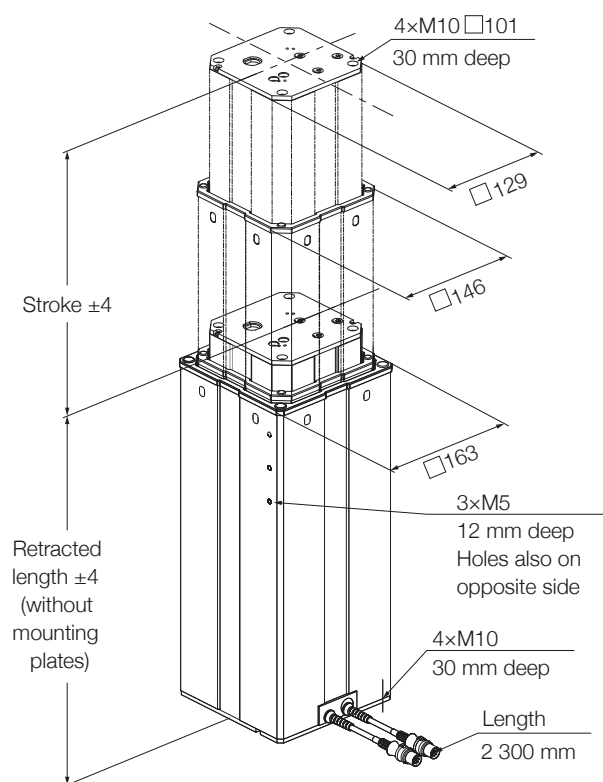
	Unit	LIFTKIT-FA-601	LIFTKIT-FA-630
<b>Column type</b>	-	TLT	TLT
<b>Performance Data</b>			
Max. push load	N	1 500	2 500
Max. pull load	N	0	0
Max. dynamic moment	Nm	210	1 000
Max. static moment	Nm	3 000	7 000
Max. linear speed	mm/s	80	55
Duty cycle	-	10% (20% at 500 N)	10%
<b>Mechanical Data</b>			
Screw type	-	Acme screw	Acme screw
Stroke range	mm	500 - 1 400	500 - 900
Retracted length (only lifting column)	mm	Stroke/2 + 275	Stroke/2 + 275
Weight @ 0 mm stroke	kg	21	105
Δ weight per 500 mm stroke	kg	1,7	5,1
Robots compatibility	-	CRX-5iA, CRX-10iA, CRX-10iA/L, CRX-20iA/L	CRX-25iA, CRX-30iA
Cable management	-	Threads on column and interface plate to attach cable management	Threads on column and interface plate to attach cable management
<b>Electrical</b>			
Input Voltage/Current	-	120 VAC / 6,5 A 230 VAC / 3,3 A	120 VAC / 6.5 A 230 VAC / 3.3 A
Input frequency	Hz	50-60	50-60
Input Fuse	A	10	10
I/O voltage	-	24 VDC	24 VDC
I/O current	-	max. 10 A not protected	max. 10 A not protected
Emergency stop	-	STO up to PLe, Cat.4	STO up to PLe, Cat.4
<b>Communication</b>			
Control interface	-	FANUC CRX with R648 Socket messaging	FANUC CRX with R648 Socket messaging
Positioning, repeatability	mm	± 1	± 1
Accessible positions	-	any	any
Feedback	-	Position & Status	Position & Status
Soft start and stop	-	Implemented for smooth operation	Implemented for smooth operation
Software control	-	FANUC CRX plugin	FANUC CRX plugin
<b>Environment</b>			
Type of protection	-	IP40	IP40
Ambient temperature	°C	+10 to +40	+10 to +40
Max. humidity	%	85	85
Vibration	-	Stationary industrial environment	Stationary industrial environment

