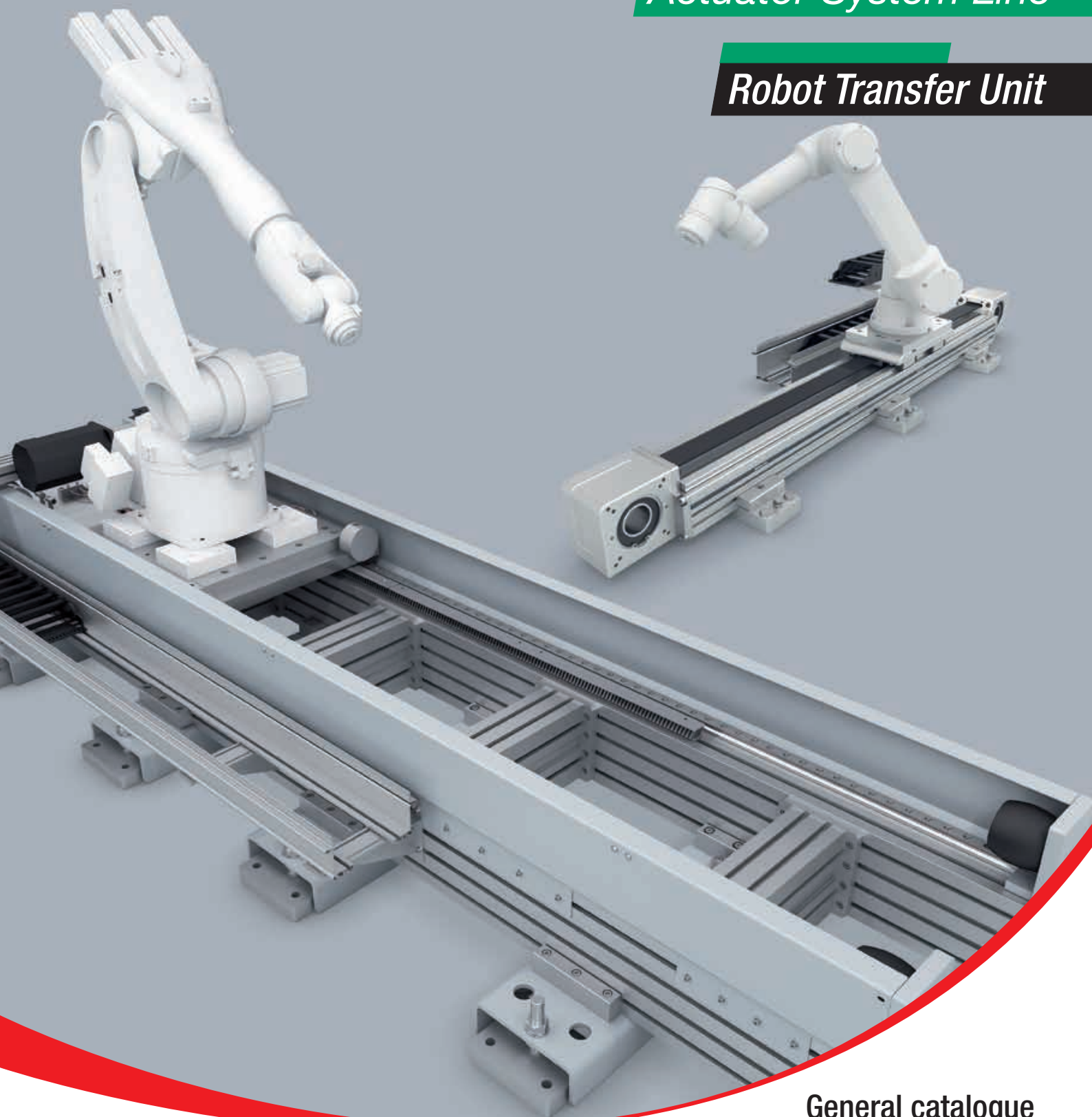


ROLLON[®]
BY TIMKEN

Actuator System Line

Robot Transfer Unit



General catalogue
English

Interactive catalogs
on: www.rollon.com



Robot Transfer Unit

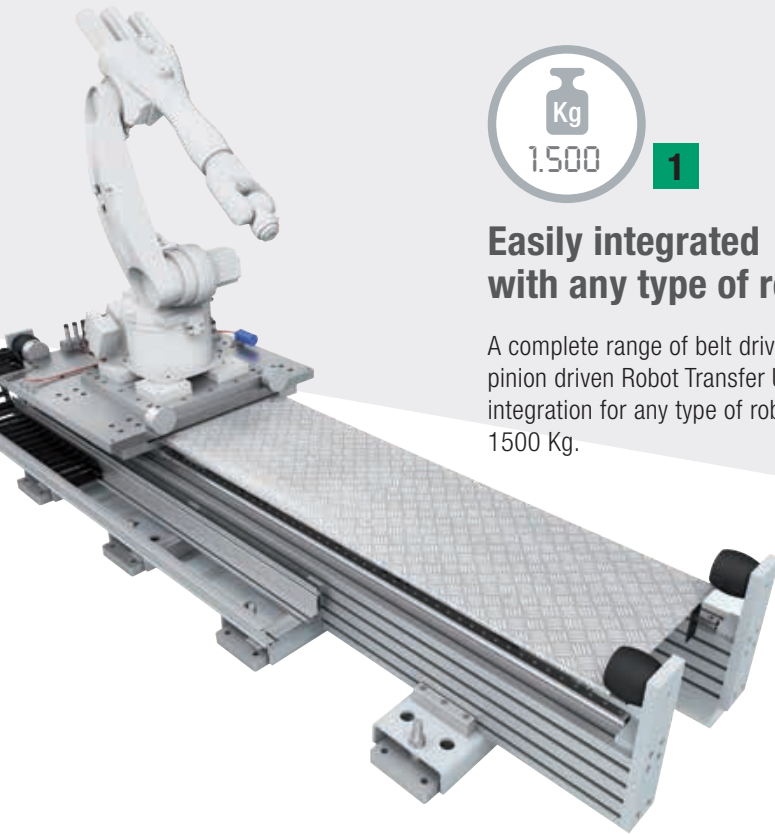
Improve your robots' productivity by extending their operating range. Robot Transfer Unit (RTU) can move any type of robot weighing up to 1500 kg over long distances with a high range of dynamics. Discover the **8 main advantages**.



1

Easily integrated with any type of robot

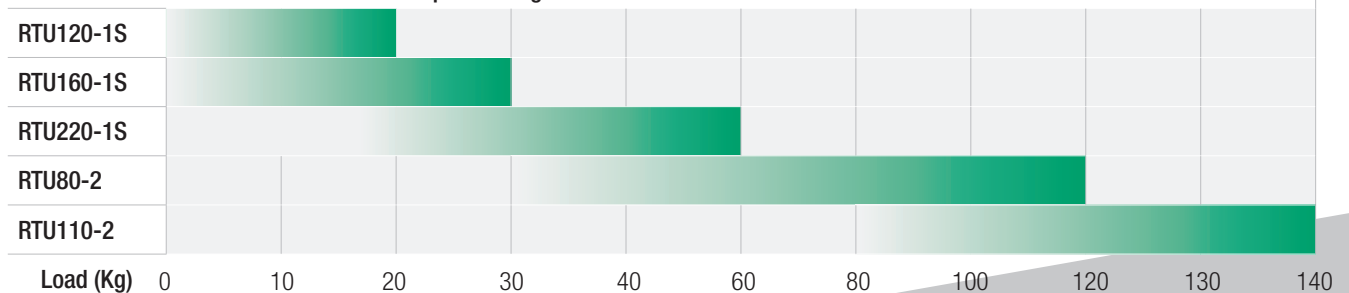
A complete range of belt driven and rack and pinion driven Robot Transfer Unit guarantees simple integration for any type of robot, weighing up to 1500 Kg.



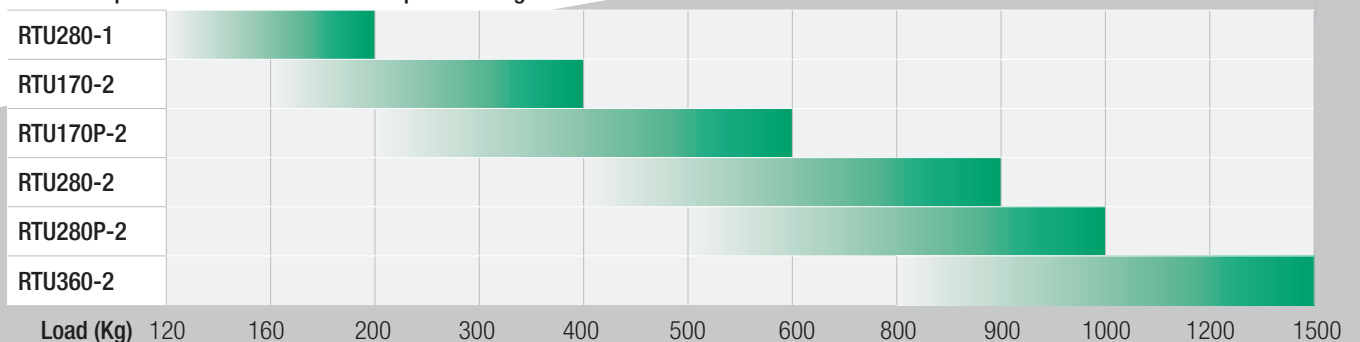
LOAD CAPACITY ACCORDING TO DYNAMICS

Reported data must be verified according to the application. For more information, please contact our technical department.

Belt driven Robot Transfer Unit for robots up to 140 kg














Rack and pinion driven RTU for robots up to 1500 kg



Lower load - Higher dynamics Higher load - Lower dynamics

ROBOT EXAMPLES ACCORDING TO DIFFERENT SIZES

Robot examples mentioned are indicative and refer to floor mounted version. For a correct choice and sizing of the axis please contact our technical department.

Robot Transfer Unit		Robot examples			
Series	Driving System	Brand	Model	Payload [Kg]	Weight [Kg]
RTU120-1S		DENSO	VP-6242	2.5	15
		UNIVERSAL ROBOTS	UR3	3	11
RTU160-1S		ABB	IRB 1100 ; IRB 120	3-4	21-25
		DOOSAN	M0609	6	17
		EPSON	Prosix C3	3	27
		KASSOW ROBOTS	KR810; KR1205	3-10	23.5-25
		KAWASAKI	RS03N; MC004N	3-4	20-25
		KUKA	KR 3 R540; LBR iiwa 7 R800; LBR iiwa 7 R820	3-14	22-29
		NACHI	Nachi MZ04; Nachi MZ07	4-7	26-30
		OMRON	TM5-700; TM5-900	4-6	21.8-22.6
		STÄUBLI	TX2-40	2	29
		UNIVERSAL ROBOTS	UR5	5	21
RTU220-1S		YASKAWA	MH3F	3	27
		COMAU	Racer-5-0.63; Racer-5-0.80; Racer-3-0.63;	3-5	30-32
		DOOSAN	M0617; M1013; M1509	6-15	24-32
		FANUC	CR-4ia; CR-7ia; CRX-10ia; CR-14ia/L; LR Mate 200id; LR Mate 200id/4S; LR Mate 200id/14L	4-14	17-53
		KASSOW ROBOTS	KR1018	18	34
		KUKA	KR 6 R700-2; KR 6 R900-2; KR 10 R1100-2	6-10	53-55
		NACHI	Nachi MZ03EL	10	47
		STÄUBLI	TX2-60	4.5	51
		UNIVERSAL ROBOTS	UR10; UR10e; UR16e	10-16	31.5-33.5
		YASKAWA	HC10; GP7; GP8	7-10	32-47
RTU80-2		KASSOW ROBOTS	KR1410; KR1805	5-10	35-38
		KAWASAKI	RS003N; RS005N; RS005L; RS007N; RS007L	3-7	20-37
		KUKA	Agilus Serie KR3; KR6; KR10	3-10	26-57
		MITSUBISHI	RV-2FR; RV-2FRL; RV-4FR; RV-4FRL; RV-7FR; RV-7FRL; RV-7FRL	3-7	19-130
		NACHI	MZ07-01; MZ07L-01; MZ07P-01; MZ07LP-01;	7	30-32
		STÄUBLI	TX2-40; TX2-60; TX2-60L	2-4.5	29-53
		UNIVERSAL ROBOTS	UR3/3e; UR5/5e; UR10/10e; UR16e	3-16	11-34
RTU110-2		YASKAWA	GP7; GP8	7-8	32-34
		ABB	IRB 1300; IRB 1300; IRB 1300; IRB 140	7-11	74.5-78.5
		DENSO	VP-6083	6	82
		MITSUBISHI	RV-13F; RV-20F	13-20	120-137
		STÄUBLI	TX2-90	7	111
RTU280-1		YASKAWA	SIA20D	20	120
		COMAU	Racer-7-1.0; Racer-7-1.4; SIX-6-1.4	6-7	160-180
		FANUC	ARC Mate 100iC/12; M-10iA/10M; M-10iA/12; M-10iD 12	10-12	130-145
		KAWASAKI	RS010N; RS006L	6-10	150
		KUKA	KR6 – KR10 CYBERTECH nano; KR6 – KR8 CYBERTECH ARC nano	6-10	145-180
		MITSUBISHI	RV13FR(-L); RV20FR	13-20	120-130
		NACHI	NB04; NV06;	10	160-170
RTU170-2		STÄUBLI	TP80; TX2-90; TX2-90L; TX2-90XL	7-14	111-119
		YASKAWA	MH12/-F; GP12	12	130-150
		ABB	IRB 1600; IRB 1660ID; IRB 2600-12/-20; IRB 2600ID-8/-15;	4-20	250-284
		FANUC	M-20iA; M-20iA/20M; ARC Mate 120C; M-20iB/25; M-20iB/25C; M-20iA/35M	20-25	210-250
		KAWASAKI	RS020N; RS010L	10-20	230
		KUKA	KR CYBERTECH / KR CYBERTECH arc	8-22	250-270
RTU170P-2		NACHI	MC10L; MC20; MR20-02; MR20L-01; NB04L; NV06L	10-20	220-280
		STÄUBLI	RX160; RX160HD; RX160L;	14-20	248-250
		YASKAWA	GP25; GP25-12; HP20F/-RD 2	12-25	250-268
		ABB	IRB 2400; IRB 4600; IRB 6620LX;	10-150	380-610
		COMAU	NS-12-1.85; NS-16-1.65; NJ-16-3.1; NJ-40-2.5; NJ-60-2.2	12-60	333-680
RTU280-2		FANUC	M-710 all types	12-70	410-570
		KAWASAKI	RS030N; RS050N; RS080N; RS15X	30-80	555
		NACHI	MC35-01; MC50-01; MC70-01	35-70	640
		KUKA	KR 30 and KR 60 - all types	16-60	600-700
RTU280P-2		ABB	IRB460	110	925
		COMAU	NJ130 2.6	130	1050
		FANUC	R2000 100FH, 125L, 165F, 165FH, 165R	100-165	1090-1360
		KUKA	KR 120, 150, 180	120-180	677-1093
RTU360-2		STÄUBLI	TX200L	80	1000
		FANUC	M900ib/360; R2000ic/210L; R2000ic/270F	210-360	1320-1540
		KUKA	KR 210, 240, 270, 300	210-300	1068-1154

