

SOLUCIONES A LA PALETIZACIÓN CON COBOTS:

LIFTKIT Y SLIDEKIT DE EWELLIX



LIFTKIT

Las columnas telescópicas LIFTKIT de Ewellix, representada por ERMEC, dan respuesta a las limitaciones con las que se encuentran los cobots al paletizar. Cuando los palets alcanzan cierta altura, ya no se puede continuar con SU carga. El LIFTKIT, que es fácil de montar, aumenta el alcance del cobot moviéndolo a lo largo de un eje vertical. La base del cobot se puede elevar o bajar durante el paletizado para que siempre esté en una posición de trabajo óptima. Este mayor rango mejora la productividad y reduce los costes.



Ewellix LIFTKIT es un sistema listo para instalar e incluye una columna telescópica con una interfaz de montaje de cobot, un controlador y un plug-in de software para robots compatibles para que los movimientos se puedan programar directamente a través del controlador del cobot. Es 100% compatible con los robots de UR y Omron. Para robots colaborativos no compatibles, la versión LIFTKIT-OS permite controlar la columna a través de una interfaz Ethernet TCP/IP estandarizada. Con un conjunto de comandos es posible conectar el LIFTKIT a prácticamente cualquier tipo de cobot y crear un programa dedicado para realizar la función de elevación.

SLIDEKIT

El eje lineal para robots colaborativos SLIDEKIT 2.0 de Ewellix da respuesta a la necesidad de aplicaciones que requieren cubrir largas distancias para realizar una operación, como el acabado, la soldadura y la inspección de piezas. Especialmente diseñado para robots colaborativos de Universal Robots, al agregar un módulo lineal como base dinámica para el robot, es posible ampliar el área de operación de manejo del robot, aumentando la productividad y la calidad de salida.



El SLIDEKIT 2.0 proporciona una instalación rápida y rápida, al tener una interfaz mecánica, eléctrica y de software estandarizada con UR. En pocos pasos, el sistema está listo para ser utilizado y simplemente programado en funcionamiento. Además, SLIDEKIT también está disponible con una variante de propósito general, utilizando E/S digitales simples para controlar el movimiento, lo que lo hace compatible con otras marcas de cobots.

Los cobots combinados con el módulo lineal SLIDEKIT 2.0 proporcionan una solución rentable capaz de actualizar un taller de ensamblaje pasando de una línea manual a una línea totalmente automatizada. La versión 2.0 del SLIDEKIT ofrece varias mejoras en comparación con la versión anterior, como una mayor reactividad y estabilidad del sistema, menor ruido en funcionamiento y un diseño optimizado para interruptores de límite y puntos de relubricación.

Linear axis for collaborative robots LIFTKIT

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Benefits for handling

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



The main challenge for packaging system manufacturers is to design multi-axis systems in a simple and cost effective way.

A typical application that benefits from an added linear axis is palletizing of boxes. Stacking on pallets can start at floor level, but the stack can be up to 2 m high. A standard collaborative robot does not have such a large vertical working range.

Ewellix provides effective solutions to complete vertical adjustment in a smart way, providing a ready to mount additional linear axis to the robot. While stacking a pallet, the base of the robot can be lifted or lowered to work at a more optimal position.

Heritage of innovation for technology leadership

Ewellix is a global innovator and manufacturer of linear motion and actuation solutions. Today, our state-of-the-art linear solutions are designed to increase machine performance, maximise uptime, reduce maintenance, improve safety and save energy.

Technology leadership

Our journey began **over 50 years** ago as part of the SKF Group, and our history with SKF 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 from SKF 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. Long standing relationships with our distributor partners allow us to support customers in a variety of different industries. At Ewellix, we don't just provide products; **we engineer integrated solutions** that help customers realise their ambitions.