## Dimensional drawing LIFTKIT-FA-601 compatible with CRX-5iA, CRX-10iA, CRX-10iA/L, CRX-20iA/L robots

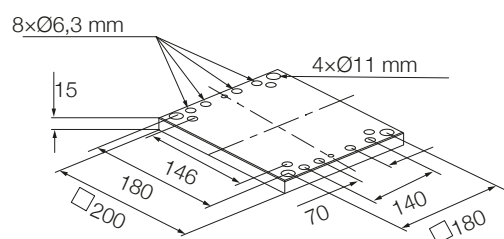
### Robot attachment plate



### TLT Column

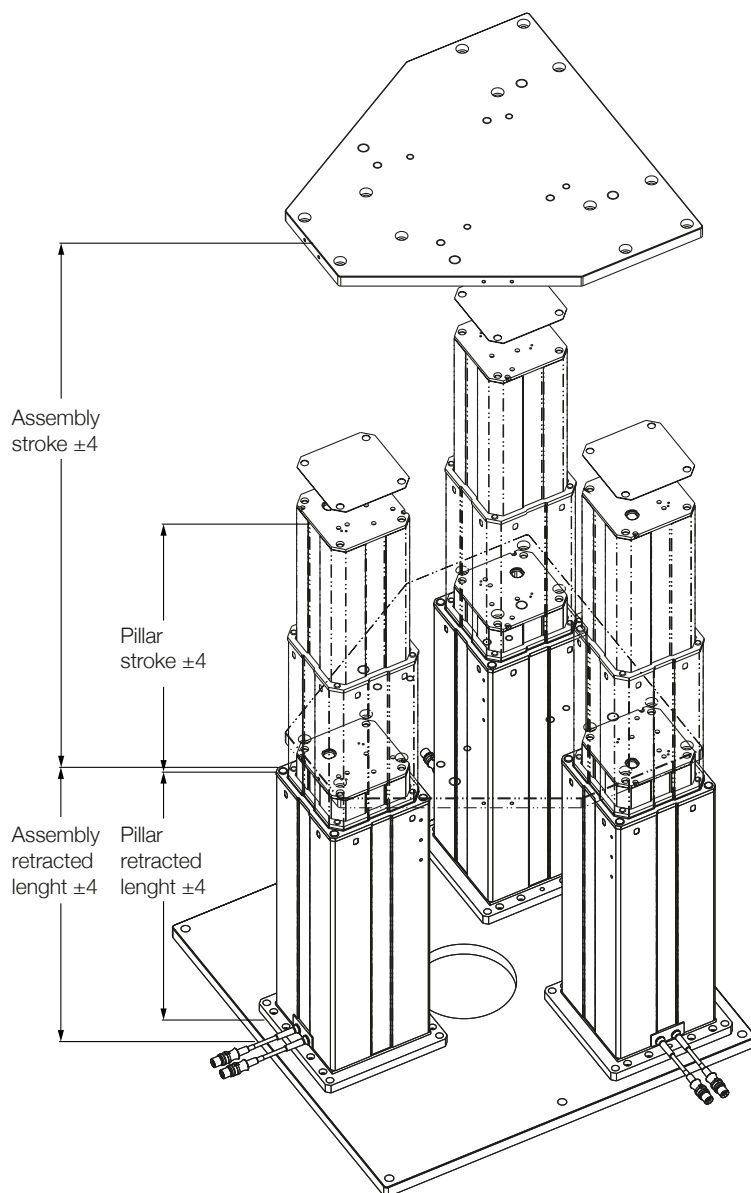


### Bottom mounting plate

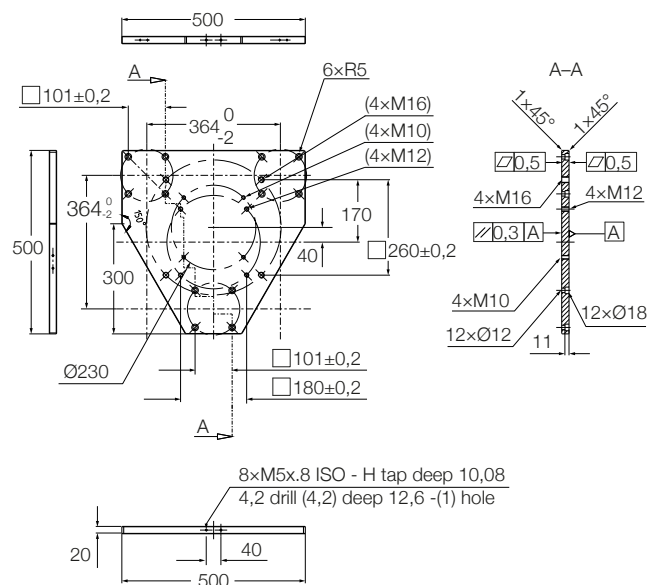


## Dimensional drawing LIFTKIT-FA-630 compatible with CRX-25iA, CRX-30iA robots

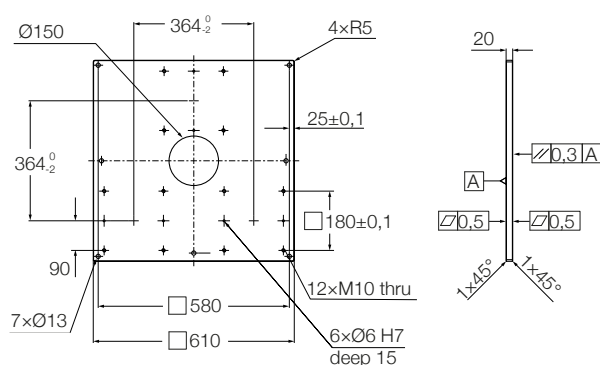
### TLT lifting columns



### Top mounting plate



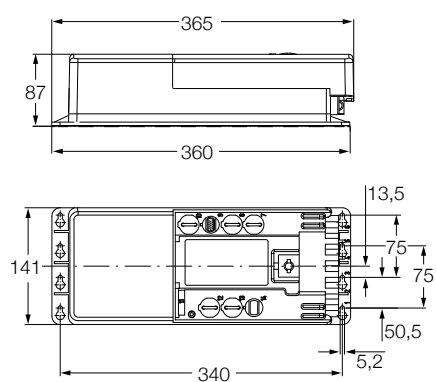
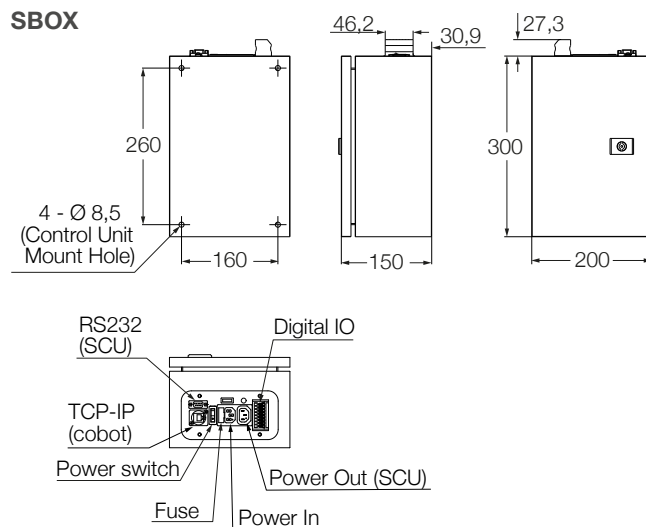
### Bottom mounting plate



Stroke [mm]	500	700	900
Retracted length assembly with plates	580	680	780
Lifting column retracted length without plates	525	625	725

## Dimensional drawing

## Controller

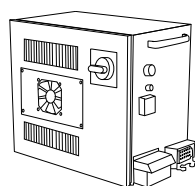
**SBOX**

## Cable management

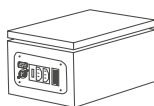
### Threads for cable management attachments



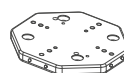
### Connection diagram



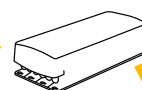
Electrical  
230/120 V AC



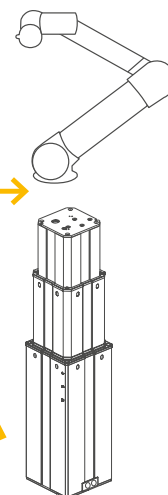
*SBOX*



*Robot attachment plate*



### Controller



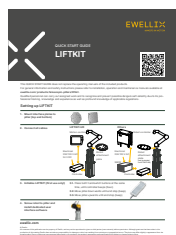


## Scope of delivery LIFTKIT-FA-601 version

The following enumerated parts are delivered and are depicted in **figure 1**:

- 1 Lifting column
- 1 Control unit SCU56/96
- 1 SBOX power cable EU/US/CH/CN
- 1 RS232 interface cable M/0133976
- 1 SCU I/O cable M/0133975
- 1 EHA31 operating handswitch
- 1 FANUC robot attachment plate
- 1 bottom mounting plate
- 8 M10x40 screws for mounting plates
- 4 screws M6x20 for FANUC robot
- 2 pins Ø 8x20 to align FANUC robot
- 1 Quick start guide
- 1 SBOX
- 1 SBOX key
- 1 SBOX I/O safety cable
- 1 SBOX to SCU power cable
- 1 ethernet cable
- SBOX mounting attachments

Figure 1



Quick start guide



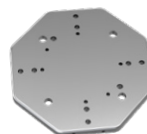
SCU Controller



SBOX



Lifting column



Robot attachment plate



Bottom mounting plate



Handswitch



Fanuc Plug-in included Teach pendant not included



SBOX Key



SBOX safety I/O cable



SBOX power cable



SBOX to controller power cable



Controller I/O cable



RS232 cable



Ethernet cable



## Scope of delivery LIFTKIT-FA-630 version

The following enumerated parts are delivered and are depicted in **figure 2**:

- 3 Lifting column
- 1 Control unit SCU56/96
- 1 SBOX power cable (EU/US/CH/CN)
- 1 RS232 interface cable (M/0133976)
- 1 SCU I/O cable (M/0133975)
- 1 EHA31 operating handswitch
- 1 FANUC robot attachment top plate for CRX-25iA and CRX-30iA
- 3 bottom mounting plates for pillars
- 1 bottom plate for 3 pillars
- 12 M10x3 bolts for mounting the top plate to the pillars
- bolts for the robot top plate
- 4 M10x45 bolts for fixing the bottom plate to the customer base
- 12 M10x40 bolts for mounting the bottom plate to the pillars
- 6 fixation pins for alignment
- 12 washers
- 12 M10x30 bolts for fixing the pillars with already mounted plates to the bottom plate
- 5 shimming plates
- 1 Quick start guide
- 1 SBOX
- 1 SBOX key
- 1 SBOX I/O safety cable
- 1 SBOX to SCU power cable
- 1 ethernet cable
- SBOX mounting attachments

**Figure 2**



## Software functionality

The Ewellix LIFTKIT component allows customers to integrate the LIFTKIT capabilities with FANUC CRX applications.

### Setup & Programming

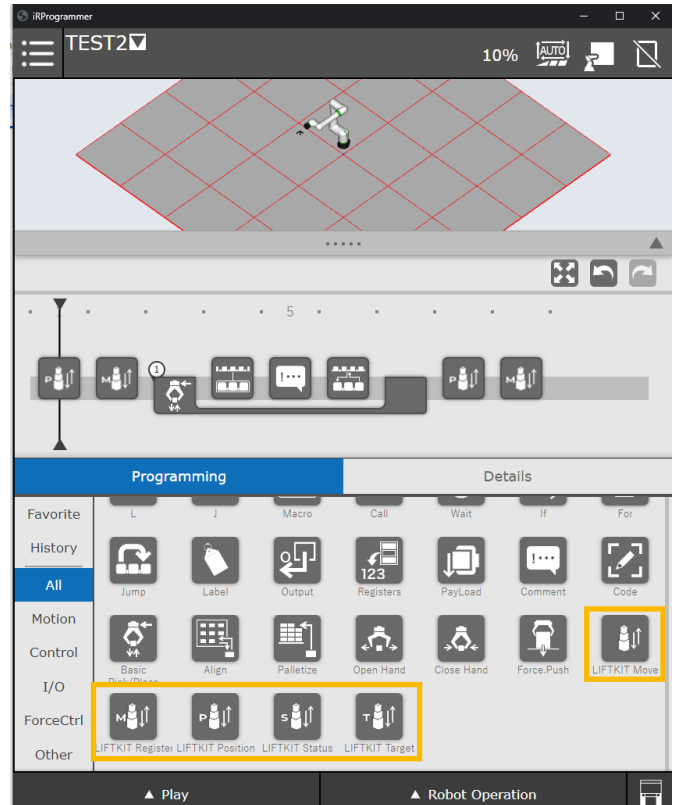
The Ewellix LIFTKIT component allows the set up and control of the LIFTKIT in the FANUC CRX. The component can be inserted multiple times throughout a FANUC CRX project via drag-and-drop to access multiple positions while getting feedback about current position and status.