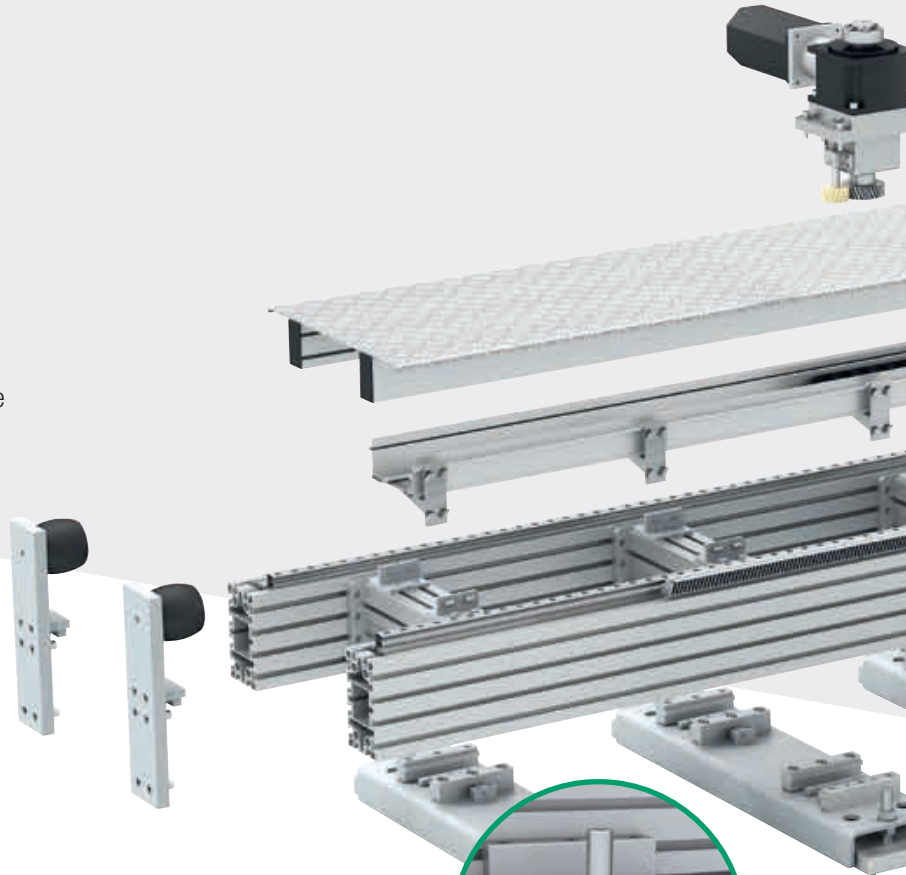
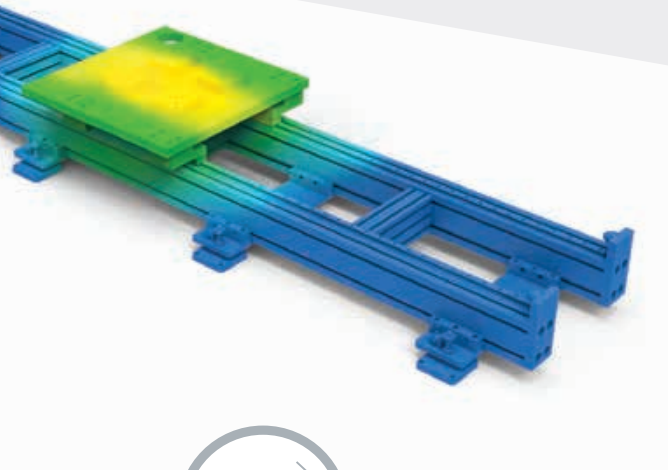


2

High stiffness with low weight

The highly engineered combination of rails, steel connecting crosspieces, and aluminum profiles extruded with elaborate geometries, allows high stiffness and low weight.

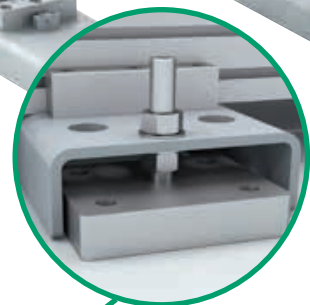
Thanks to its lightness and strength, RTU operates smoothly even in applications that require wall or ceiling mounting.



3

Simplified mounting and alignment

Due to adjustable levelling systems integrated into the rigid, factory-aligned cross-members.



4

Potentially infinite strokes

Rack and pinion driven sizes can reach potentially infinite strokes thanks to jointable, self-centring inserts.

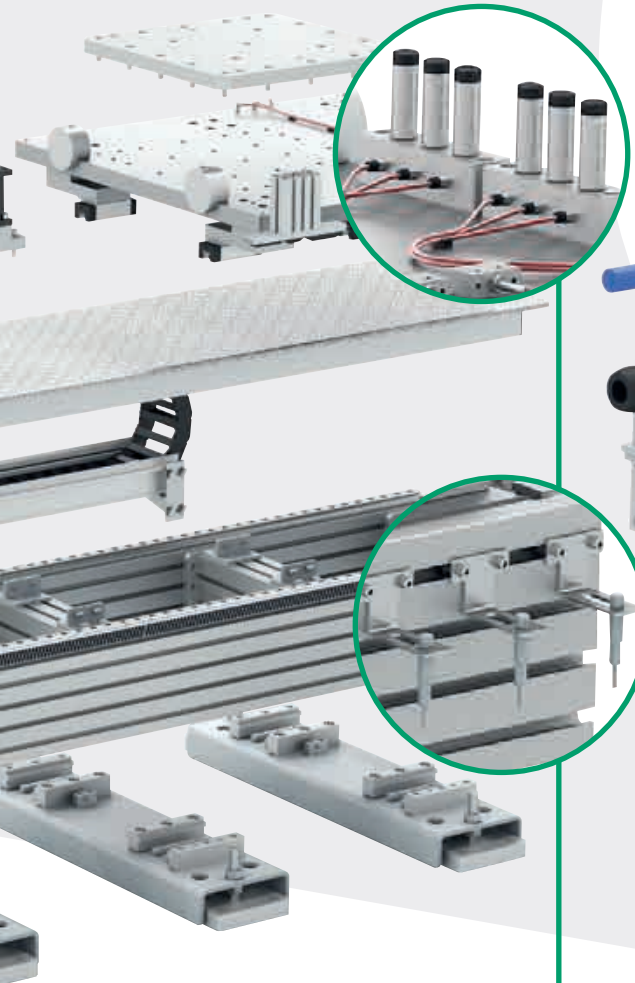


5

Protection for every work environment

Different protection options are available according to the size of RTU, to make it reliable in dirty environments:

- Belt driven RTU can feature a polyurethane sealing strip to protect the internal components.
- Rack and pinion driven RTU can be configured with three types of cover: simple, partial or total.



The best-performing series PLUS

Featuring larger linear rails to move larger robots with the same axis size, saving space on the factory layout.



6

High quality components

Designed with carefully selected high quality components: hardened racks with helical teeth, rails with recirculating rollers and planetary or hypoid bevel gearboxes.



7

Full range of accessories

Ready to use solution supplied with standard cable carrier, gearbox and lubrication systems.

Optionals available for the most demanding applications, like heavy duty cable carrier, proximity sensor holders and cams and programmable lubrication system.



8

Reliability backed by our experience

Robot Transfer Unit was created from 40 years of expertise in designing and producing linear motion systems.

Robot Transfer Unit

Technical Features



Reference		Linear guides		Drive		Anticorrosion option available	Protection	
Family	Product	Rollers	Balls	Rack	Belt		Sealing Strip	Simple
Robot Transfer Unit	RTU120-1S							✓
	RTU160-1S							✓
	RTU220-1S							✓
	RTU80-2						✓	
	RTU110-2						✓	
	RTU280-1							✓
	RTU170-2							✓
	RTU170P-2 							✓
	RTU280-2							✓
	RTU280P-2 							✓
	RTU360-2							✓

The data shown must be verified on the basis of the application.

*1 The total repeatability of the system depends on the gearbox. If the gearbox is ordered with the axis, our Technical Department can provide the total precision value.

		Size	Number of profiles	Maximum speed [m/s]	Maximum acceleration [m/s ²]	Repeatability [mm]	Maximum stroke [mm]
Partial	Total						
		120x65	1	2	4	± 0.05 ¹	6000
		160x90	1	2	4	± 0.05 ¹	6000
		220x100	1	2	4	± 0.05 ¹	5750
		80x80	2	2	4	± 0.05	5750
		110x110	2	2	4	± 0.05	5750
		170x280	1	2	4	± 0.05	∞
√	√	170x120	2	2	4	± 0.05	∞
√	√	170x120	2	2	4	± 0.05	∞
√	√	280x170	2	2	2	± 0.05	∞
√	√	280x170	2	2	2	± 0.05	∞
√	√	360x200	2	2	2	± 0.05	∞

> Robot Transfer Unit



Technical features

1 RTU series - Belt driven

Robot Transfer Unit for robots up to 140 Kg	RU-2
The components, The linear motion system	RU-3
RTU 120-1S	RU-4
RTU 160-1S	RU-6
RTU 220-1S	RU-8
RTU 80-2	RU-10
RTU 110-2	RU-12

2 RTU series - Rack and pinion driven

Robot Transfer Unit for robots up to 1500 Kg	RU-14
The components, The linear motion system	RU-15
RTU 280-1	RU-16
RTU 170-2	RU-18
RTU 170P-2	RU-20
RTU 280-2	RU-22
RTU 280P-2	RU-24
RTU 360-2	RU-26

3 Accessories

Cable carrier, Sensors and cames	RU-28
T-Nuts, Robot connecting plate	RU-29

4 Technical instructions

Standard lengths and joint profiles	RU-33
Mounting options, Anchoring the RTU	RU-34
Levelling feet	RU-35
Protection options for rack and pinion driven RTU	RU-36
Gearboxes	RU-37
Lubrication of the rack and pinion driving system, Lubrication of the blocks	RU-38
Profile specifications	RU-39
Ordering key	RU-41
Warning and legal notes	RU-42

RTU series - Belt driven



> Robot Transfer Unit for robots up to 140 Kg



Fig. 1

Belt driven Robot Transfer Unit is designed to extend the working area of smaller industrial robots, with weight around 10 - 140 Kg or payload around 2 - 20 Kg. It is the best choice to improve the robot's productivity in applications such as small machine tool feeding, pick and place and assembly operations in different industrial sectors.

Robot Transfer Unit is made of one or two self-supporting extruded aluminum profiles joined together by means of rigid connecting crosspieces. It is available in different sizes: 120-1S, 160-1S, 220-1S and 80-2, 110-2. The aluminum profiles are resistant to corrosion, and are extruded to make highly elaborate geometries that guarantee an high moment of inertia and a low weight. Thanks to its lightness and high rigidity, Robot Transfer Unit operates smoothly even in applications that require wall or ceiling mounting.

The thrust force is transmitted by a steel reinforced polyurethane belt. The carriage runs on two parallel linear guides with four self-lubricated recirculating ball bearing blocks, positioned to support the carriage and all incident loads and moments. The polyurethane belt eliminates the need to lubricate the driving system.

The main advantages of Robot Transfer Unit are:

- Suitable for all the smaller industrial robots (eg. weight up to 140 Kg or payload up to 20 Kg)
- Five different sizes.
- High quality components and competitive performances.
- Easy and quick assembly.
- Customizations possible, please contact our technical department.

> The components

Extruded aluminum bodies

Robot Transfer Unit is created using extruded and anodized Rollon profiles, designed and manufactured to optimize weight while maintaining mechanical strength. The dimensional tolerances comply with UNI EN 755-9.

Driving belt

Robot Transfer Unit features a steel reinforced polyurethane drive belt with AT pitch. This belt is ideal due to its high load transmission characteristics and compact size. Used in conjunction with backlashfree pulleys, smooth alternating motion can be achieved. Optimization of the maximum belt width / body dimension ratio enables to achieve high speed while maintaining low levels of noise and wear. The provision of guidance for the belt within the body causes it to run central on the pulley, there by ensuring long service life.

Carriage

The carriage of the Robot Transfer Unit is made of anodized aluminum. A dedicated connecting plate allows to assemble the robot on the carriage. The plate is customized to accommodate the different kinds of robots.

Protection

Robot Transfer Unit size 80-2 and 110-2 are equipped with a polyurethane sealing strip to protect all of the internal components from dust, contaminants, and other foreign objects. The sealing strip runs the length of the body and is kept in position by micro-bearings located within the carriage. This minimizes frictional resistance as the strip passes through the carriage while providing maximum protection.

Gearbox

Pg. RU-37 lists the gearbox types suggested for the axis in floor mounted configuration and their assembly kit. To use other gearboxes, or for vertical mounting orientation, please contact our Technical Department.

> The linear motion system

The linear motion system has been designed to meet the load capacity, speed, and maximum acceleration conditions of a wide variety of applications.

RTU series with ball bearings guides

- Two ball bearing guides with high load capacity are mounted in a dedicated seat inside or outside the body.
- The carriage is assembled on four pre-loaded ball bearing blocks.
- The ball bearing blocks enable the carriage to withstand loading in the main directions.
- The blocks have seals on both sides and, if necessary, an additional scraper can be fitted for very dusty conditions.
- Lubrication reservoirs (pockets) installed on the front of the ball bearing blocks supply the right amount of grease, thus promoting long maintenance interval.

The linear motion system described offers:

- High speed and acceleration
- High load capacity
- High bending permissible moments
- Low friction
- Long lifetime
- Low maintenance (depending on application)
- Low noise

> RTU 120-1S

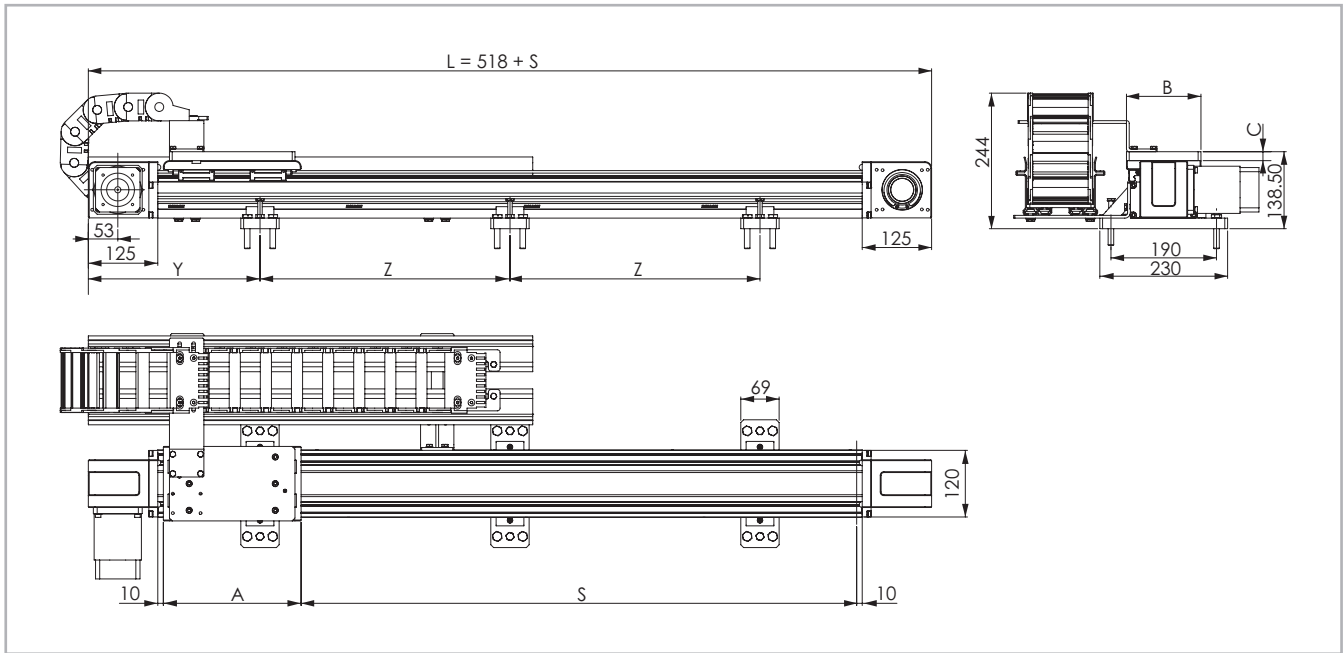


Fig. 2

Examples of robots

Type	Size	Robot examples			
		Brand	Model	Payload [Kg]	Weight [Kg]
RTU	120-1S	DENSO	VP-6242	2.5	15
		UNIVERSAL ROBOTS	UR3	3	11

Robot examples mentioned are approximate and refer to floor mounted version. For a correct choice and size of the robot please contact our technical department.

