

FANUC



EWELLIX

EWELLIX linear axis for FANUC cobots

LIFTKIT-FA

Product Data Sheet

We pioneer motion

SCHAEFFLER

1 Benefits for handling and inspection

Schaeffler offers effective solutions for intelligent and complete vertical adjustment with a wide range of ready-to-mount additional linear axis solutions. These have been developed for various applications and thus extend the application range of your robot.

Fully automated pick-and-place solutions are becoming the new standard in packaging stations. A traditional cobot does not have such a large vertical working area. The LIFTKIT can be used to raise or lower the robot base to work in the optimum position. Stacking on pallets starts at floor level, but can be at heights of up to 2 m. The LIFTKIT can increase the efficiency of your packaging station in this scenario. And whenever you need a repetitive operation sequence, such as final inspections, the LIFTKIT guarantees precision and reliability to deliver the best-possible outcome.

2 Product description

Expansion of the working range

- vertical lifting of the cobot by up to 1400 mm with a compact, retracted length
- robust column design for industrial use, vibration-free movement, and virtually maintenance-free operation

Plug-and-play solution

- hardware interface compatible with: CRX-5iA robots, CRX-10iA robots, CRX-10iA/L robots, CRX-20iA/L robots, CRX-25iA robots, CRX-30iA robots
- FANUC-CRX-compatible product
- integrated software control via FANUC-CRX Plug&Play plugin for easy motion programming
- requires the installation of the FANUC R648 socket messaging option

Cost savings and increased productivity

Cobots working in combination with a LIFTKIT offer a cost-effective solution for modernizing an existing assembly hall with a switch from a manual to a fully automated production line.

3 Scope of delivery

3.1 LIFTKIT-FA-601 scope of delivery

The following parts are included in the scope of delivery:

- 1 EWELLIX lifting column TLT
- 1 EWELLIX control unit SCU 56/96
- 1 SBOX mains cable EU/US/CH/CN
- 1 interface cable RS232
- 1 controller I/O cable
- 1 EWELLIX hand switch EHA31
- 1 mounting plate FANUC
- 1 bottom mounting plate
- 8 screws M10×40 for mounting plates
- 4 screws M6×20 for FANUC robots
- 2 pins, dia. 8×20, for aligning the FANUC robot
- 1 quick guide manual
- 1 EWELLIX SBOX
- 1 SBOX key
- 1 SBOX I/O cable
- 1 power cable SBOX to SCU
- 1 Ethernet cable
- SBOX mounting elements

1 LIFTKIT-FA-601 scope of delivery



Quick start guide



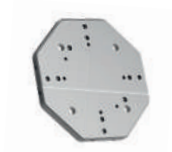
Ewellix-Control unit SCU



Ewellix-SBOX



Ewellix-Lifting column TLT



Attachment plate



Bottom mounting plate



FANUC-Plug-in included
Teach pendant not included



Ewellix-operating
handswitch EHA31



Screws and pins



SBOX Key



SBOX
I/O cable



SBOX power
cable



SBOX to SCU power
cable



SCU
I/O cable



RS232 interface
cable



Ethernet
cable

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3.2 LIFTKIT-FA-630 scope of delivery

The following parts are included in the scope of delivery:

- 3 EWELLIX lifting columns TLT
- 1 EWELLIX control unit SCU 56/96
- 1 SBOX mains cable (EU/US/CH/CN)
- 1 interface cable RS232
- 1 controller I/O cable
- 1 EWELLIX hand switch EHA31
- 1 mounting plate FANUC for CRX-25iA and CRX-30iA
- 3 bottom mounting plates for individual columns
- 1 bottom mounting plate for 3 columns
- 12 screws M10×30 for attaching the top mounting plate to the columns
- Screws for the top mounting plate for the robot
- 4 screws M10×45 for attaching the bottom plate to the customer plate
- 12 screws M10×40 for attaching the bottom plates to the columns
- 4 screws M16×35 for securing the HC20 or HC30 to the top plate
- 6 alignment pins
- 12 washers
- 12 screws M10×30 for attaching the columns to the plates already mounted for the bottom plate
- 5 shims
- 1 quick guide manual
- 1 EWELLIX-SBOX
- 1 SBOX key
- 1 SBOX I/O safety cable
- 1 power cable SBOX to SCU
- 1 Ethernet cable
- SBOX mounting elements