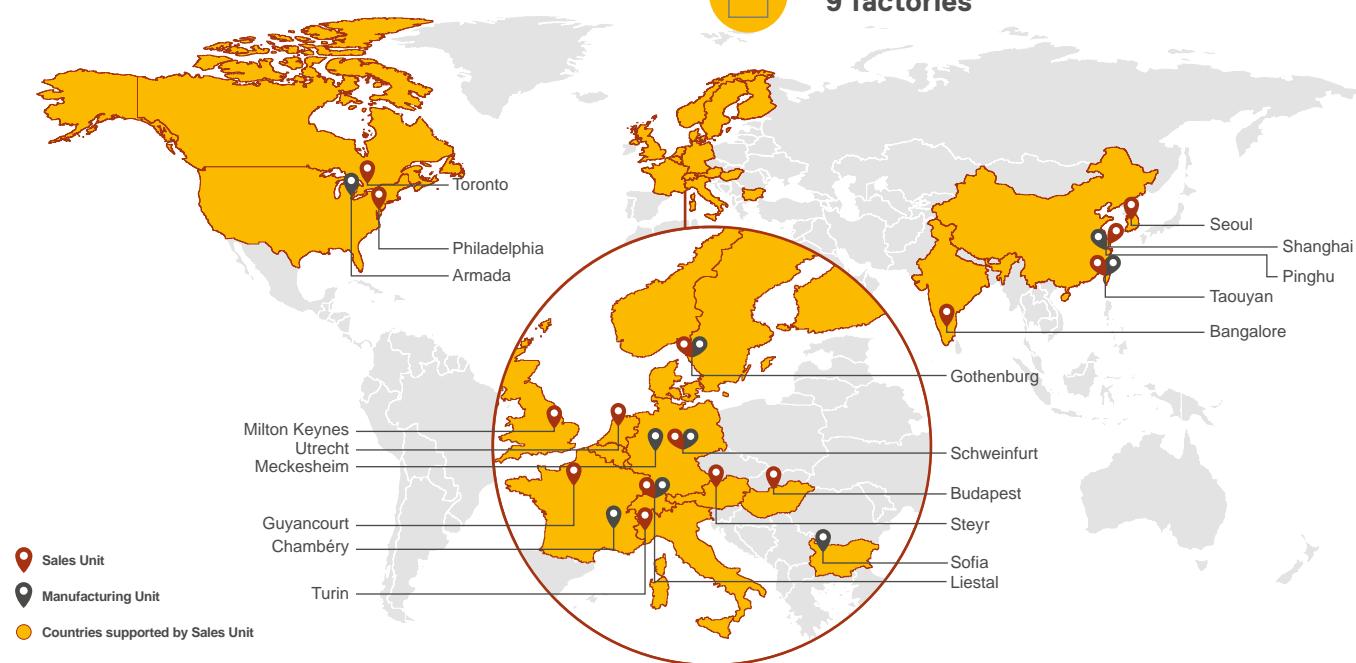
1 200 employees



16 sales units



9 factories



Linear axis for collaborative robots LIFTKIT



Operating range extension

- Vertical lifting of the cobot by up to 900 mm (1.400 mm on request) with compact retracted height
- Robust pillar design for industrial use, vibration free motion and virtually maintenance free

Plug-and-play solution

- Hardware interface compatible with UR3, UR5, UR10 and UR16 robots
- Universal Robots+ certified product
- Software control integrated with UR controller (URCaps) for easy motion programming
- Basic control option with digital I/O for all cobot manufacturers

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.



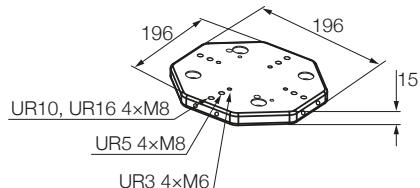
Technical data

	Unit	LIFTKIT-UR-601	LIFTKIT-00-601
Pillar type	-	TLT	TLT
Performance Data			
Max. Push load	N	1 500	1 500
Max. Pull load	N	0	0
Max. dynamic moments		210	210
Max. linear speed	mm/s	80	80
Duty cycle	%	10% (20% at 500N)	10% (20% at 500N)
Mechanical Data			
Screw type	-	Acme screw	Acme screw
Stroke range	mm	500 - 900	500 - 900
Retracted length (software controlled)	mm	Stroke/2 + 275	Stroke/2 + 275
Repeatability(same direction and load)	mm	± 0.5	± 0.5
Weight @ 0 mm stroke	Kg	21	21
Δ weight per 100mm stroke	Kg	1,7	1,7
Robots compatibility	-	UR3, UR5, UR10, UR16, e-Series	Any robot
Cable management	-	Threads on pillar and interface plate to attach cable management	Threads on pillar and interface plate to attach cable management
Electrical			
Voltage/Current	V/A	120 AC / 6,5 A 230 AC / 3,3 A 24 DC / 10 A	120 AC / 6,5 A 230 AC / 3,3 A 24 DC / 10 A
Emergency stop	-	Connection to UR safety I/O	Connection to robot safety I/O
Communication			
Control interface	-	URCaps plugin compatible with CB3.1 / Polyscope 3.6 or higher	Digital I/O control, RS232 interface for external software control (no software provided)
Positioning, repeatability	mm	± 1	± 1
Accessible positions	-	any	2 memory positions programmable
Feedback	-	Position feedback via URCaps	Position feedback for memory positions via output signal
Soft start and stop	-	Implemented for smooth operation	Implemented for smooth operation
Software control	-	URcap	RS232 interface for external software control (no control software provided)
Environment			
Type of protection	IP	40	40
Ambient temperature	°C	+10 to +40	+10 to +40
Max. humidity	%	85	85