Tab. 1

Technical data

Type	Size	Max speed [m/s]	Max acceleration [m/s ²]	Repeatability* [mm]	Rail size [mm]
RTU	120-1S	2	4	± 0.05	15

* The total repeatability of the system depends on the gearbox. If the gearbox is ordered with the axis, our Technical Department can provide the total precision value.

Tab. 2

Belt specifications

Type	Size	Belt type	Belt width [mm]	Belt weight [Kg/m]	Pulley pitch diameter [mm]	Carriage displacement per pulley turn [mm]
RTU	120-1S	40 AT10	40	0.23	66.84	210

Tab. 3

Axis dimensions

Type	Size	Stroke S [mm]	Profile length P [mm]	Total length L [mm]	Levelling feet			Weight [kg]
					Nb. of feet	Y [mm]	Z [mm]	
RTU	120-1S	250	518	768	2	184	400	27
		500	768	1018	2	284	450	32
		750	1018	1268	3	184	450	37
		1000	1268	1518	3	309	450	42
		1250	1518	1768	4	209	450	49
		1500	1768	2018	5	209	400	56
		1750	2018	2268	5	234	450	61
		2000	2268	2518	6	259	400	68
		2250	2518	2768	6	259	450	73
		2500	2768	3018	7	309	400	79
		2750	3018	3268	7	284	450	84
		3000	3268	3518	8	184	450	91
		3250	3518	3768	8	309	450	96
		3500	3768	4018	9	209	450	103
		3750	4018	4268	9	334	450	108
		4000	4268	4518	10	234	450	114
		4250	4518	4768	12	184	400	122
		4500	4768	5018	11	259	450	126
		4750	5018	5268	13	234	400	134
		5000	5268	5518	12	284	450	138
5250	5518	5768	13	184	450	143		
5500	5768	6018	13	309	450	149		
5750	6018	6268	14	209	450	155		
6000	6518	6268	14	334	450	160		

Tab. 4

Carriage dimensions

Type	Size	A [mm]	B [mm]	C [mm]	Weight [Kg]
RTU	120-1S	248	134	16	5

Tab. 5

> RTU 160-1S

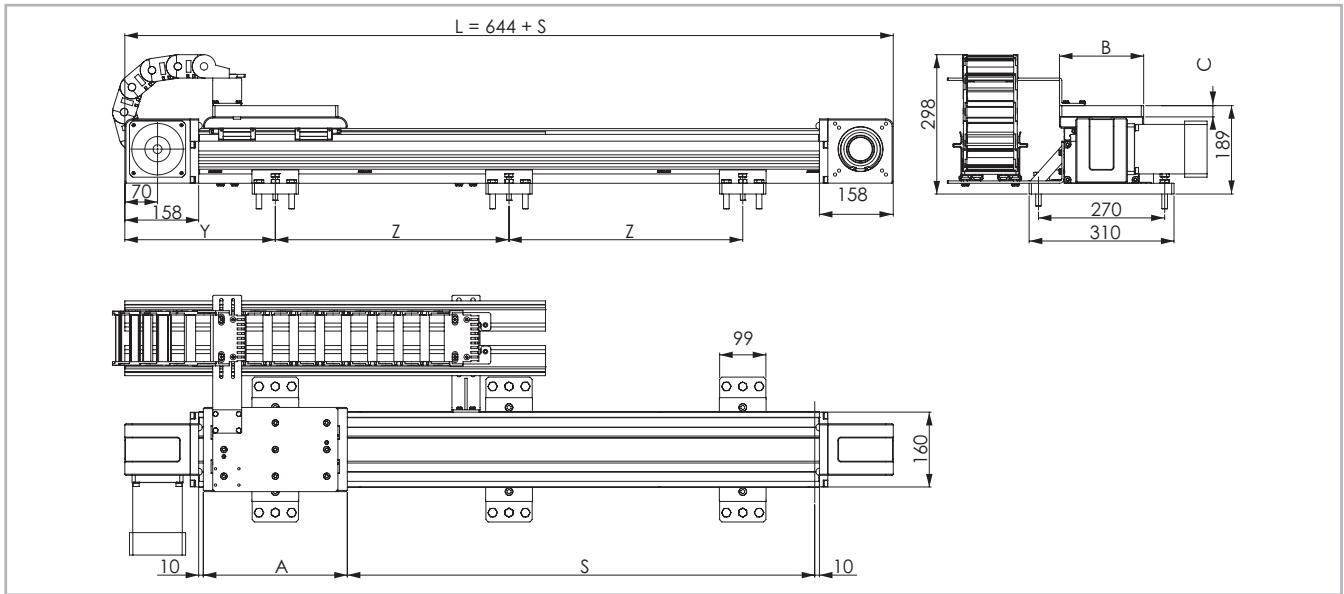


Fig. 3

Examples of robots

Type	Size	Robot examples			
		Brand	Model	Payload [Kg]	Weight [Kg]
RTU	160-1S	ABB	IRB 1100 ; IRB 120	3-4	21-25
		DOOSAN	M0609	6	17
		EPSON	Prosix C3	3	27
		KASSOW ROBOTS	KR810; KR1205	3-10	23.5-25
		KAWASAKI	RS03N; MC004N	3-4	20-25
		KUKA	KR 3 R540; LBR iiwa 7 R800; LBR iiwa 7 R820	3-14	22-29
		NACHI	Nachi MZ04; Nachi MZ07	4-7	26-30
		OMRON	TM5-700; TM5-900	4-6	21.8-22.6
		STÄUBLI	TX2-40	2	29
		UNIVERSAL ROBOTS	UR5	5	21
		YASKAWA	MH3F	3	27

Robot examples mentioned are approximate and refer to floor mounted version. For a correct choice and size of the robot please contact our technical department.

Tab. 6

Technical data

Type	Size	Max speed [m/s]	Max acceleration [m/s ²]	Repeatability* [mm]	Rail size [mm]
RTU	160-1S	2	4	± 0.05	20

* The total repeatability of the system depends on the gearbox. If the gearbox is ordered with the axis, our Technical Department can provide the total precision value.

Tab. 7

Belt specifications

Type	Size	Belt type	Belt width [mm]	Belt weight [Kg/m]	Pulley pitch diameter [mm]	Carriage displacement per pulley turn [mm]
RTU	160-1S	50 AT10	50	0.29	85.94	270

Tab. 8

Axis dimensions

Type	Size	Stroke S [mm]	Profile length P [mm]	Total length L [mm]	Levelling feet			Weight [kg]
					Nb. of feet	Y [mm]	Z [mm]	
RTU	160-1S	250	578	894	2	222	450	44
		500	828	1144	2	322	500	49
		750	1078	1394	3	247	450	56
		1000	1328	1644	3	322	500	61
		1250	1578	1894	4	272	450	69
		1500	1828	2144	4	322	500	74
		1750	2078	2394	5	297	450	81
		2000	2328	2644	5	322	500	86
		2250	2578	2894	6	322	450	94
		2500	2828	3144	6	322	500	98
		2750	3078	3394	7	347	450	106
		3000	3328	3644	7	322	500	110
		3250	3578	3894	8	372	450	119
		3500	3828	4144	8	322	500	124
		3750	4078	4394	8	272	550	128
		4000	4328	4644	9	322	500	135
		4250	4578	4894	9	247	550	139
		4500	4828	5144	10	322	500	149
		4750	5078	5394	10	222	550	153
		5000	5328	5644	11	322	500	161
5250	5578	5894	13	247	450	171		
5500	5828	6144	12	322	500	174		
5750	6078	6394	14	272	450	183		
6000	6328	6644	13	322	500	186		

Tab. 9

Carriage dimensions

Type	Size	A [mm]	B [mm]	C [mm]	Weight [Kg]
RTU	160-1S	308	180	24	10.3

Tab. 10

> RTU 220-1S

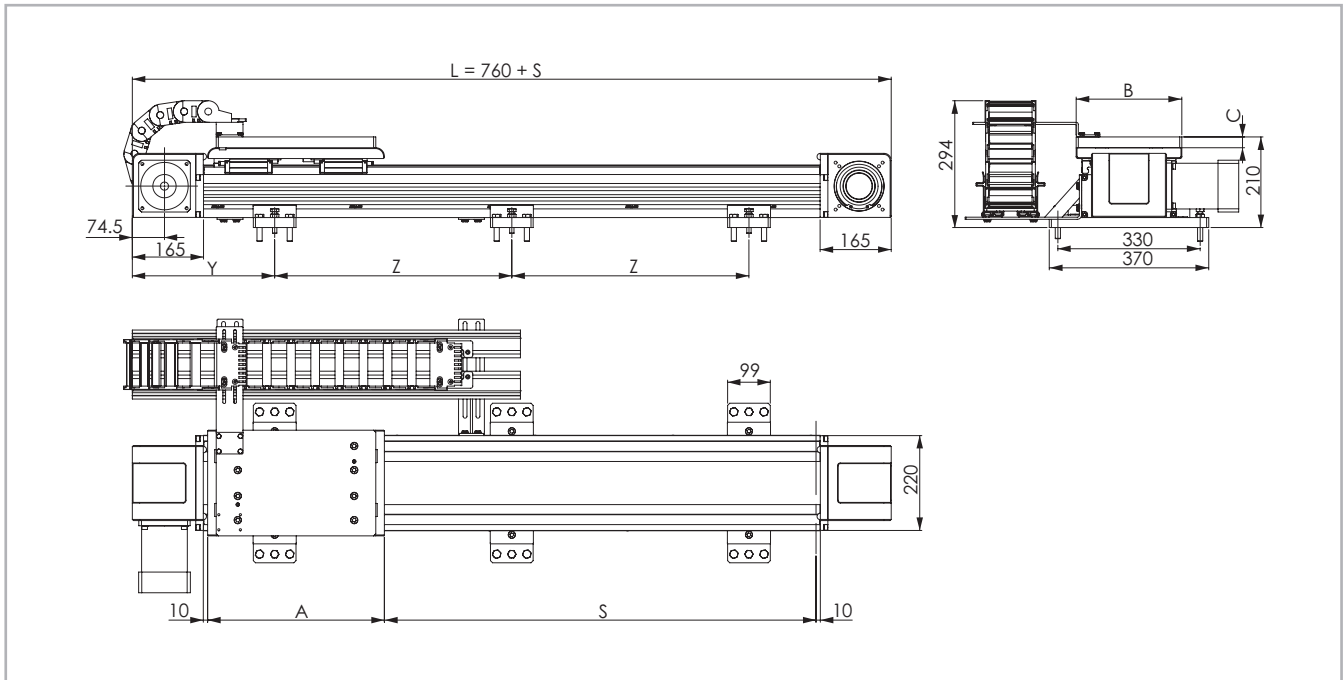


Fig. 4

Examples of robots

Type	Size	Robot examples			
		Brand	Model	Payload [Kg]	Weight [Kg]
RTU	220-1S	DOOSAN	M0617; M1013; M1509	6-15	24-32
		FANUC	CR-4ia; CR-7ia; CRX-10ia; CR-14ia/L; LR Mate 200id; LR Mate 200id/4S; LR Mate 200id/14L	4-14	17-53
		KASSOW ROBOTS	KR1018	18	34
		KUKA	KR 6 R700-2; KR 6 R900-2; KR 10 R1100-2	6-10	53-55
		NACHI	Nachi MZ03EL	10	47
		STÄUBLI	TX2-60	4.5	51
		UNIVERSAL ROBOTS	UR10; UR10e; UR16e	10-16	31.5-33.5
		YASKAWA	HC10; GP7; GP8	7-10	32-47

Robot examples mentioned are approximate and refer to floor mounted version. For a correct choice and size of the robot please contact our technical department.

Tab. 11

Technical data

Type	Size	Max speed [m/s]	Max acceleration [m/s ²]	Repeatability* [mm]	Rail size [mm]
RTU	220-1S	2	4	± 0.05	25

* The total repeatability of the system depends on the gearbox. If the gearbox is ordered with the axis, our Technical Department can provide the total precision value.

Tab. 12

Belt specifications

Type	Size	Belt type	Belt width [mm]	Belt weight [Kg/m]	Pulley pitch diameter [mm]	Carriage displacement per pulley turn [mm]
RTU	220-1S	100 AT10	100	0.58	79.58	320

Tab. 13

Axis dimensions

Type	Size	Stroke S [mm]	Profile length P [mm]	Total length L [mm]	Levelling feet			Weight [kg]
					Nb. of feet	Y [mm]	Z [mm]	
RTU	220-1S	250	680	1010	2	230	550	68
		500	930	1260	2	355	550	75
		750	1180	1510	3	255	500	84
		1000	1430	1760	3	330	550	91
		1250	1680	2010	4	255	500	100
		1500	1930	2260	4	305	550	107
		1750	2180	2510	4	430	550	114
		2000	2430	2760	5	280	550	123
		2250	2680	3010	5	405	550	129
		2500	2930	3260	6	255	550	139
		2750	3180	3510	6	380	550	146
		3000	3430	3760	7	230	550	155
		3250	3680	4010	7	355	550	161
		3500	3930	4260	8	380	500	171
		3750	4180	4510	8	330	550	178
		4000	4430	4760	9	380	500	187
		4250	4680	5010	9	305	550	194
		4500	4930	5260	9	430	550	202
		4750	5180	5510	10	280	550	210
		5000	5430	5760	10	405	550	217
5250	5680	6010	11	255	550	225		
5500	5930	6260	11	380	550	233		
5750	6180	6510	12	230	550	242		