2 LIFTKIT-FA-630 scope of delivery



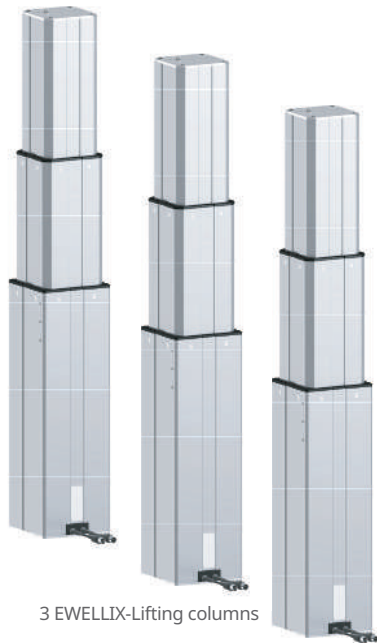
Quick start guide



EWELLIX-SCU Controller



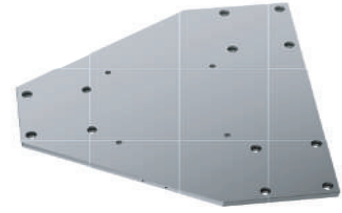
EWELLIX-SBOX



3 EWELLIX-Lifting columns



Shimming plates



Top mounting plate for 3 columns



3 bottom mounting plates



EWELLIX-Handswitch



Bottom mounting plate for 3 columns



SBOX Key



SBOX safety I/O cable



SBOX power cable



SBOX to controller power cable



Controller I/O cable



RS232 cable



Ethernet cable

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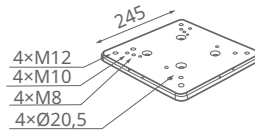
4 Technical data

1 Technical information for the LIFTKIT-FA-601 and LIFTKIT-FA-630

Characteristic	Unit	LIFTKIT-FA-601	LIFTKIT-FA-630
Column type	-	TLT	TLT
Rated push force	N	1500	2500
Rated pull force	N	0	0
Max. dynamic bending moment	Nm	210	1000
Max. static bending moment	Nm	3000	7000
Max. linear speed	mm/s	80	55
Duty cycle of operation	-	10 % (20 % at 500 N)	10 % (20 % at 500 N)
Screw type	-	Lead screw	Lead screw
Strokes	mm	500 to 1400	500 to 900
Retracted length (virtually limited)	mm	Stroke/2 + 275	Stroke/2 + 275
Mass at 0-mm stroke	kg	21	105
Δ mass per 100-mm stroke	kg	1.7	5.1
Compatible robots	-	CRX-5iA, CRX-10iA, CRX-10iA/L, CRX-20iA/L	CRX-25iA, CRX-30iA
Cable management	-	Threads on column and adapter plate for attaching cables	Threads on column and adapter plate for attaching cables
AC voltage	V	120	120
Amperage	A	6.5	6.5
AC voltage	V	230	230
Amperage	A	3.3	3.3
Input frequency	Hz	50 to 60	50 to 60
Input fuse	A	10	10
DC I/O voltage	V	24	24
I/O amperage	A	max. 10, not protected	max. 10, not protected
Emergency stop		Safe Torque Off (STO) up to PLe, Cat. 4	Safe Torque Off (STO) up to PLe, Cat. 4
Control interface	-	FANUC-CRX with R648 socket messaging	FANUC-CRX with R648 socket messaging
Positioning	mm	± 1	± 1
Achievable positions	-	Any	Any
Feedback	-	Position and status	Position and status
Soft start and soft stop	-	Implemented for smooth running	Implemented for smooth running
Software	-	FANUC-CRX plugin	FANUC-CRX plugin
Protection class	-	IP40	IP40
Ambient temperature	°C	+10 to +40	+10 to +40
Max. humidity	%	85	85
Vibration	-	Stationary industrial environment	Stationary industrial environment

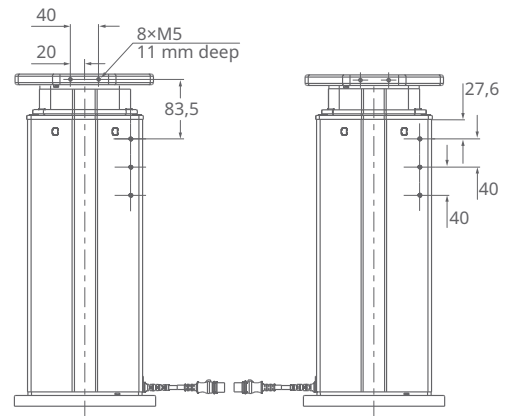
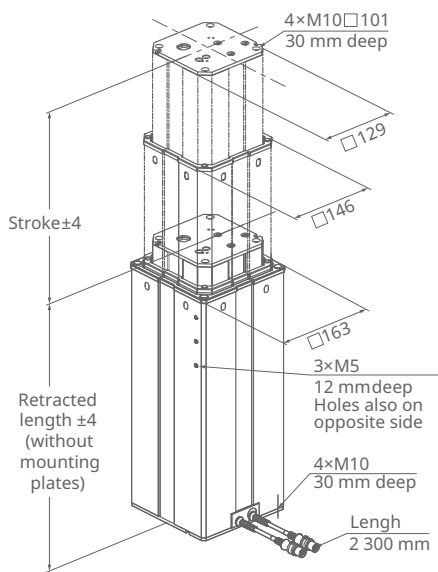
4.1 Dimensional drawing of a LIFTKIT-FA-601, compatible with CRX-5iA, CRX-10iA, CRX-10iA/L, CRX-20iA/L robots