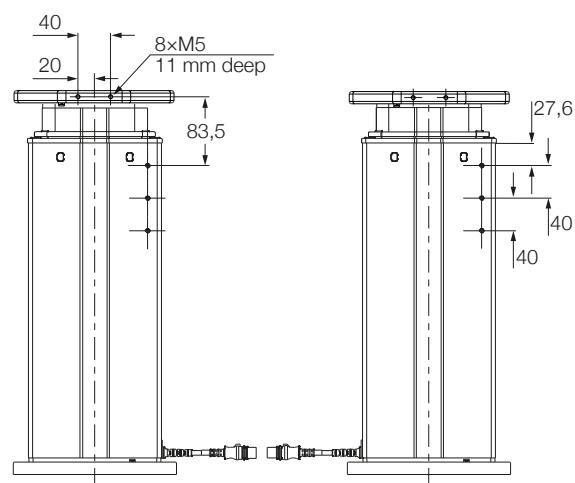
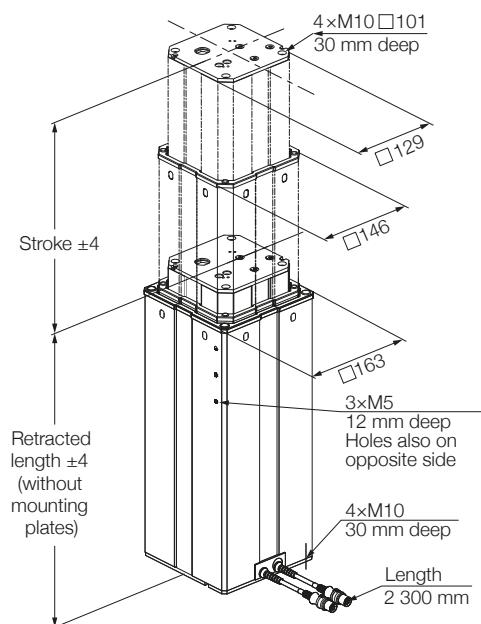
Dimensional drawing