Tab. 14

Carriage dimensions

Type	Size	A [mm]	B [mm]	C [mm]	Weight [Kg]
RTU	220-1S	410	245	25	19.5

Tab. 15

> RTU 80-2

Anticorrosion version available

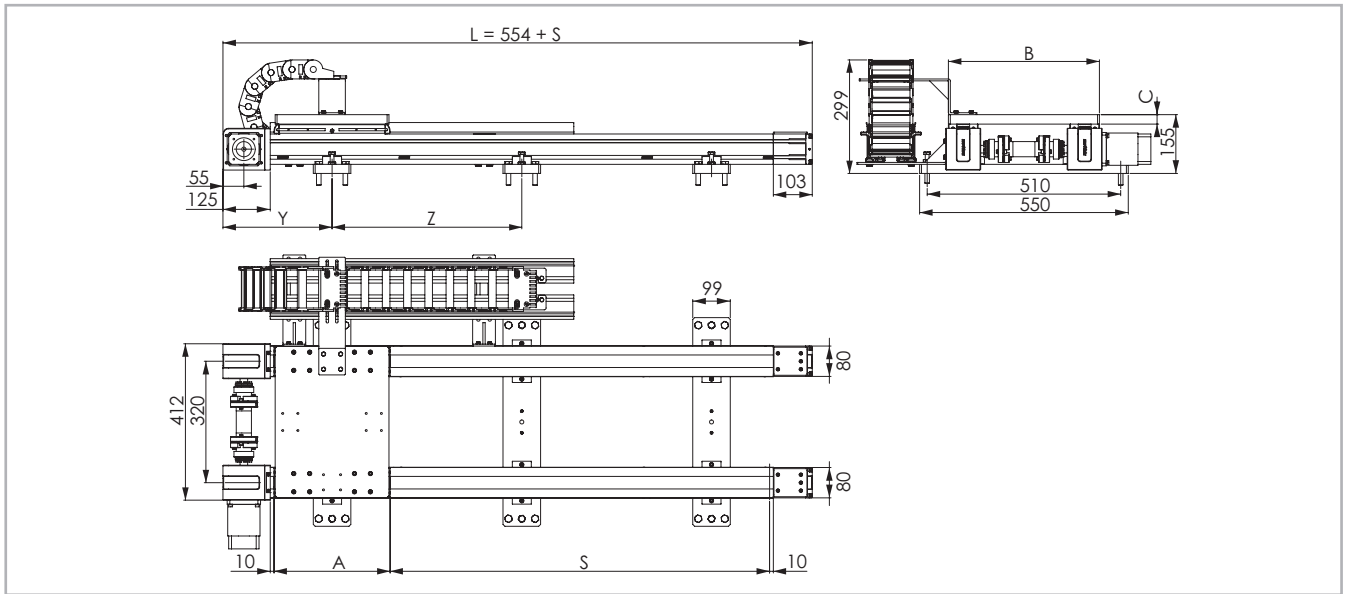


Fig. 5

Examples of robots

Type	Size	Robot examples			
		Brand	Model	Payload [Kg]	Weight [Kg]
RTU	80-2	KASSOW ROBOTS	KR1410; KR1805	5-10	35-38
		KAWASAKI	RS003N; RS005N; RS005L; RS007N; RS007L	3-7	20-37
		KUKA	Agilus Serie KR3; KR6; KR10	3-10	26-57
		MITSUBISHI	RV-2FR; RV-2FRL; RV-4FR; RV-4FRL; RV-7FR; RV-7FRL; RV-7FRLL	3-7	19-130
		NACHI	MZ07-01; MZ07L-01; MZ07P-01; MZ07LP-01;	7	30-32
		STÄUBLI	TX2-40; TX2-60; TX2-60L	2-4.5	29-53
		UNIVERSAL ROBOTS	UR3/3e; UR5/5e; UR10/10e; UR16e	3-16	11-34
		YASKAWA	GP7; GP8	7-8	32-34

Robot examples mentioned are approximate and refer to floor mounted version. For a correct choice and size of the robot please contact our technical department.

Tab. 16

Technical data

Type	Size	Max speed [m/s]	Max acceleration [m/s ²]	Repeatability* [mm]	Rail size [mm]
RTU	80-2	2	4	± 0.05	20

* The total repeatability of the system depends on the gearbox. If the gearbox is ordered with the axis, our Technical Department can provide the total precision value.

Tab. 17

Belt specifications*

Type	Size	Belt type	Belt width [mm]	Belt weight [Kg/m]	Pulley pitch diameter [mm]	Carriage displacement per pulley turn [mm]
RTU	80-2	32 AT 10	32	0.185	60.48	190

* RTU80-2 features two identical belts, one in each linear axis. The data shown refers to the single belt.

Tab. 18

Axis dimensions

Type	Size	Stroke S [mm]	Profile length P [mm]	Total length L [mm]	Levelling feet			Weight [kg]
					Nb. of feet	Y [mm]	Z [mm]	
RTU	80-2	250	576	804	2	188	450	50
		500	826	1054	2	288	500	55
		750	1076	1304	3	213	450	65
		1000	1326	1554	3	288	500	71
		1250	1576	1804	4	238	450	81
		1500	1826	2054	4	288	500	86
		1750	2076	2304	5	263	450	96
		2000	2326	2554	5	288	500	101
		2250	2576	2804	5	353	530	107
		2500	2826	3054	6	288	500	117
		2750	3076	3304	6	338	530	123
		3000	3326	3554	7	288	500	132
		3250	3576	3804	7	323	530	137
		3500	3826	4054	8	288	500	148
		3750	4076	4304	8	308	530	154
		4000	4326	4554	9	288	500	163
		4250	4576	4804	9	293	530	168
		4500	4826	5054	10	288	500	179
		4750	5076	5304	10	278	530	185
		5000	5326	5554	11	288	500	194
5250	5576	5804	11	263	530	200		
5500	5826	6054	12	288	500	210		
5750	6076	6304	12	248	530	216		

Tab. 19

Carriage dimensions

Type	Size	A [mm]	B [mm]	C [mm]	Weight [Kg]
RTU	80-2	306	398	25	15.3

Tab. 20

> RTU 110-2

Anticorrosion version available

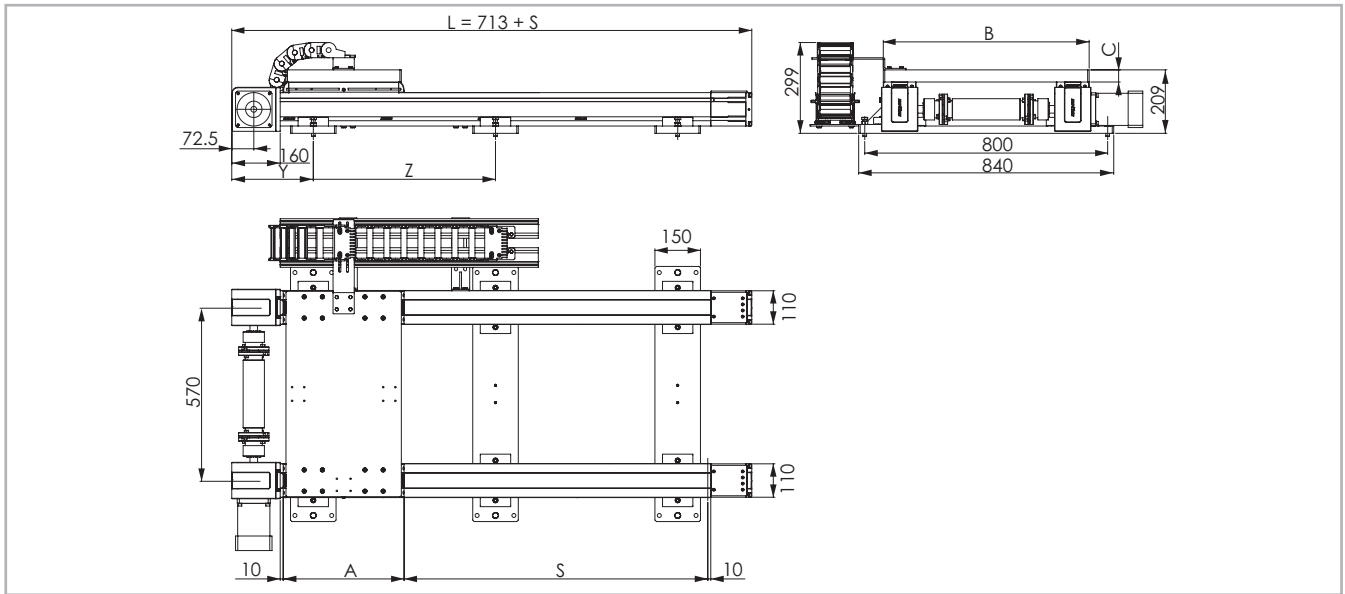


Fig. 6

Examples of robots

Type	Size	Robot examples			
		Brand	Model	Payload [Kg]	Weight [Kg]
RTU	110-2	ABB	IRB 1300; IRB 1300; IRB 1300; IRB 140	7-11	74.5-78.5
		DENSO	VP-6083	6	82
		MITSUBISHI	RV-13F; RV-20F	13-20	120-137
		STÄUBLI	TX2-90	7	111
		YASKAWA	SIA20D	20	120

Robot examples mentioned are approximate and refer to floor mounted version. For a correct choice and size of the robot please contact our technical department.

Tab. 21

Technical data

Type	Size	Max speed [m/s]	Max acceleration [m/s ²]	Repeatability* [mm]	Rail size [mm]
RTU	110-2	2	4	± 0.05	25

* The total repeatability of the system depends on the gearbox. If the gearbox is ordered with the axis, our Technical Department can provide the total precision value.

Tab. 22

Belt specifications*

Type	Size	Belt type	Belt width [mm]	Belt weight [Kg/m]	Pulley pitch diameter [mm]	Carriage displacement per pulley turn [mm]
RTU	110-2	50 AT10	50	0.29	85.94	270

* RTU110-2 features two identical belts, one in each linear axis. The data shown refers to the single belt.

Tab. 23

Axis dimensions

Type	Size	Stroke S [mm]	Profile length P [mm]	Total length L [mm]	Levelling feet			Weight [kg]
					Nb. of feet	Y [mm]	Z [mm]	
RTU	110-2	250	668	963	2	269	450	122
		500	918	1213	2	294	650	130
		750	1168	1463	2	419	650	137
		1000	1418	1713	3	269	600	155
		1250	1668	1963	3	344	650	163
		1500	1918	2213	3	469	650	172
		1750	2168	2463	4	269	650	189
		2000	2418	2713	4	394	650	197
		2250	2668	2963	5	294	600	215
		2500	2918	3213	5	319	650	222
		2750	3168	3463	5	444	650	230
		3000	3418	3713	6	244	650	248
		3250	3668	3963	6	369	650	256
		3500	3918	4213	7	319	600	274
		3750	4168	4463	7	294	650	282
		4000	4418	4713	7	419	650	290
		4250	4668	4963	8	394	600	308
		4500	4918	5213	8	344	650	316
		4750	5168	5463	8	469	650	325
		5000	5418	5713	9	269	650	342
5250	5668	5963	9	394	650	350		
5500	5918	6213	10	419	600	368		
5750	6168	6463	10	319	650	376		

Tab. 24

Carriage dimensions

Type	Size	A [mm]	B [mm]	C [mm]	Weight [Kg]
RTU	110-2	398	678	40	42.2

Tab. 25

RTU series - Rack and pinion driven



> Robot Transfer Unit for robots up to 1500 Kg

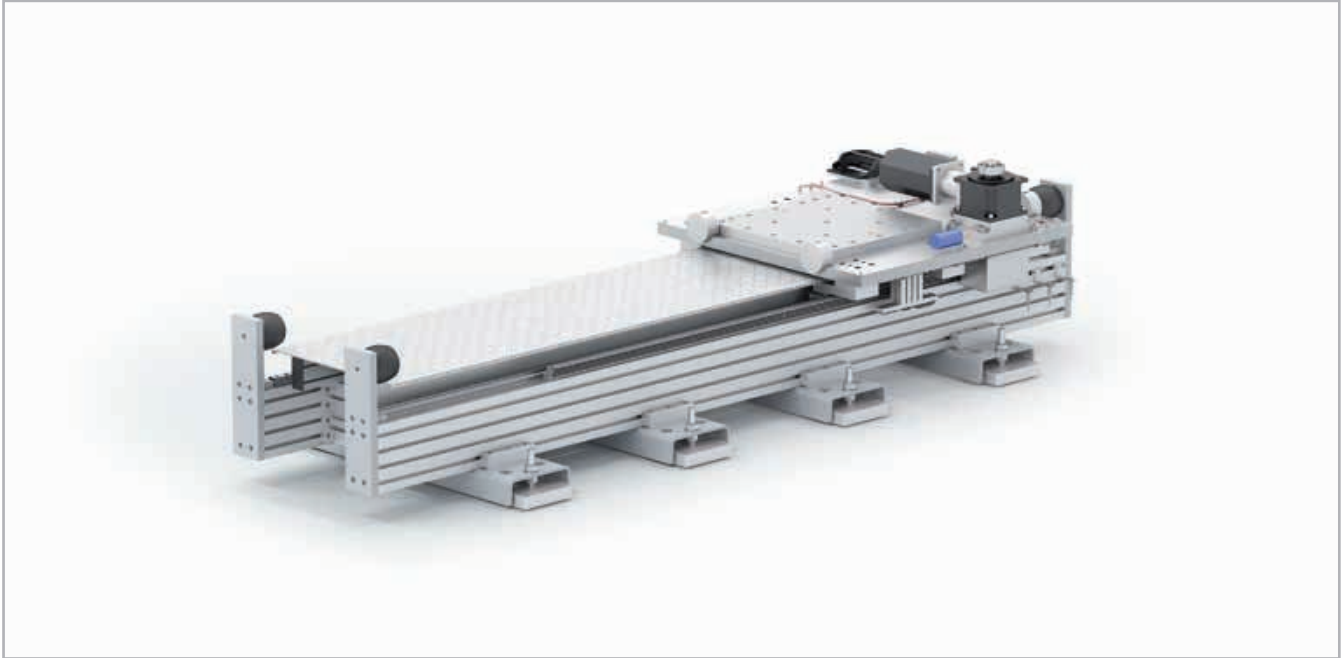


Fig. 7

Rack and pinion driven Robot Transfer Unit is designed to extend the operating range of every robot up to 1500 kg. From the feeding of industrial machines in the production lines to painting or welding applications in the automotive or metal sheet industry, it improves the productivity of the robots by increasing their range of motion.

Robot Transfer Unit is made of one or two self-supporting extruded aluminum AL 6060 T6 profiles joined together by means of rigid connecting crosspieces. It is available in different sizes: 280-1, 170-2, 170P-2, 280-2, 280P-2 and 360-2. The aluminum profiles are resistant to corrosion, and are extruded to make highly elaborate geometries that guarantee the greatest moment of inertia and the least weight possible. Thanks to its lightness and high rigidity, Robot Transfer Unit operates smoothly even in applications that require wall or ceiling mounting.

The rack and pinion transmission allows to withstand heavy loads and to reach potentially infinite strokes. The carriage runs on two parallel recirculating roller linear guides with six blocks (eight for sizes 170P-2 and 280P-2) positioned to support it and all incident loads and moments. The blocks can be lubricated with an automatic system.

The main advantages of Robot Transfer Unit are:

- Suitable for every robot up to 1500 kg.
- Six different sizes.
- Three lubrication options to reduce and simplify maintenance.
- Three types of covers to protect the axis.
- High quality components and competitive performances.
- Easy and quick assembly.
- Potentially infinite strokes achievable.
- Customizations possible, please contact our technical department.

> The components

Extruded aluminum bodies

Robot Transfer Unit is created using extruded and anodized Rollon profiles, designed and manufactured to optimize weight while maintaining mechanical strength. The dimensional tolerances comply with UNI EN 755-9.

Rack and pinion

The steel racks are hardened and ground (Q6), have helical teeth for higher load capacity and low noise and are available with three different modules: m3, m4 and m5. Racks are assembled with pinions made of hardened steel. For more information on the driving system lubrication see pg. RU-38).

Carriage

The carriage of the Robot Transfer Unit is made of anodized aluminum and its dimensions may vary according to the sizes and the type of protection chosen. A dedicated connecting plate allows to assemble the robot on the carriage. The plate is customized to accommodate the different kinds of robots.

Protection

Rack and pinion driven Robot Transfer Unit can be equipped with three different level of protection to cover the driving system and the linear motion components against contaminants. For more information see pg. RU-36.

Gearbox

Each size of Robot Transfer Unit is available with a pre-selected gearbox (see pg. RU-37, tab. 69).