3 Robot fixation plate



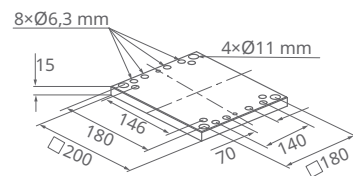
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4 EWELLIX lifting column TLT



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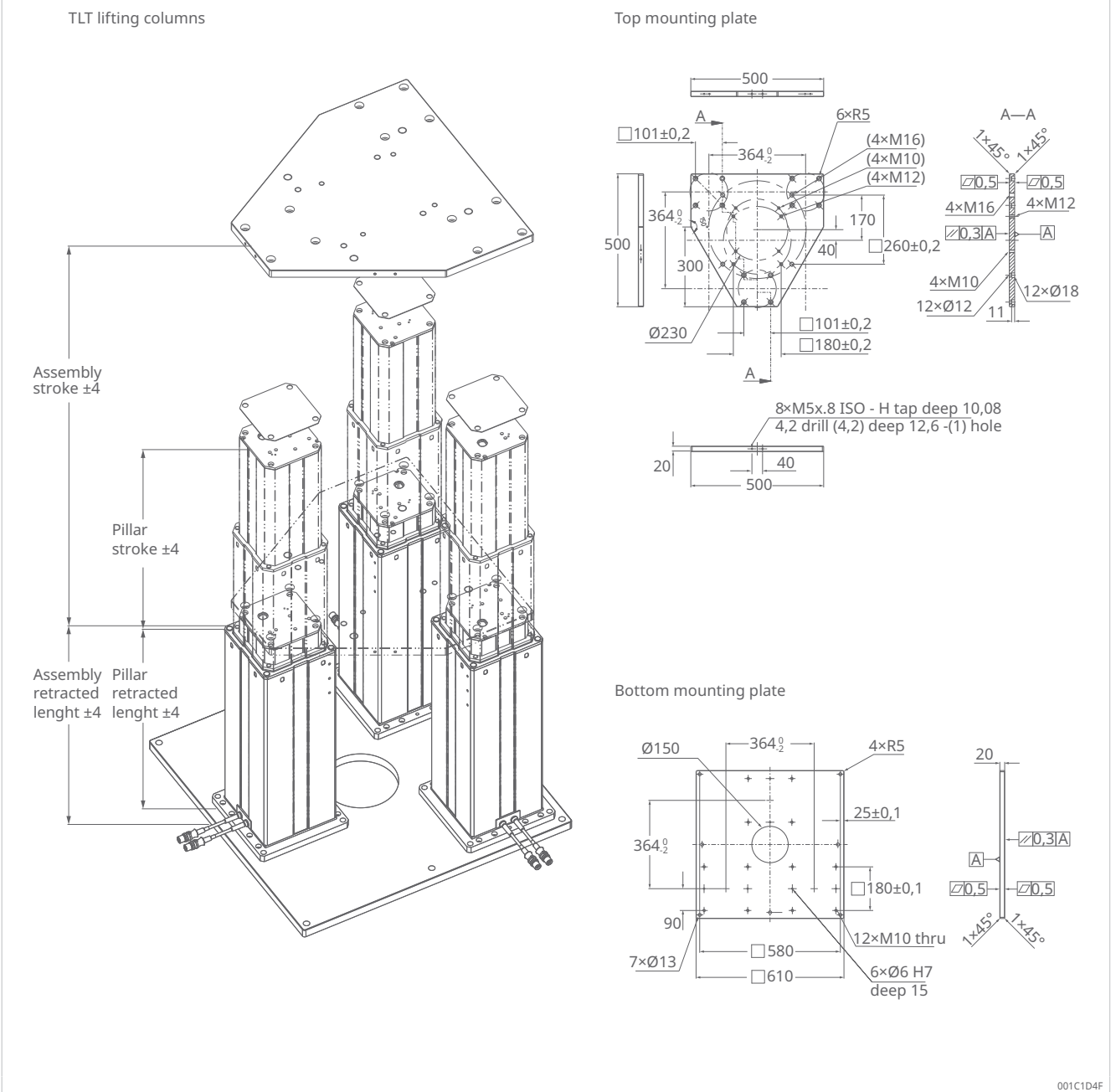
5 Lower fixation plate