TLT telescopic pillar

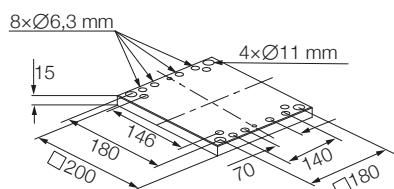
Robot attachment plate



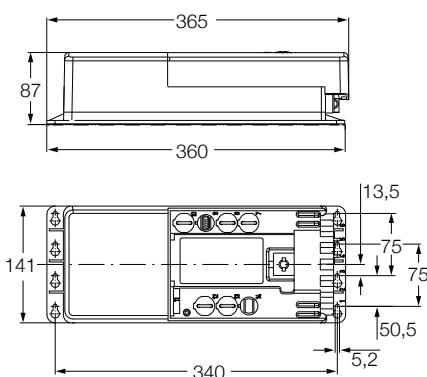
TLT Pillar



Bottom fixation plate

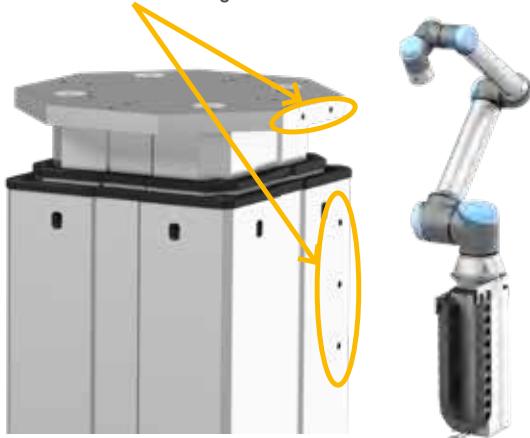


Control unit

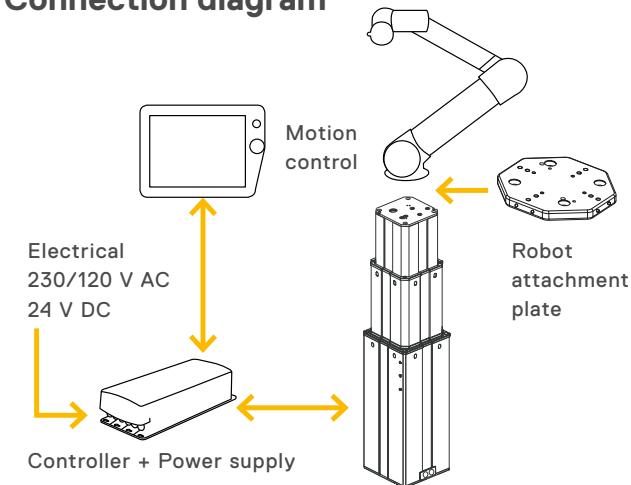


Cable management

Threads for cable management attachments

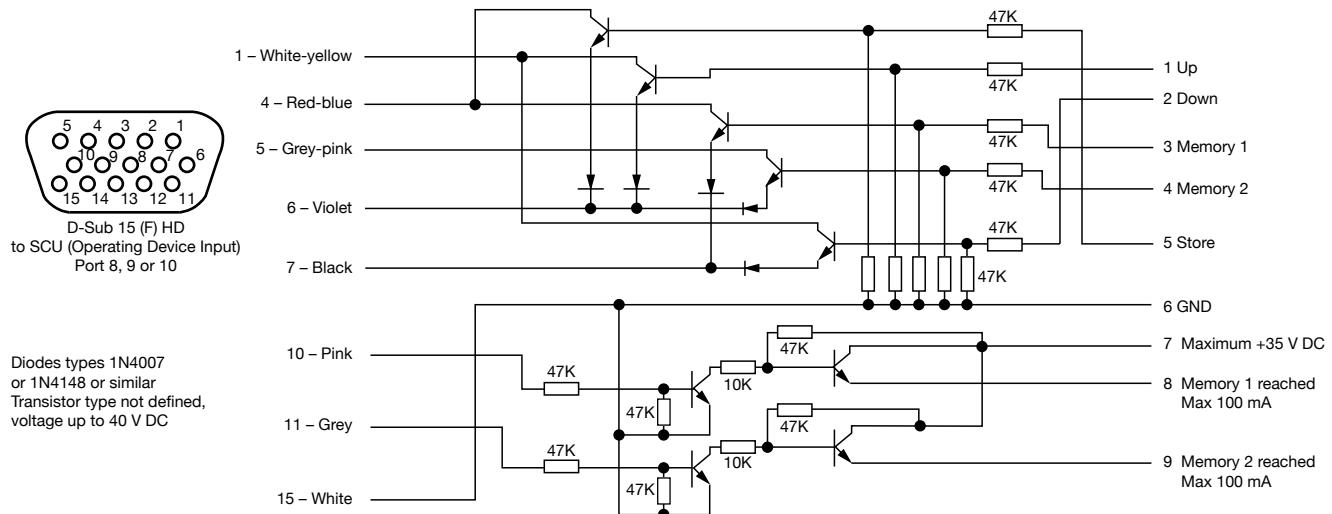


Connection diagram



Example of LIFTKIT-00 interface board to robot PLC (not included)

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LIFTKIT contains



UR software plugin
(not included in LIFTKIT-00)



*Teach pendant not included



Robot attachment plate
(not included in LIFTKIT-00)



Bottom fixation plate



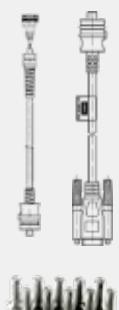
Instruction manual



Controller



Handswitch



Cables and screws

Software functionality

The URCaps software for the LIFTKIT allows easy positioning access directly within the UR Polyscope environment.

Setup

In the installation tab, the user can manually move the linear axis in both directions and define multiple user specific positions, that are accessible in programming mode.

Motion programming

Within the UR motion program, the LIFTKIT axis is easily integrated through a URCaps command module. Simply insert this element from the structure tab at the desired position of the program. Additionally, reading and setting positions is possible through a script function.

Safety elements

The LIFTKIT has a range of safety elements built in to allow its integration into a robot application.

Software updates

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

NOTE:

The LIFTKIT is not a functional safety system compliant with EN ISO 13489-1 or IEC 62061. To integrate the LIFTKIT into a functional safety chain, external safety devices have to be integrated into the overall system.

Ordering key

Robot

00	Any robot (no software, no robot interface plate)
UR	Universal Robots

Stroke*

500	mm
600	mm
700	mm
800	mm
900	mm

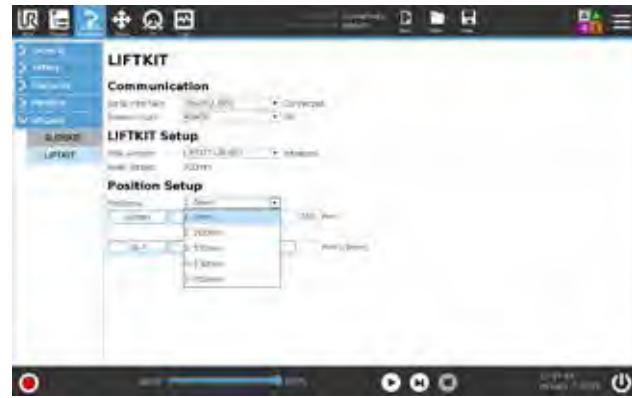
Electrical options

00	24 V DC
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

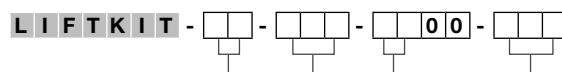
Pillar type

601	TLT
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* longer stroke up to 1 400 mm available on request



LIFTKIT software functionality



Linear axis for collaborative robots SLIDEKIT 2.0



Linear axis for collaborative robots SLIDEKIT 2.0



Operating range extension

By adding a linear module as a dynamic base for the robot, it is possible to extend the handling operating area of the robot, increasing the productivity of a series of machines working in the same production flow.