> The linear motion system

The linear motion system has been designed to meet the load capacity, speed, and maximum acceleration conditions of a wide variety of applications.

RTU series with recirculating roller guides

Two recirculating roller guides with high load capacity are mounted in two dedicated seats on the outer sides of the body.

- Two recirculating roller guides with high load capacity are mounted in two dedicated seats on the outer sides of the body.
- By using rollers, which are less subject to deformation, the guides achieve very high rigidity.
- The carriage is assembled on six pre-loaded blocks (eight for sizes 170P-2 and 280P-2).
- The rolling elements configuration enable the carriage to withstand loading in the main directions.
- The blocks have seals on both sides and, if necessary, an additional scraper can be fitted for very dusty conditions.

The linear motion system described offers:

- High speed and acceleration
- High load capacity
- High bending permissible moments
- Low friction
- Long lifetime
- Low maintenance (depending on application)
- Low noise

> RTU 280-1

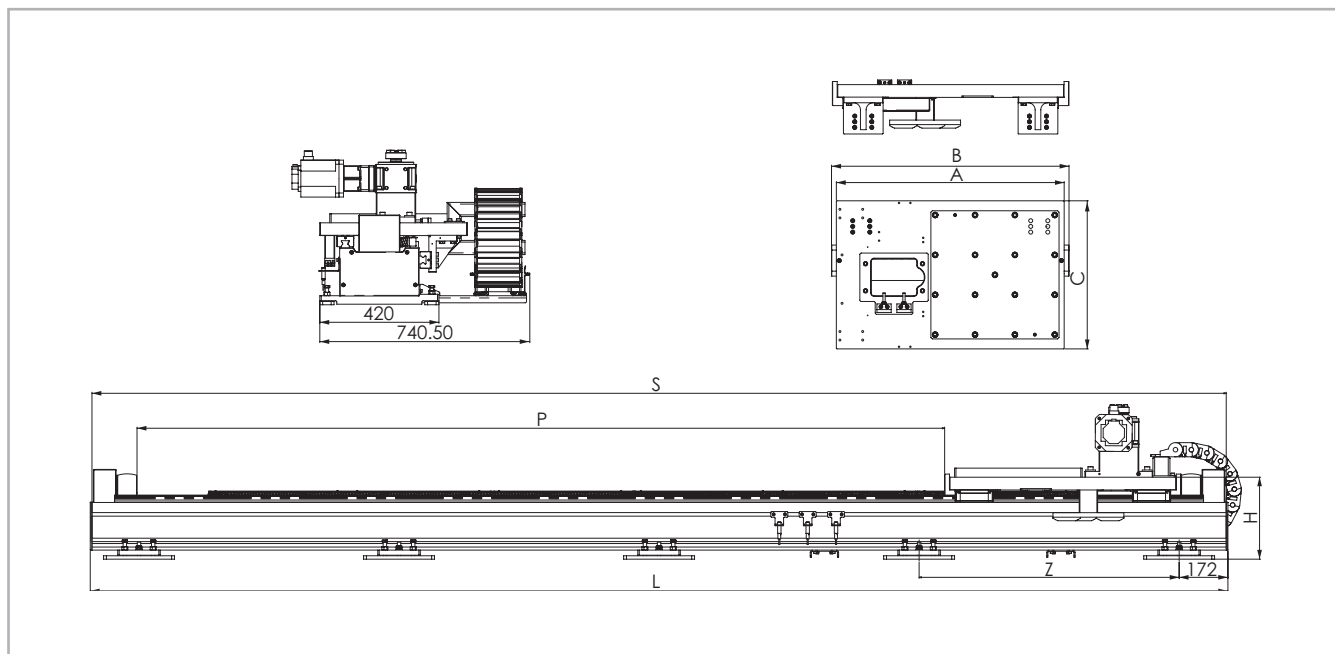


Fig. 8

Examples of robots

Type	Size	Robot examples			
		Brand	Model	Payload [Kg]	Weight [Kg]
RTU	280-1	COMAU	Racer 7-1.0; Racer-7-1.4; SIX-6-1.4	6-7	160-180
		FANUC	ARC Mate 100iC/12; M-10iA/10M; M-10iA/12; M-10iD 12	10-12	130-145
		KAWASAKI	RS010N; RS006L	6-10	150
		KUKA	KR6 – KR10 CYBERTECH nano; KR6 – KR8 CYBERTECH ARC nano	6-10	145-180
		MITSUBISHI	RV13FR(-L); RV20FR	13-20	120-130
		NACHI	NB04; NV06;	10	160-170
		STÄUBLI	TP80; TX2-90; TX2-90L; TX2-90XL	7-14	111-119
		YASKAWA	MH12/-F; GP12	12	130-150

Robot examples mentioned are approximate and refer to floor mounted version. For a correct choice and size of the robot please contact our technical department.

Tab. 26

Technical data

Type	Size	Max speed [m/s]	Max acceleration [m/s ²]	Repeatability [mm]	Rail size [mm]
RTU	280-1	2	4	± 0.05	30

Tab. 27

Rack specifications

Type	Size	Rack			Pinion		
		Module	Quality	Type	Module	Ø [mm]	Stroke per revolution [mm]
RTU	280-1	m3	Q6	Helical teeth, hardenend and ground	m3	89.13	280

Tab. 28

Axis dimensions

Type	Size	Stroke* ¹ S [mm]	Profile length P [mm]	Total length L [mm]	Height* ² H [mm]	Weight [Kg]
RTU	280-1	848	2000	2012	289	300
		1348	2500	2512		330
		1848	3000	3012		331
		2348	3500	3512		407
		2848	4000	4012		453
		3348	4500	4512		484
		3848	5000	5012		530
		4348	5500	5512		560
		4848	6000	6012		607

*¹ Longer strokes can be made by joining profiles (see pg. RU-33).

*² Dimension H refers from the lower surface of the adjustable foot, in fully upwards position, to the top of the carriage.
The height of the robot connecting plate must be added (see pg. RU-29)

Tab. 29

Carriage dimensions

Type	Size	A [mm]	B [mm]	C [mm]	Weight* [Kg]
RTU	280-1	800	834	520	131

* Including gearbox

Tab. 30

Levelling feet

Type	Size	Stroke S [mm]	Nb. of feet	Z [mm]
RTU	280-1	858	3	834
		1358	3	1084
		1858	4	889.3
		2358	4	1056
		2858	5	917
		3358	5	1042
		3858	6	933.6
		4358	6	1033.6
		4858	7	944.6

Tab. 31

> RTU 170-2

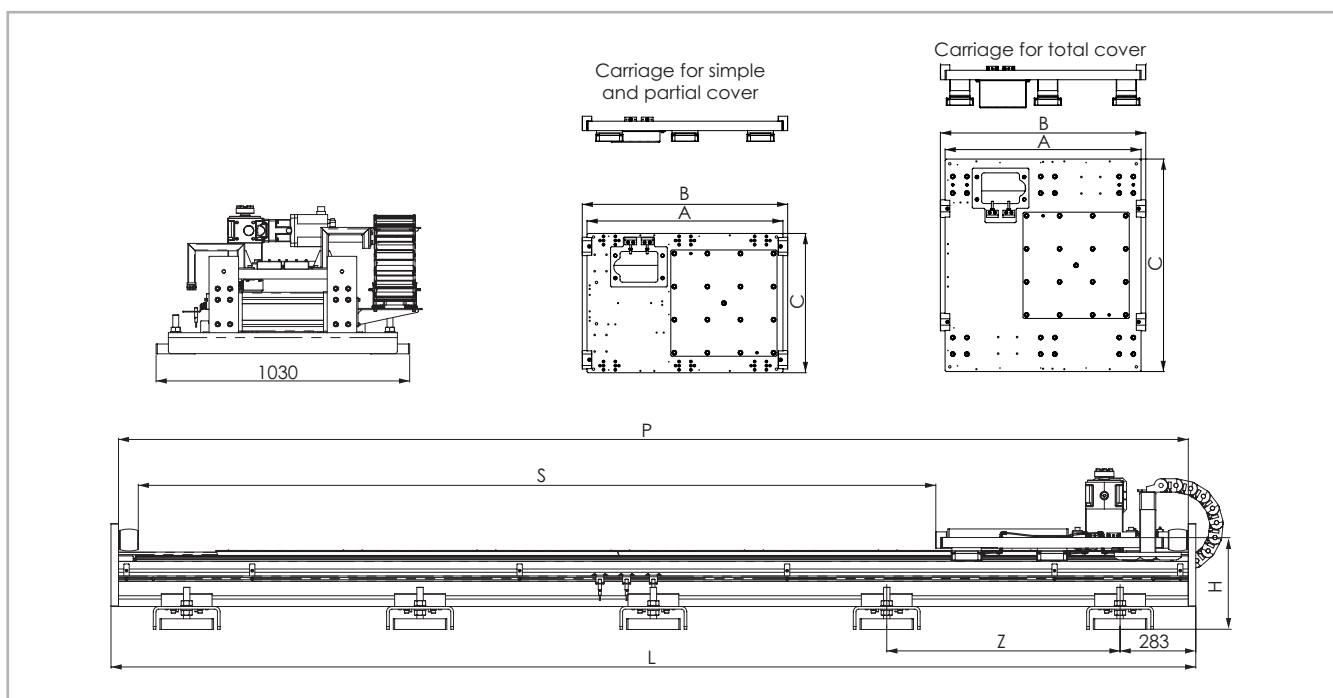


Fig. 9

Examples of robots

Type	Size	Robot examples			
		Brand	Model	Payload [Kg]	Weight [Kg]
RTU	170-2	ABB	IRB 1600; IRB 1660ID; IRB 2600-12/-20; IRB 2600ID-8/-15;	4-20	250-284
		FANUC	M-20iA; M-20iA/20M; ARC Mate 120C; M-20iB/25; M-20iB/25C; M-20iA/35M	20-25	210-250
		KAWASAKI	RS020N; RS010L	10-20	230
		KUKA	KR CYBERTECH / KR CYBERTECH arc	8-22	250-270
		NACHI	MC10L; MC20; MR20-02; MR20L-01; NB04L; NV06L	10-20	220-280
		STÄUBLI	RX160; RX160HD; RX160L;	14-20	248-250
		YASKAWA	GP25; GP25-12; HP20F/-RD 2	12-25	250-258

Robot examples mentioned are approximate and refer to floor mounted version. For a correct choice and size of the robot please contact our technical department.

Tab. 32

Technical data

Type	Size	Max speed [m/s]	Max acceleration [m/s ²]	Repeatability [mm]	Rail size [mm]
RTU	170-2	2	4	± 0.05	25

Tab. 33

Rack specifications

Type	Size	Rack			Pinion		
		Module	Quality	Type	Module	∅ [mm]	Stroke per revolution [mm]
RTU	170-2	m3	Q6	Helical teeth, hardenend and ground	m3	89.13	280

Tab. 34

Axis dimensions

Type	Size	Stroke* ¹ S [mm]	Profile length P [mm]	Total length L [mm]	Height* ² H [mm]		Weight [Kg]	
					Simple and partial cover	Total cover	Simple and partial cover	Total cover
RTU	170-2	982	2000	2056	344	387	470	560
		1482	2500	2556			500	595
		1982	3000	3056			592	673
		2482	3500	3556			624	729
		2982	4000	4056			714	823
		3482	4500	4556			745	863
		3982	5000	5056			836	959
		4482	5500	5556			867	996
		4982	6000	6056			964	1092

*¹ Longer strokes can be made by joining profiles (see pg. RU-33).

*² Dimension H refers from the lower surface of the adjustable foot, in fully upwards position, to the top of the carriage.
The height of the robot connecting plate must be added (see pg. RU-29)

Tab. 35
Carriage dimensions

Type	Size	A [mm]	B [mm]	C [mm]		Weight* [Kg]	
				Simple and partial cover	Total cover	Simple and partial cover	Total cover
RTU	170-2	830	870	590	900	132	196

* Including gearbox

Tab. 36
Levelling feet

Type	Size	Stroke S [mm]	Nb. of feet	Z [mm]
RTU	170-2	982	3	745
		1482	3	995
		1982	4	830
		2482	4	996.7
		2982	5	872.5
		3482	5	997.5
		3982	6	898
		4482	6	998
		4982	7	915

Tab. 37

> RTU 170P-2

Optimized sizing
with larger linear rails **PLUS**

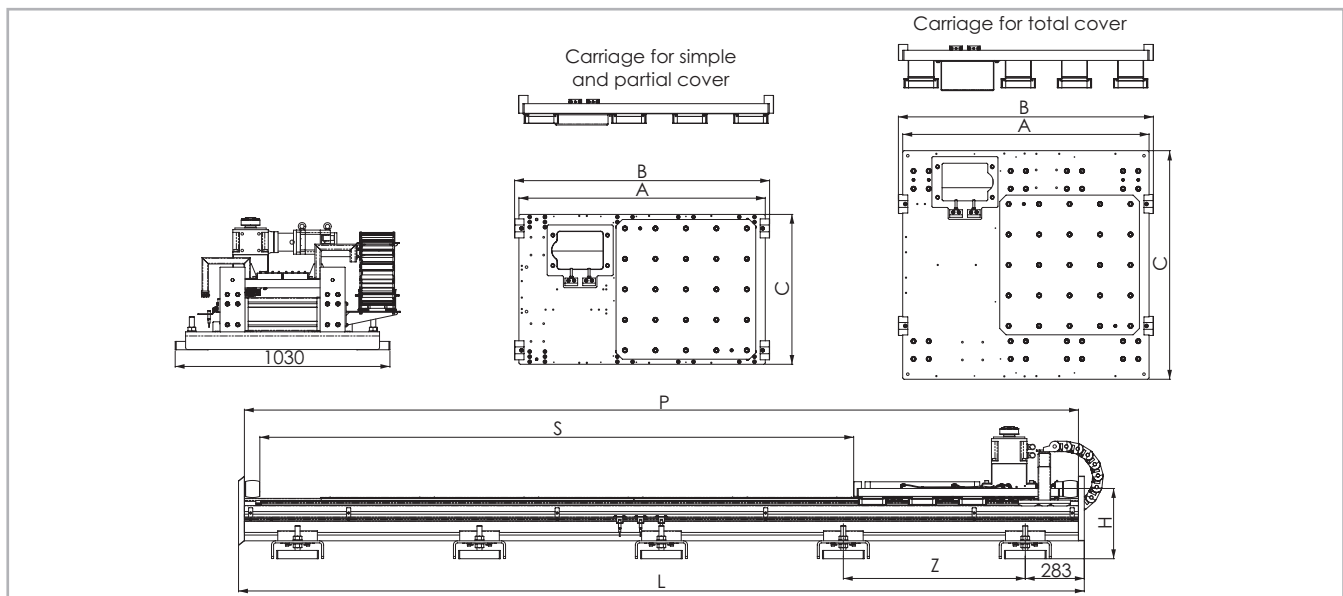


Fig. 10

Examples of robots

Type	Size	Robot examples			
		Brand	Model	Payload [Kg]	Weight [Kg]
RTU	170P-2	ABB	IRB 2400; IRB 4600; IRB 6620LX;	10-150	380-610
		COMAU	NS-12-1.85; NS-16-1.65; NJ-16-3.1; NJ-40-2.5; NJ-60-2.2	12-60	333-680
		FANUC	M-710 all types	12-70	410-570
		KAWASAKI	RS030N; RS050N; RS080N; RS15X	30-80	555
		NACHI	MC35-01; MC50-01; MC70-01	35-70	640

Robot examples mentioned are approximate and refer to floor mounted version. For a correct choice and size of the robot please contact our technical department.