### Safety elements

The LIFTKIT has a range of safety elements built in to allow its integration into a robot application, including safety relays certified according ISO 13849-1, allowing STO up to PLe, Cat. 4

### Software updates

To download the latest software update please check on [ewellix.com/support/media-library](http://ewellix.com/support/media-library) -> [Software updates](#) -> [LIFTKIT](#).



LIFTKIT software functionalities



## Safety warning

When using the LIFTKIT FA 630 with the CRX-25iA, the robot should be retracted as much as possible while the Telescopic Lift is in motion due to the limitation of an 840 Nm bending moment during motion. This means the TCP (Tool Center Point) of the robot should be positioned at 1 000 mm from the center lifting column during motion only. The robot can be deployed to any position when the lifting column is not moving.

## Ordering key

L I F T K I T - F A - [ ] [ ] [ ] - [ ] [ ] [ ] 0 0 - [ ] [ ] [ ]

### Robot

FA FANUC

### Stroke

	Stroke	Retracted length	Extended length
500 <sup>1)</sup>	500 mm	525 mm <sup>2)</sup>	1 025 mm
600	600 mm	575 mm	1 175 mm
700 <sup>1)</sup>	700 mm	625 mm <sup>2)</sup>	1 325 mm
800	800 mm	675 mm	1 475 mm
900 <sup>1)</sup>	900 mm	725 mm <sup>2)</sup>	1 625 mm
A00	1 000 mm	775 mm	1 775 mm
B00	1 100 mm	825 mm	1 925 mm
C00	1 200 mm	875 mm	2 075 mm
D00	1 300 mm	925 mm	2 225 mm
E00	1 400 mm	975 mm	2 375 mm

### Electrical options

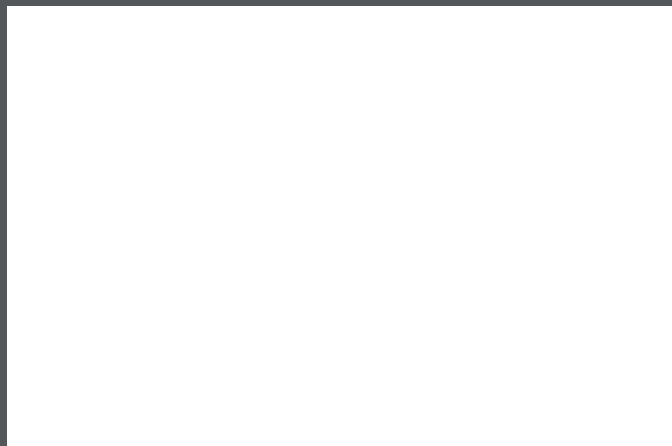
11	120 V AC / US cable
22	230 V AC / EU cable
23	230 V AC / CN cable
24	230 V AC / UK cable
25	230 V AC / CH cable

### Column type

601	for FANUC cobot CRX-5iA, CRX-10iA, CRX-10iA/L, CRX-20iA/L
630	for FANUC cobot CRX-25iA, CRX-30iA

<sup>1)</sup> 630 version is only available in 500, 700, 900 mm stroke; for other stroke please contact Ewellix

<sup>2)</sup> For version 630 add 55 mm for assembly retracted length with plates



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