Plug-and-play solution

The SLIDEKIT 2.0 provides quick and fast installation, by having a standardized mechanical, electrical and software

interface with Universal Robots. In few steps, the system is ready to be used and simply programmed in operation.

Cost savings and higher productivity

UR cobots combined with the SLIDEKIT 2.0 linear module provide a cost-effective solution to upgrade an existing assembly shop, moving from a manual handled to a fully automatized line.

Improved performances

The 2.0 release of the SLIDEKIT delivers several improvements compared to the former version, like higher system reactivity and stability, lower noise in operation and optimized design for limit switches and re-lubrication points

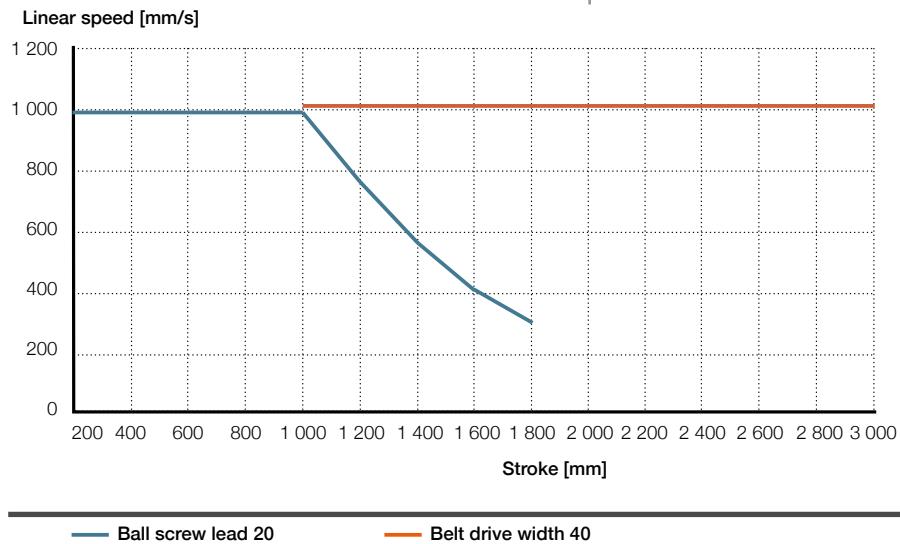


Technical data

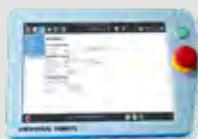
Designation	Unit	SLIDEKIT-UR-Ball screw version	SLIDEKIT-00-Ball screw version	SLIDEKIT-UR-Belt drive version
Linear module type	-	CLSM-150	CLSM-150	CLSM-150
Performance Data				
Max. dynamic payload	N	10 900	10 900	10 900
Max. static load capacity	N	12 100	12 100	12 100
Max. belt tension	N	-	-	960
Max. belt thrust	N	-	-	4 500
Max. dynamic moments Mx	Nm	2 400	2 400	2 400
Max. dynamic moments Mz	Nm	1 800	1 800	1 800
Max. linear speed	mm/s	See graph page 6	See graph page 6	See graph page 6
Duty cycle	%	100	100	100
Mechanical Data				
Drive type	-	Ball screw	Ball screw	Belt drive
Stroke range	mm	100 - 1 800	100 - 1 800	1 900 - 3 000
Repeatability	mm	± 0.01	± 0.01	± 0.08
Weight @ 0 mm stroke	Kg	15	15	17
Δ weight per 100mm stroke	Kg	1,6	1,6	1,4
Robots compatibility	-	UR3, UR5, UR10, UR16, e-Series	Any robot	UR3, UR5, UR10, UR16, e-Series
Cable management	-	Cableveyor	Cableveyor	Cableveyor
Electrical				
Voltage/Current	V/A	115 VAC / 4.8 A 230 VAC / 2.4 A 24 DC / 20 A	115 VAC / 4.8 A 230 VAC / 2.4 A 24 DC / 20 A	115 VAC / 4.8 A 230 VAC / 2.4 A 24 DC / 20 A
Emergency stop	-	Connection to UR safety I/O	Connection to Robot safety I/O	Connection to UR safety I/O
Communication				
Control interface	-	URCaps plugin compatible with CB3.1 / Polyscope 3.6 or higher	Digital I/O control, CAN interface for external software control ¹⁾	URCaps plugin compatible with CB3.1 / Polyscope 3.6 or higher
Positioning, repeatability	mm	± 0.1	± 0.1	± 0.1
Accessible positions	-	any	14 memory positions programmable	any
Feedback	-	Position feedback via URCaps	Position feedback via output signal	Position feedback via URCaps
Soft start and stop	-	Implemented for smooth operation	Implemented for smooth operation	Implemented for smooth operation
Software control	-	URcap	CAN interface for external software control ¹⁾	URcap
Environment				
Type of protection	IP	Controll box = IP64 SlideKit =N/A	Controll box = IP64 SlideKit =N/A	Controll box = IP64 SlideKit =N/A
Ambient temperature	°C	0 to +50	0 to +50	0 to +50
Max. humidity	%	95	95	95