Tab. 38

Technical data

Type	Size	Max speed [m/s]	Max acceleration [m/s ²]	Repeatability [mm]	Rail size [mm]
RTU	170P-2	2	4	± 0.05	30

Tab. 39

Rack specifications

Type	Size	Rack			Pinion		
		Module	Quality	Type	Module	∅ [mm]	Stroke per revolution [mm]
RTU	170P-2	m3	Q6	Helical teeth, hardened and ground	m3	89.13	280

Tab. 40

Axis dimensions

Type	Size	Stroke* ¹ S [mm]	Profile length P [mm]	Total length L [mm]	Height* ² H [mm]		Weight [Kg]	
					Simple and partial cover	Total cover	Simple and partial cover	Total cover
RTU	170P-2	848	2000	2056	337	407	516	635
		1348	2500	2556			548	670
		1848	3000	3056			660	766
		2348	3500	3556			676	808
		2848	4000	4056			763	904
		3348	4500	4556			796	941
		3848	5000	5056			888	1041
		4348	5500	5556			924	1078
		4848	6000	6056			1012	1177

*¹ Longer strokes can be made by joining profiles (see pg. RU-33).

*² Dimension H refers from the lower surface of the adjustable foot, in fully upwards position, to the top of the carriage.
The height of the robot connecting plate must be added (see pg. RU-29)

Tab. 41

Carriage dimensions

Type	Size	A [mm]	B [mm]	C [mm]		Weight* [Kg]	
				Simple and partial cover	Total cover	Simple and partial cover	Total cover
RTU	170P-2	970	1004	590	900	176	267

* Including gearbox

Tab. 42

Levelling feet

Type	Size	Stroke S [mm]	Nb. of feet	Z [mm]
RTU	170P-2	848	3	745.0
		1348	3	995.0
		1848	4	830.0
		2348	4	996.7
		2848	5	872.5
		3348	5	997.5
		3848	6	898.0
		5348	6	998.0
		4848	7	915.0

Tab. 43

> RTU 280-2

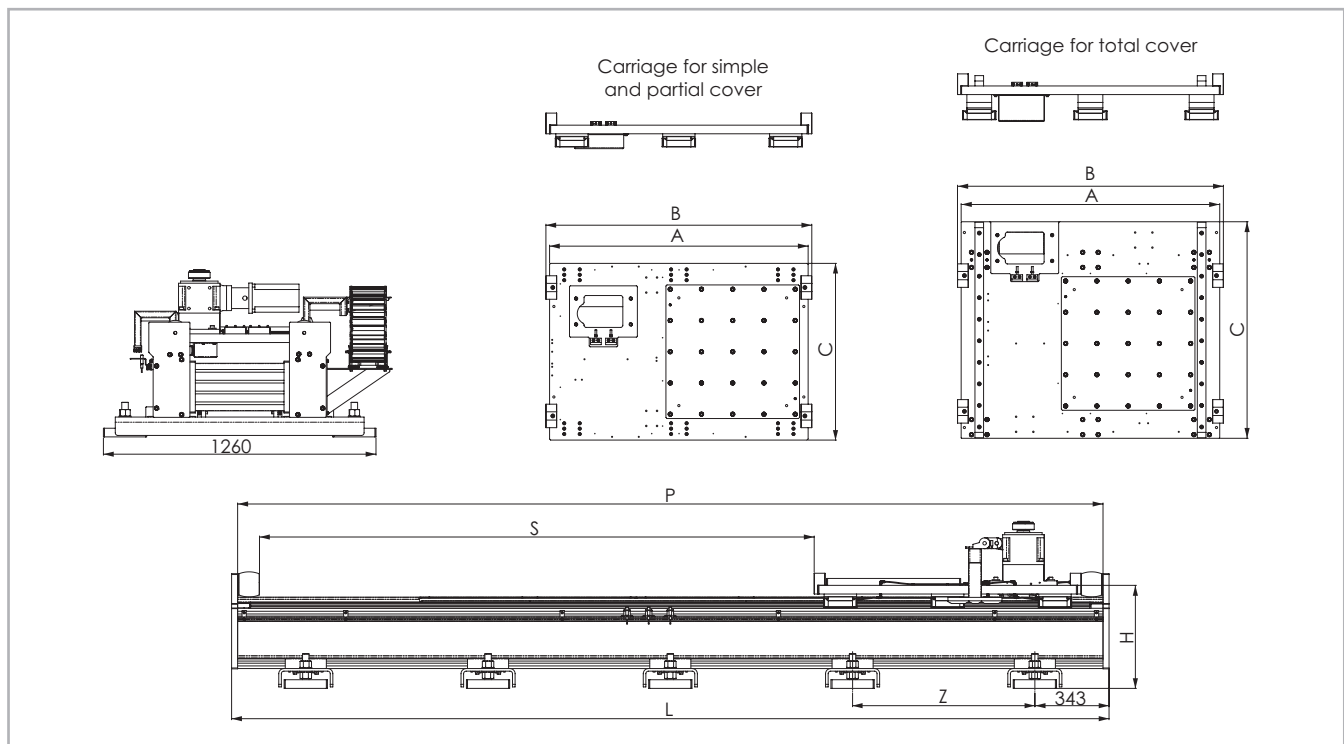


Fig. 11

Examples of robots

Type	Size	Robot examples			
		Brand	Model	Payload [Kg]	Weight [Kg]
RTU	280-2	ABB	IRB460	110	925
		FANUC	M-710 all types	12-70	410-570
		KUKA	KR 30 and KR 60 - all types	16-60	600-700

Robot examples mentioned are approximate and refer to floor mounted version. For a correct choice and size of the robot please contact our technical department.

Tab. 44

Technical data

Type	Size	Max speed [m/s]	Max acceleration [m/s ²]	Repeatability [mm]	Rail size [mm]
RTU	280-2	2	4	± 0.05	35

Tab. 45

Rack specifications

Type	Size	Rack			Pinion		
		Module	Quality	Type	Module	Ø [mm]	Stroke per revolution [mm]
RTU	280-2	m4	Q6	Helical teeth, hardened and ground	m4	76.39	240

Tab. 46

Axis dimensions

Type	Size	Stroke ^{*1} S [mm]	Profile length P [mm]	Total length L [mm]	Height ^{*2} H [mm]		Weight [Kg]	
					Simple and partial cover	Total cover	Simple and partial cover	Total cover
RTU	280-2	564	2000	2056	476	532	827	972
		1064	2500	2556			883	1037
		1564	3000	3056			1024	1192
		2064	3500	3556			1092	1262
		2564	4000	4056			1232	1418
		3064	4500	4556			1297	1488
		3564	5000	5056			1438	1644
		4064	5500	5556			1506	1724
		4564	6000	6056			1646	1882

*1 Longer strokes can be made by joining profiles (see pg. RU-33).

*2 Dimension H refers from the lower surface of the adjustable foot, in fully upwards position, to the top of the carriage.
The height of the robot connecting plate must be added (see pg. RU-29)

Tab. 47

Carriage dimensions

Type	Size	A [mm]	B [mm]	C [mm]		Weight* [Kg]	
				Simple and partial cover	Total cover	Simple and partial cover	Total cover
RTU	280-2	1200	1234	820	1005	257	355

* Including gearbox

Tab. 48

Levelling feet

Type	Size	Stroke S [mm]	Nb. of feet	Z [mm]
RTU	280-2	564	3	685.0
		1064	3	935.0
		1564	4	790.0
		2064	4	956.7
		2564	5	842.5
		3064	5	967.5
		3564	6	874.0
		4064	6	974.0
		4564	7	895.0

Tab. 49

> RTU 280P-2

Optimized sizing with larger linear rails **PLUS**

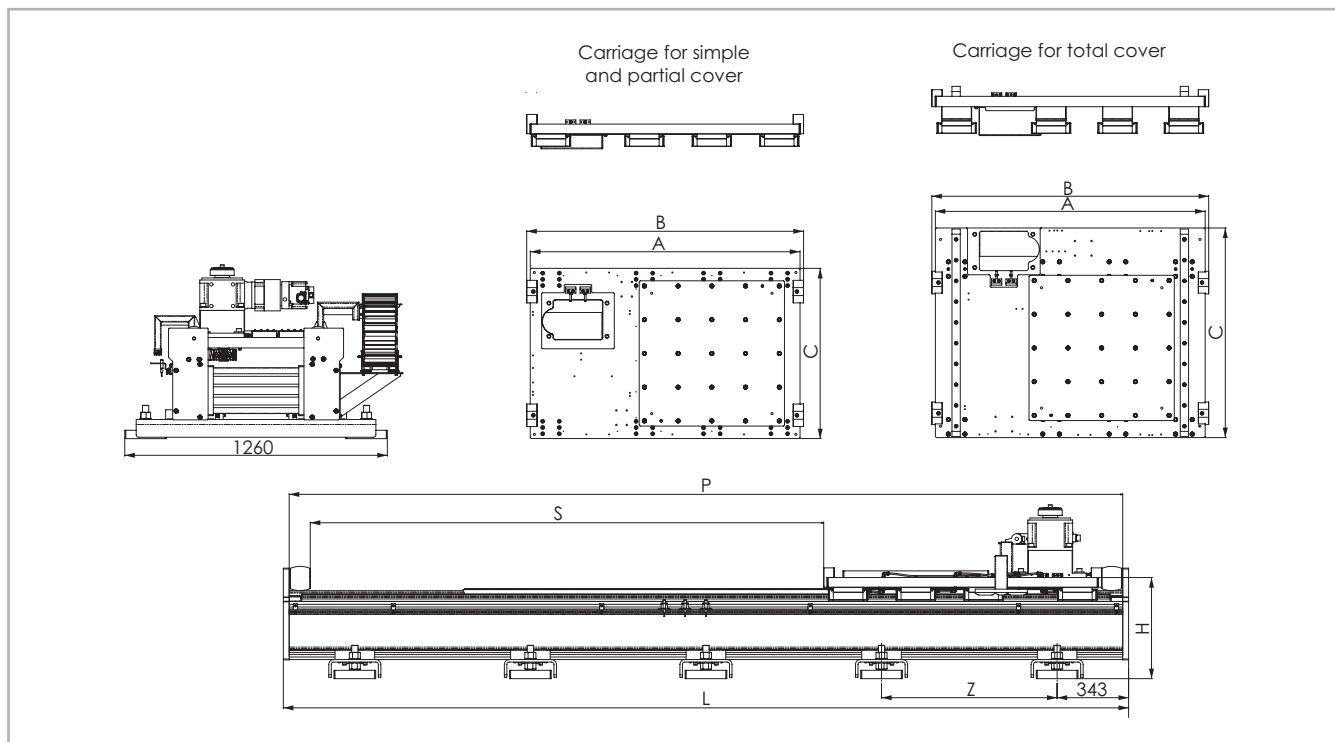


Fig. 12

Examples of robots

Type	Size	Robot examples			
		Brand	Model	Payload [Kg]	Weight [Kg]
RTU	280P-2	ABB	IRB460, IRB6620	110-150	900-925
		COMAU	NJ130 2.6	130	1050
		FANUC	R2000 100FH, 125L, 165F, 165FH, 165R	100-165	1090-1360
		KUKA	KR 120, 150, 180	120-180	677-1093
		STAUBLI	TX200L	80	1000

Robot examples mentioned are approximate and refer to floor mounted version. For a correct choice and size of the robot please contact our technical department.

Tab. 50

Technical data

Type	Size	Max speed [m/s]	Max acceleration [m/s ²]	Repeatability [mm]	Rail size [mm]
RTU	280P-2	2	4	± 0.05	45

Tab. 51

Rack specifications

Type	Size	Rack			Pinion		
		Module	Quality	Type	Module	Ø [mm]	Stroke per revolution [mm]
RTU	280P-2	m5	Q6	Helical teeth, hardened and ground	m5	127.32	400

Tab. 52

Axis dimensions

Type	Size	Stroke* ¹ S [mm]	Profile length P [mm]	Total length L [mm]	Height* ² H [mm]		Weight [Kg]	
					Simple and partial cover	Total cover	Simple and partial cover	Total cover
RTU	280P-2	464	2000	2056	485	556	912	1117
		964	2500	2556			984	1197
		1464	3000	3056			1130	1362
		1964	3500	3556			1205	1439
		2464	4000	4056			1349	1603
		2964	4500	4556			1421	1680
		3464	5000	5056			1567	1842
		3964	5500	5556			1641	1921
		4464	6000	6056			1785	2083

*¹ Longer strokes can be made by joining profiles (see pg. RU-33).

*² Dimension H refers from the lower surface of the adjustable foot, in fully upwards position, to the top of the carriage.
The height of the robot connecting plate must be added (see pg. RU-29)

Tab. 53
Carriage dimensions

Type	Size	A [mm]	B [mm]	C [mm]		Weight* [Kg]	
				Simple and partial cover	Total cover	Simple and partial cover	Total cover
RTU	280P-2	1300	1334	820	1005	341	487

* Including gearbox

Tab. 54
Levelling feet

Type	Size	Stroke S [mm]	Nb. of feet	Z [mm]
RTU	280P-2	464	3	685.0
		964	3	935.0
		1464	4	790.0
		1964	4	956.7
		2464	5	842.5
		2964	5	967.5
		3464	6	874.0
		3964	6	974.0
		4464	7	895.0

Tab. 55

> RTU 360-2

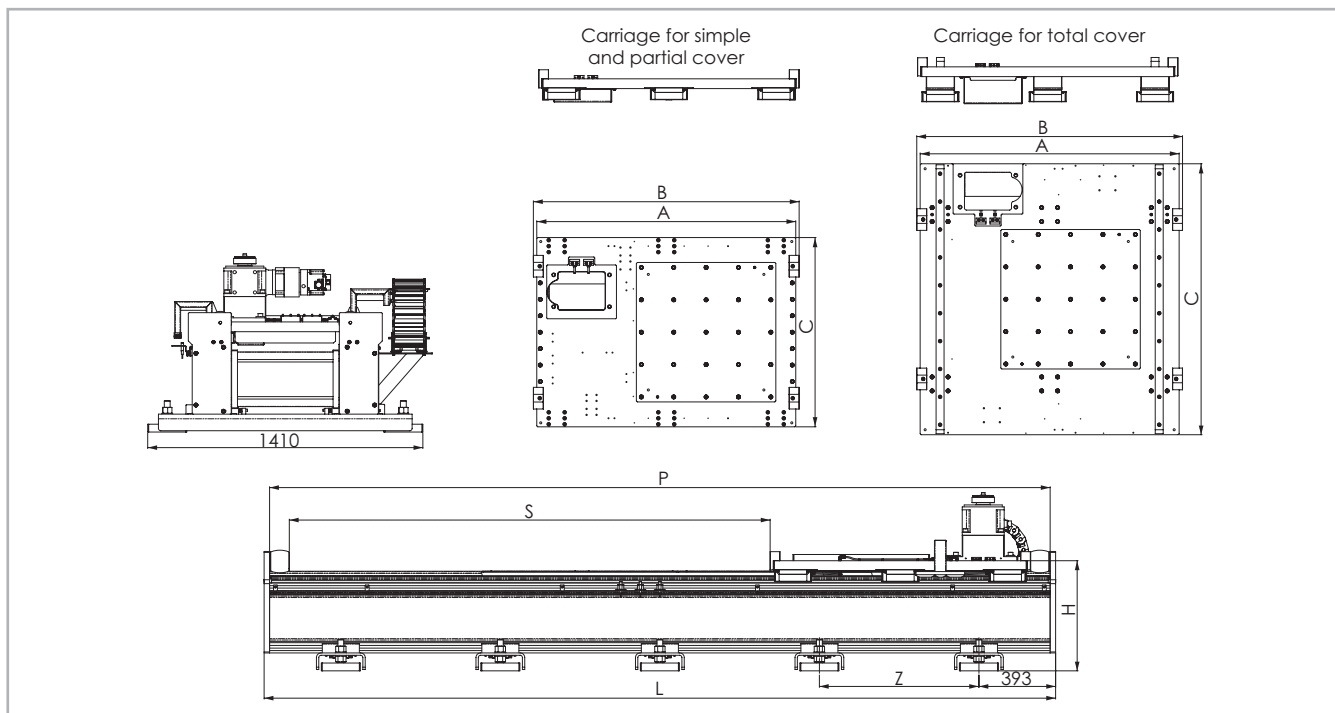


Fig. 13

Examples of robots

Type	Size	Robot examples			
		Brand	Model	Payload [Kg]	Weight [Kg]
RTU	360-2	FANUC	M900ib/360; R2000ic/210L; R2000ic/270F	210-360	1320-1540
		KUKA	KR 210, 240, 270, 300	210-300	1068-1154

Robot examples mentioned are approximate and refer to floor mounted version. For a correct choice and size of the robot please contact our technical department.