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4.2 Dimensional drawing of a LIFTKIT-FA-630, compatible with CRX-25iA and CRX-30iA robots

6 Dimensional drawing of a LIFTKIT-FA-630



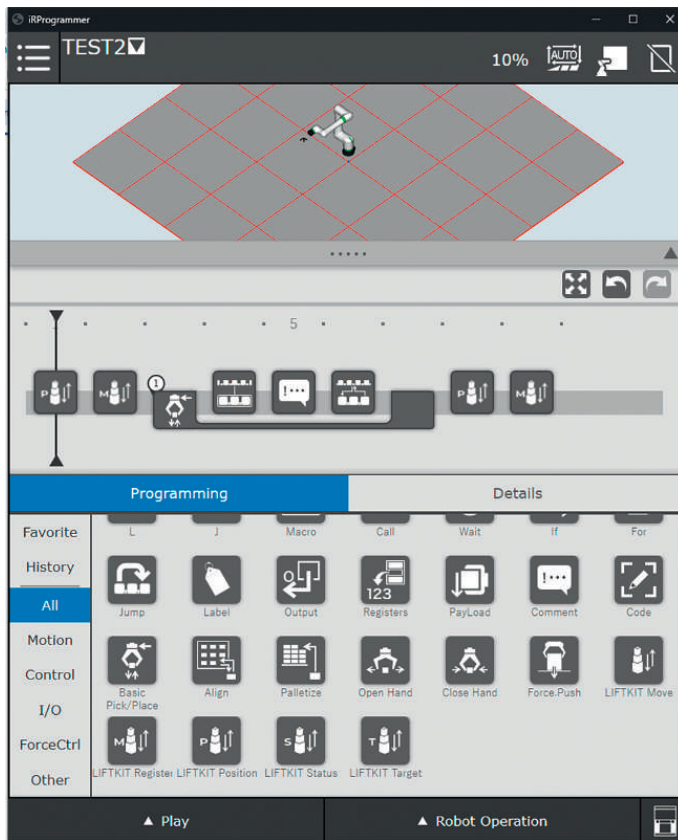
2 Assembly length

Stroke	500 mm	700 mm	900 mm
Assembly with retracted length and plates	580 mm	680 mm	780 mm
Lifting column, retracted length without plates	525 mm	625 mm	725 mm

5 Software functionality

The LIFTKIT component allows customers to integrate the LIFTKIT functions with FANUC-CRX applications.

7 LIFTKIT software functionality



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Design and programming

The LIFTKIT component allows the LIFTKIT to be setup and controlled in FANUC-CRX. The component can be inserted into a FANUC-CRX project multiple times via drag and drop, meaning that different positions can be accessed while receiving feedback on the current positions and status.

Safety elements

The LIFTKIT has a number of safety elements that enable integration into a robot application, including safety relays certified to DIN EN ISO 13849-1, that allow ratings from STO up to PLe, Cat. 4.

Software updates

To download the latest software update, go to <https://www.schaeffler.de/std/226A>.

8 QR code software update for LIFTKIT



6 Safety warning

When using the LIFTKIT-FA-630 with the CRX-25iA, the robot should be retracted as far as possible during the movement, so that the bending moment during the movement is restricted to 840 Nm. This means that the TCP (Tool Center Point) of the robot should only be positioned 1000 mm away from the middle lifting column during the movement. The robot can be extended into any position if the lifting column is not in motion.

7 Ordering key

9 LIFTKIT-FA ordering key

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

Type

Robot

FA FANUC

Stroke

	Stroke	Retracted length	Extended length
500 ¹⁾	500 mm	525 mm ²⁾	1025 mm
600	600 mm	575 mm	1175 mm
700 ¹⁾	700 mm	625 mm ²⁾	1325 mm
800	800 mm	675 mm	1475 mm
900 ¹⁾	900 mm	725 mm ²⁾	1625 mm
A00	1000 mm	775 mm	1775 mm
B00	1100 mm	825 mm	1925 mm
C00	1200 mm	875 mm	2075 mm
D00	1300 mm	925 mm	2225 mm
E00	1400 mm	975 mm	2375 mm

Electrical options

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

Column type

601	For FANUC CRX-5iA, CRX-10iA, CRX-10iA/L, and CRX-20iA/L cobots
630	For FANUC CRX-25iA and CRX-30iA cobots

¹⁾ Version 630 is only available with strokes of 500, 700, or 900 mm; for other strokes, please contact Schaeffler.

²⁾ For version 630, add 55 mm to the retracted length if mounted using the plates.

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