¹⁾ No software provided / The software can be downloaded from the Dunker motor website

Performance diagrams



SLIDEKIT 2.0 contains



*Teach pendant not included



*Robot attachment plate
(The taps are only provided for
Universal Robots cobot as standard)*



*UR software plugin
(not included in SLIDEKIT-00)*



Control unit



CLSM Linear module



CAN



D-SUB 9Pin



Digital IO



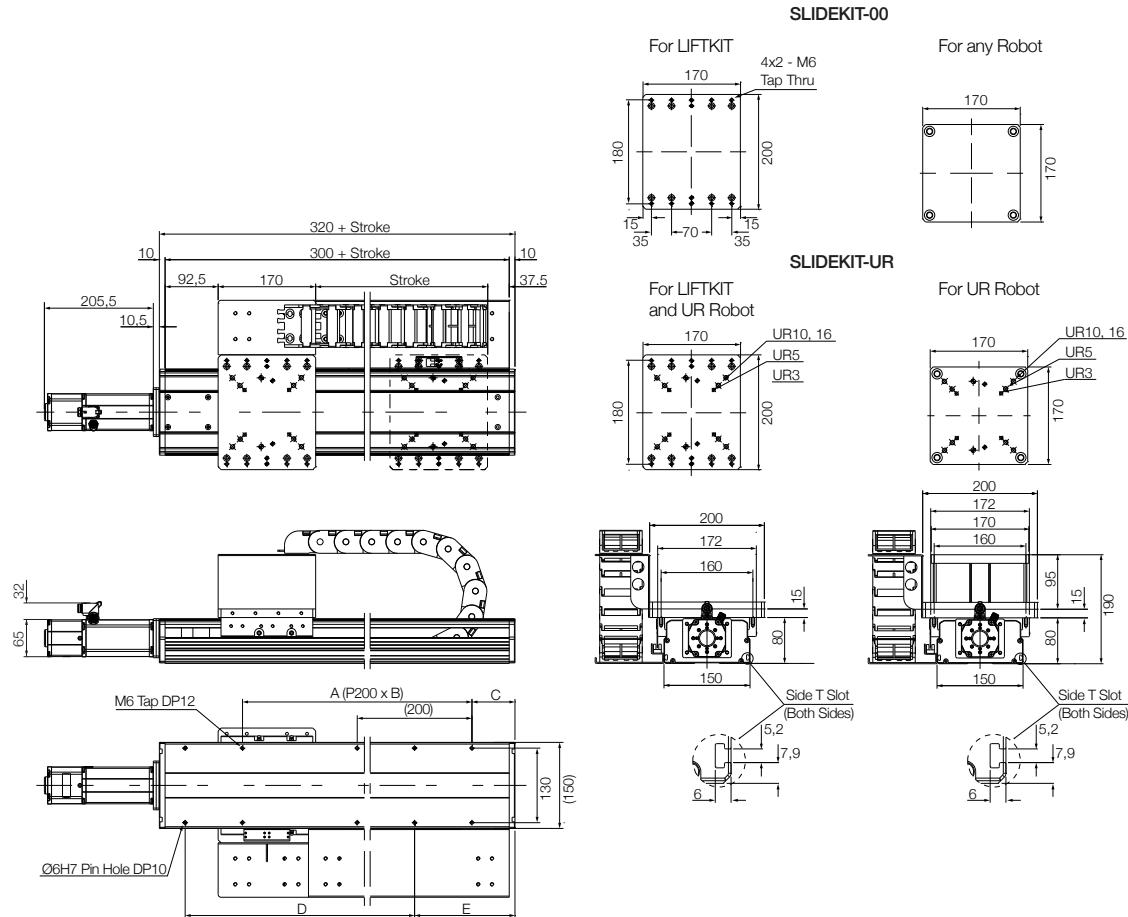
Motor Power



Proximity Switch

Dimensional drawing

Ball Screw version



	Stroke	A	B	C	D	E
	mm					
1	100	200	1	75	200	175
2	200	400	2	25		125
3	300	400	2	75	400	175
4	400	600	3	25		125
5	500	600	3	75	600	175
6	600	800	4	25		125
7	700	800	4	75	800	175
8	800	1 000	5	25		125
9	900	1 000	5	75	1 000	175
10	1 000	1 200	6	25	125	
11	1 100	1 200	6	75	1 200	175
12	1 200	1 400	7	25		125
13	1 300	1 400	7	75	1 400	175
14	1 400	1 600	8	25		125
15	1 500	1 600	8	75	1 600	175
16	1 600	1 800	9	25		125
17	1 700	1 800	9	75	1 800	175
18	1 800	2 000	10	25	125	