Tab. 56

Technical data

Type	Size	Max speed [m/s]	Max acceleration [m/s ²]	Repeatability [mm]	Rail size [mm]
RTU	360-2	2	4	± 0.05	45

Tab. 57

Rack specifications

Type	Size	Rack			Pinion		
		Module	Quality	Type	Module	Ø [mm]	Stroke per revolution [mm]
RTU	360-2	m5	Q6	Helical teeth, hardened and ground	m5	127.32	400

Tab. 58

Axis dimensions

Type	Size	Stroke* ¹ S [mm]	Profile length P [mm]	Total length L [mm]	Height* ² H [mm]		Weight [Kg]	
					Simple and partial cover	Total cover	Simple and partial cover	Total cover
RTU	360-2	464	2000	2056	564	636	1152	1343
		964	2500	2556			1242	1441
		1464	3000	3056			1433	1641
		1964	3500	3556			1526	17436
		2464	4000	4056			1715	1939
		2964	4500	4556			1806	2040
		3464	5000	5056			1996	2237
		3964	5500	5556			2089	2335
		4464	6000	6056			2278	2535

*¹ Longer strokes can be made by joining profiles (see pg. RU-33).

*² Dimension H refers from the lower surface of the adjustable foot, in fully upwards position, to the top of the carriage.
The height of the robot connecting plate must be added (see pg. RU-29)

Tab. 59

Carriage dimensions

Type	Size	A [mm]	B [mm]	C [mm]		Weight* [Kg]	
				Simple and partial cover	Total cover	Simple and partial cover	Total cover
RTU	360-2	1300	1334	950	1360	384	537

* Including gearbox

Tab. 60

Levelling feet

Type	Size	Stroke S [mm]	Nb. of feet	Z [mm]	
				Simple and partial cover	Total cover
RTU	360-2	464	3	635.0	685.0
		964	3	884.0	935.0
		1464	4	756.7	790.0
		1964	4	923.3	956.7
		2462	5	817.5	842.5
		2964	5	942.5	967.5
		3464	8	654.0	874.0
		3964	6	954.0	974.0
		4464	7	878.3	895.0

Tab. 61

Accessories

> Cable carrier

Robot Transfer Unit features a high stability, low-noise, long service life cable carrier. As standard the cable carrier is available with snap-open along inner or outer radius. On request, a special version for heavy duty applications is available.

Standard cable carrier

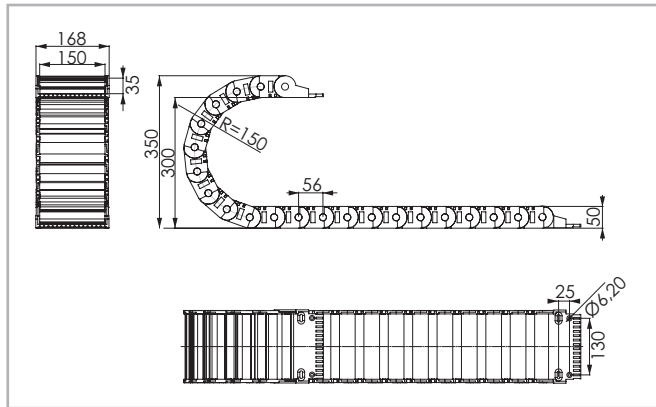


Fig. 14

Heavy duty cable carrier

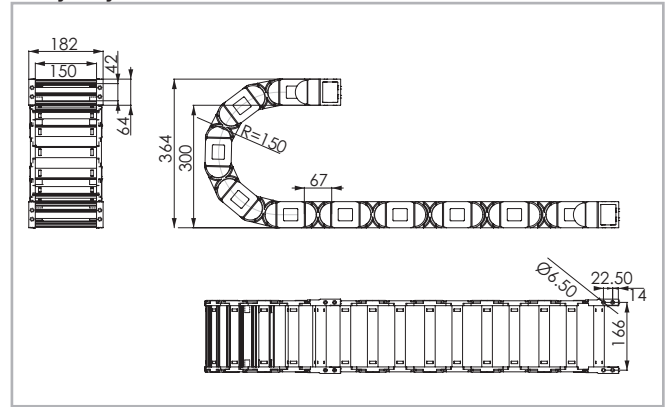


Fig. 15

The cable carrier can be mounted on the left or the right side of the axis, according to the application requirements.

For sizes 80-2 and 110-2 it is also possible to assemble the cable carrier in the center.

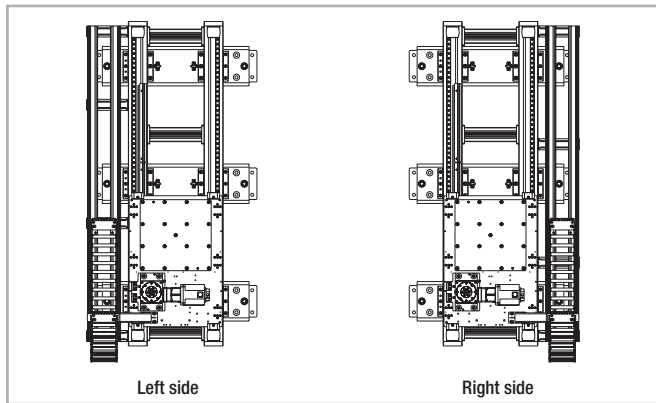


Fig. 16

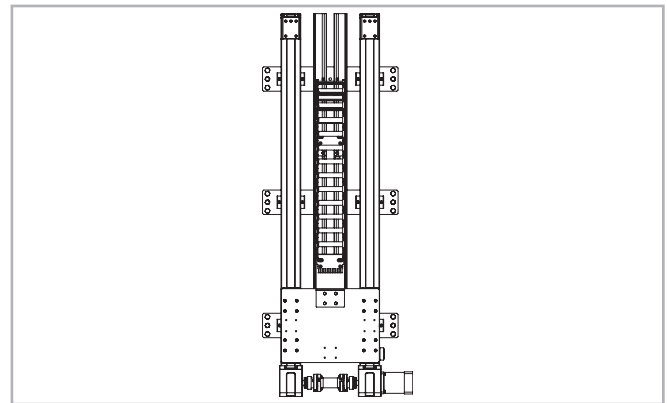


Fig. 17

> Sensors and cams

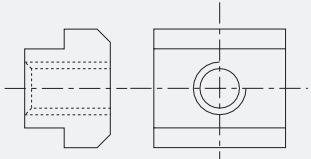
Proximity sensors holders and cams are available as accessories for all sizes of Robot Transfer Unit. The sensors housing kit is in aluminum and features T-Nuts for fixing on the axis profile. The cams are made of steel, with hardened and ground surface. Proximity sensors are not supplied by Rollon.



Fig. 18

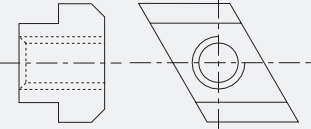
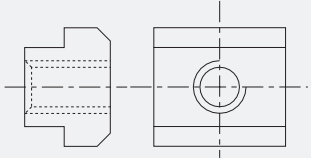
> T-Nuts

Belt driven Robot Transfer Unit

Type	Size	Hole	Code	Nut type
RTU	120-1S	M6	6000437	
	160-1S	M6	6000437	
	220-1S	M8	6001544	
	80-2	M6	1000043	
	110-2	M8	1000932	

Tab. 62

Rack and pinion driven Robot Transfer Unit

Type	Size	Hole	Code	Nut type
RTU	170-2 170-2P 280-2 360-2	M5	215.1771	
		M6	215.1772	
		M8	215.1773	
		M10	215.2125	
	280-2P	M5	215.1768	
		M6	215.1769	
		M8	215.1770	
		M10	215.2124	

Tab. 63

> Robot connecting plate

The robot connecting plate allows to assemble the robot on the carriage of the Robot Transfer Unit and it's customized to perfectly fit the mounting holes on every robot base. For belt driven Robot Transfer Unit the plate dimensions are equal to the carriage (see pg. from pg. RU -4 to RU-13, quotes A,B,C). For rack and pinion driven Robot Transfer Unit the plate is available in steel or aluminum, to be defined according to the robot base and its dimensions are shown in the following figures.