■ Standard stroke

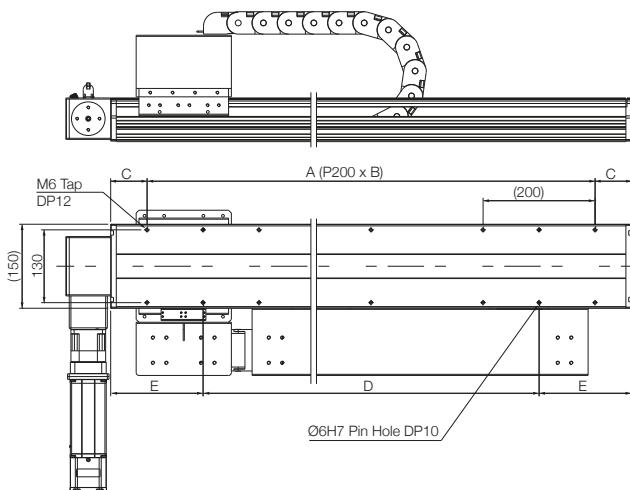
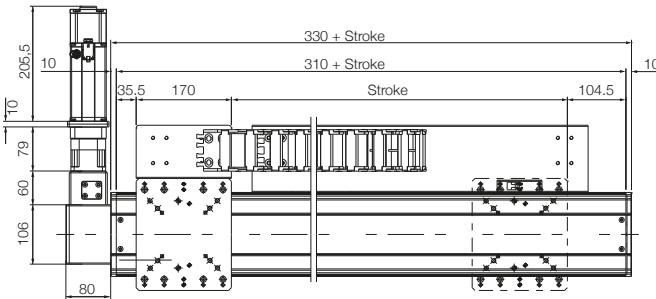
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Belt version

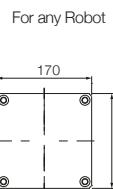
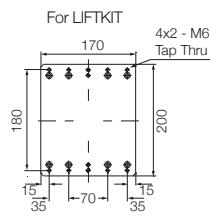


	Stroke	A	B	C	D	E
	mm					
10	1000	1200	6	65	1000	165
11	1100	1200	6	115	1000	215
12	1200	1400	7	65	1200	165
13	1300	1400	7	115	1200	215
14	1400	1600	8	65	1400	165
15	1500	1600	8	115	1400	215
16	1600	1800	9	65	1600	165
17	1700	1800	9	115	1600	215
18	1800	2000	10	65	1800	165
19	1900	2000	10	115	1800	215
20	2000	2200	11	65	2000	165
21	2100	2200	11	115	2000	215
22	2200	2400	12	65	2200	165
23	2300	2400	12	115	2200	215
24	2400	2600	13	65	2400	165
25	2500	2600	13	115	2400	215
26	2600	2800	14	65	2600	165
27	2700	2800	14	115	2600	215
28	2800	3000	15	65	2800	165
29	2900	3000	15	115	2800	215
30	3000	3200	16	65	3000	165

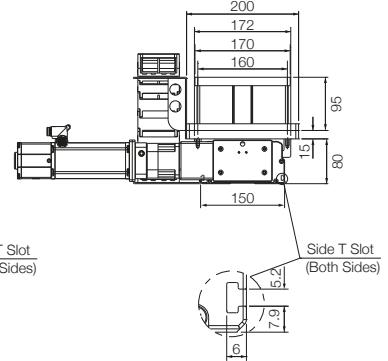
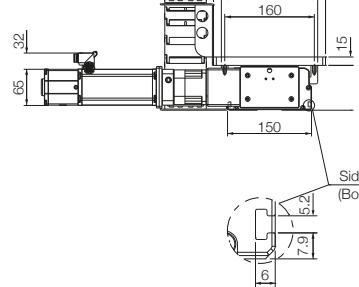
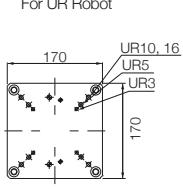
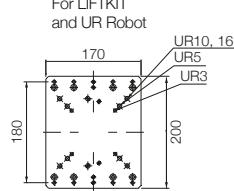
Standard stroke



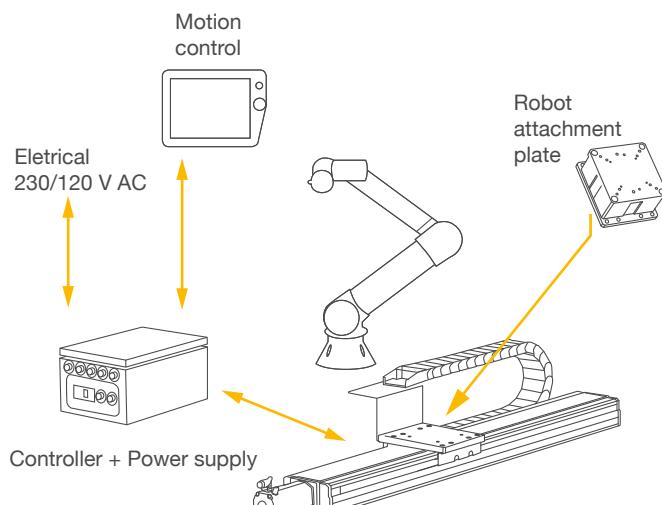
SLIDEKIT-00



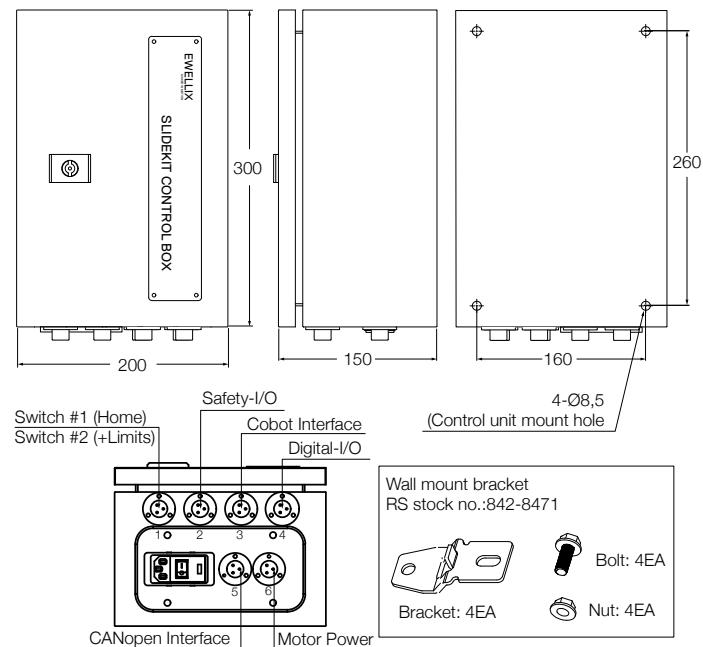
SLIDEKIT-UR



Connection diagram



Control unit



Software functionality

The URCaps software for the SLIDEKIT 2.0 allows easy positioning access directly within the UR Polyscope environment.

Setup

In the installation tab, the user can manually move the linear axis in both directions and define multiple user specific positions, that are accessible in programming mode.

Motion programming

Within the UR motion program, the SLIDEKIT 2.0 axis is easily integrated through a URCaps command module. Simply insert this element from the structure tab at the desired position of the program. Additionally, reading and setting positions is possible through a script function.

Software updates

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

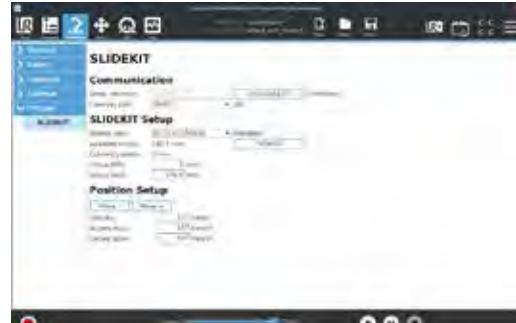
Safety elements

The SLIDEKIT 2.0 has a range of safety elements built in to allow its integration into a robot application.

It's equipped with 2 safety relays, certified ISO 13849-1.

NOTE:

The SLIDEKIT 2.0 is not a functional safety system compliant with EN ISO 13489-1 or IEC 62061. To integrate the SLIDEKIT 2.0 into a functional safety chain, external safety devices have to be integrated into the overall system.



SLIDEKIT 2.0 software functionality

Ordering key

SLIDEKIT - UR - [] - [] - [] - SLM - S00

Robot _____

- 00 Any robot (no software)
UR Universal Robot

Module options

Drive _____

- B20 Ball screw (lead 20)
P40 Belt (width 40)
E Cover Aluminum and External motor attachment _____

Stroke _____

- 100 ... 3000
1 000 Preferred range Ball screw
1 800 Preferred range Ball screw
2 500 Preferred range Belt
3 000 Preferred range Belt

Electrical options _____

- 11 120 VAC / US cable
22 230 VAC / EU cable
23 230 VAC / CN cable
24 230 VAC / UK cable
25 230 VAC / CH cable

Accessories options _____

- S Limit switch _____

Cableveyor _____

- C Compact
L Large
M Standard hole pattern _____

Customized options _____

- S Option 1 - Safety relay

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