Type of robot plate	Height [mm]
Aluminum	50
Steel	32

Tab. 64

RTU280-1

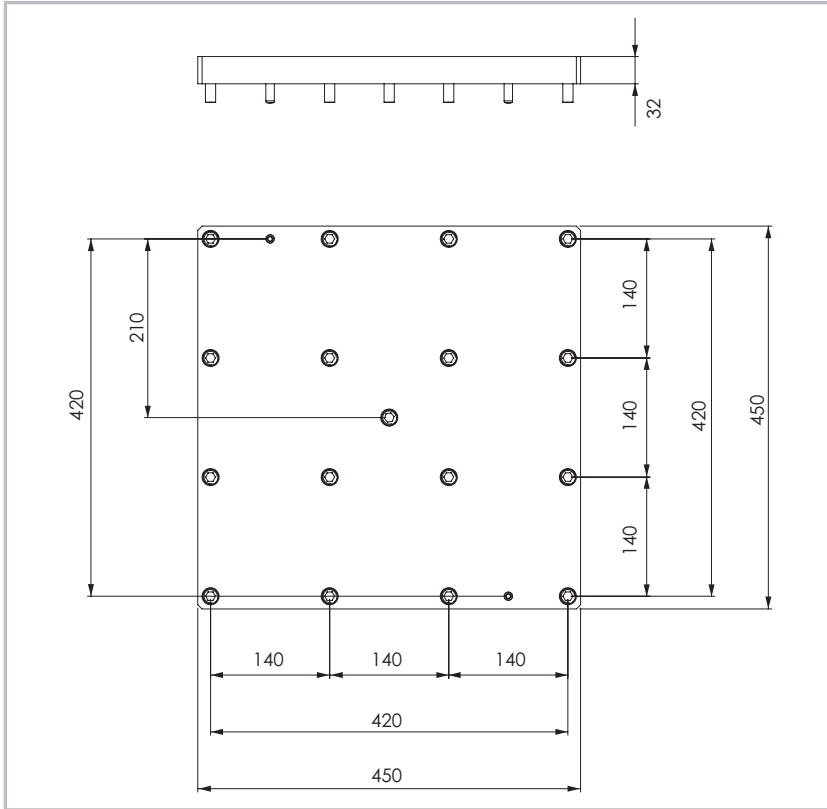


Fig. 19

RTU170-2

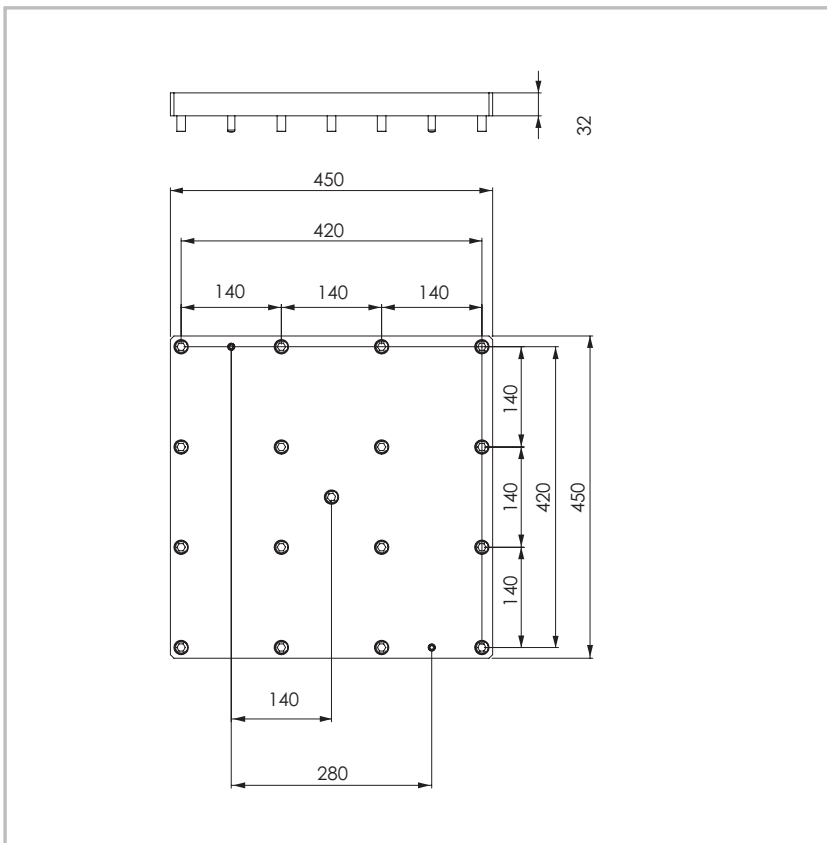


Fig. 20

RTU170P-2

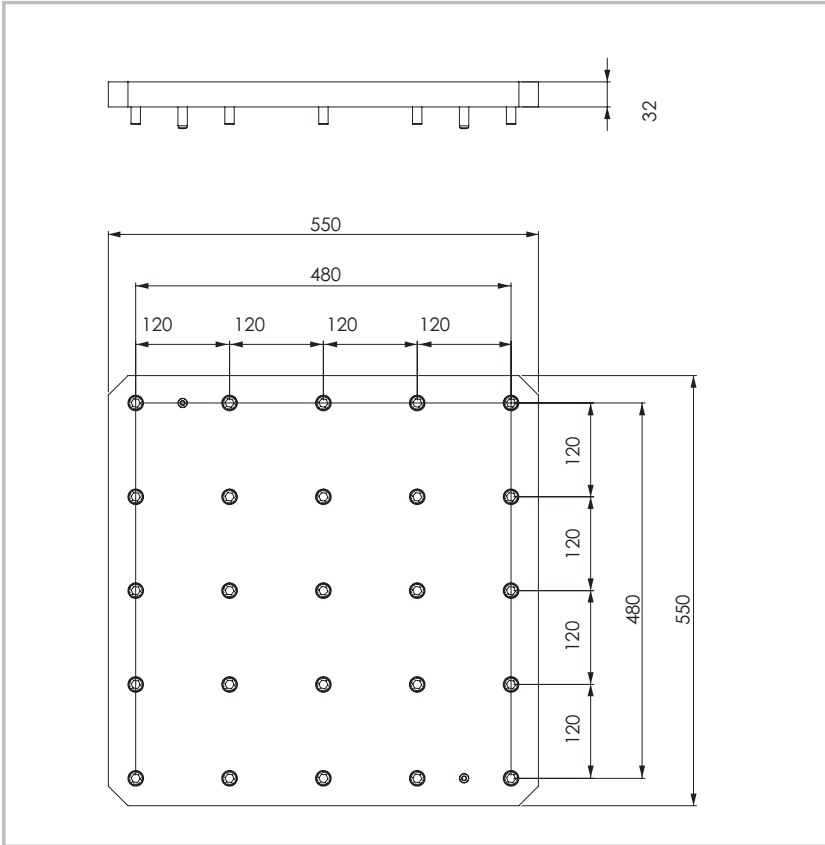


Fig. 21

RTU280-2

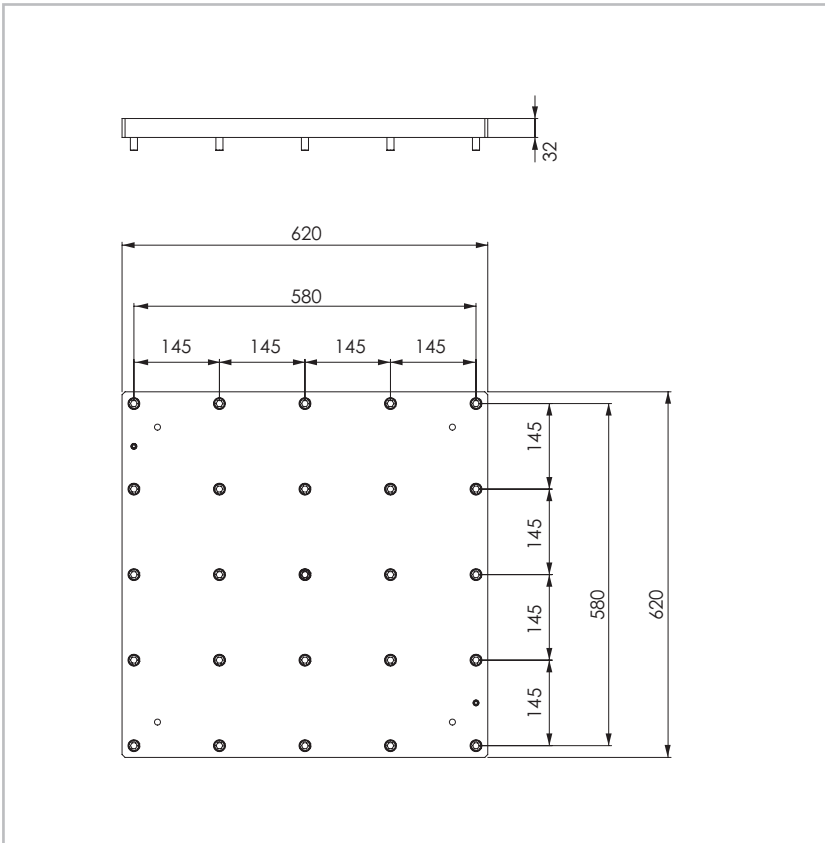


Fig. 22

RTU280P-2

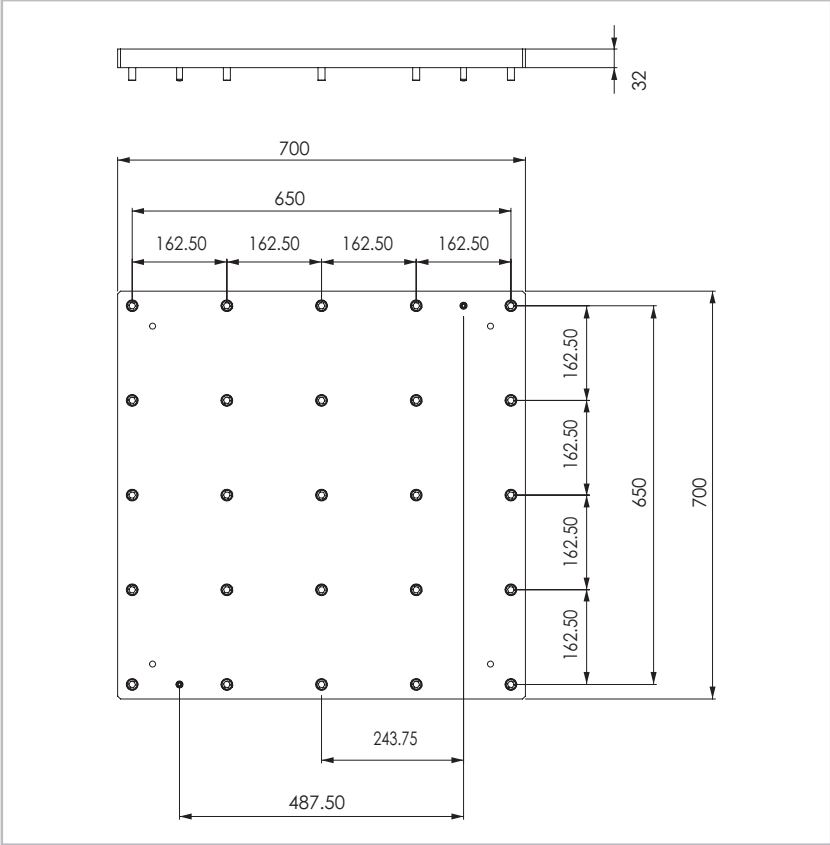


Fig. 23

RTU360-2

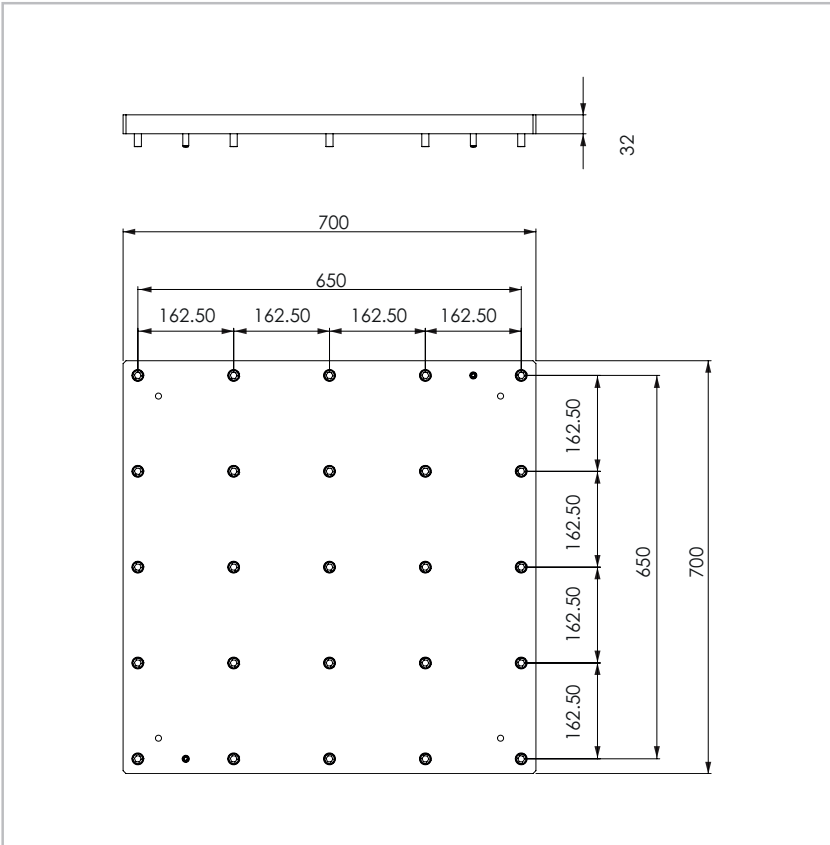



Fig. 24

RU-32

Technical instructions




> Standard strokes and joint profiles

Type	Drive	Size	Min. stroke length [mm]	Max. stroke length [mm]	Available standard stroke [mm]
	Belt				
RTU		120-1S	250	6000	250-500-750- 1000 - 1250 - 1500 - 1750 - 2000 - 2250 - 2500 - 2750 - 3000 - 3250 - 3500 - 3750 - 4000 - 4250 - 4500 - 4750 - 5000 - 5250 - 5500 - 5750 - 6000*
		160-1S			
		220-1S			
		80-2			
		110-2			

* Available only for size 120-1S and 160-1S

Tab. 65

Type	Drive	Size	Min. profile length [mm]	Max. profile length [mm]	Available standard profile length [mm]
	Rack and pinion				
RTU		280-1	2000	6000	2000 - 2500 - 3000 - 3500 - 4000 - 4500 - 5000 - 5500 - 6000
		170-2			
		170P-2			
		280-2			
		280P-2			
		360-2			

Tab. 66

Longer strokes can be achieved for rack and pinion driven Robot Transfer Unit by means of standardized Rollon joints. In this case, it is desirable to use the smallest possible number of joints by choosing pieces in maximum length. Joint profile has two supports plates at joint position.

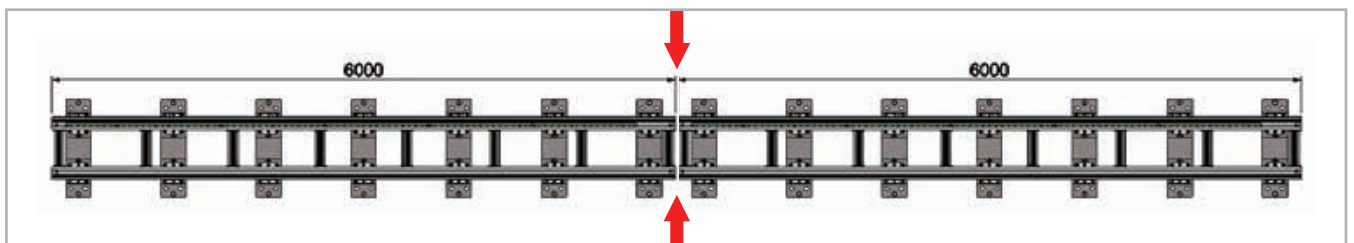


Fig. 25

> Mounting options

All robot examples in the catalog refer to floor mounted version. For more details on wall and ceiling mounting please contact our technical department.

Floor mount



Fig. 26

Wall mount



Fig. 27

Ceiling mount



Fig. 28

> Anchoring the Robot Transfer Unit

It is possible to anchor the system to the floor through the fixing holes, either by inserting the different sizes of screws that will have to be anchored in steel bushings inserted into the cement or by using threaded bars with chemical anchor bolts inserted into the cement.

Therefore, make sure that:

If using steel bushings inserted into cement, the embedment length of the anchor screw must be at least 1.5 times the diameter. For correct anchoring of the steel bushings into the cement, follow the directions provided by the bushing manufacturer:

- For M10 screws: $10 \times 1.5 = 15$ mm embedment;
- For M12 screws: $12 \times 1.5 = 18$ mm embedment;
- For M16 screws: $16 \times 1.5 = 24$ mm embedment;
- For M24 screws: $24 \times 1.5 = 36$ mm embedment.

If anchoring with threaded bars, make sure to insert the bar into the cement with a chemical anchor that is at least 9 times its diameter:

- For M10 screws: $10 \times 9 = 90$ mm embedment;
- For M12 screws: $12 \times 9 = 108$ mm embedment;
- For M16 screws: $16 \times 9 = 144$ mm embedment;
- For M24 screws: $24 \times 9 = 216$ mm embedment.

> Levelling feet

RTU series - Belt driven

Prior to placing the axis in the work position all levelling screws must be set at the end of the stroke. Once the Robot Transfer Unit is in place, the levelling screw can be used to level it and compensate eventual misalignments caused by imprecise mounting surfaces and/or normal misalignment of the support crosspieces. After levelling, the two fixing screws must be blocked.

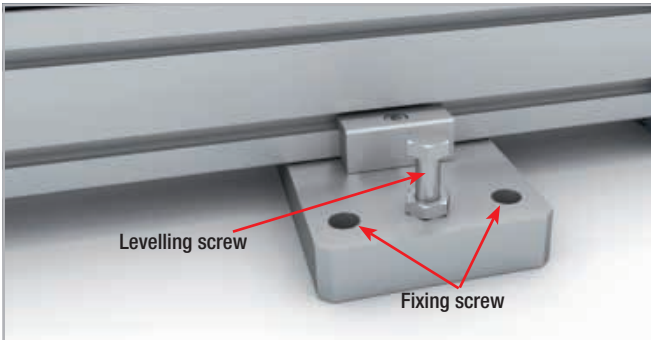


Fig. 29

Type	Size	Levelling screw	Fixing screws
RTU	120-1S	M8	2 x M10
	160-1S	M10	2 x M12
	220-1S	M10	2 x M12
	80-2	M10	2 x M12
	110-2	M10	2 x M12

Tab. 67

RTU series - Rack and pinion driven

Once the Robot Transfer Unit is in place, the fixing screws must be tightened. Then, the nuts and counter nuts on the levelling screw can be used to level it and compensate eventual misalignments caused by imprecise mounting surfaces and/or normal misalignment of the support crosspieces. After levelling, all screws must be blocked. To obtain optimal fixing, all holes in the levelling plate must be used.

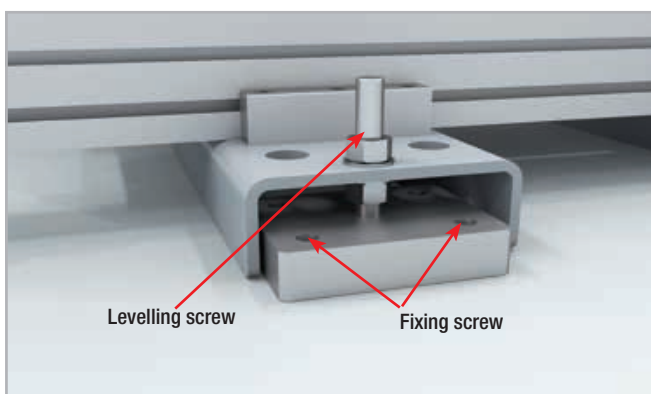


Fig. 30

Type	Size	Levelling screw	Fixing screws
RTU	280-1	M12	2 x M12
	170-2	M24	4 x M16
	170P-2	M30	4 x M16
	280-2	M30	4 x M24
	280P-2	M30	4 x M24
	360-2	M30	4 x M24

Tab. 68

> Protection options for rack and pinion driven Robot Transfer Unit

Simple cover - Code S

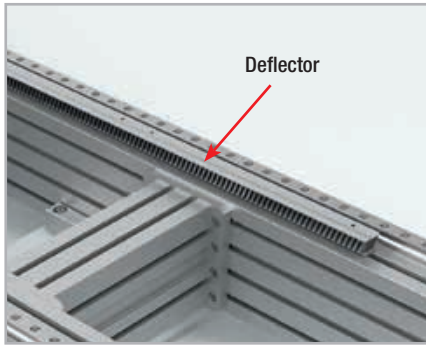


Fig. 31

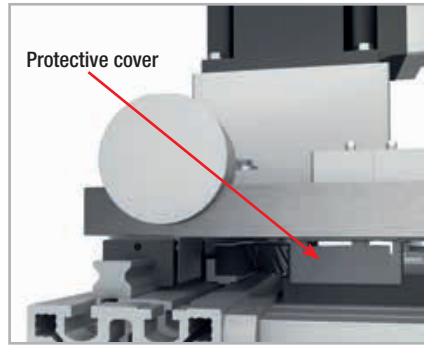


Fig. 32

The teeth of the rack are protected by a deflector and the pinion is mounted inside a protective cover.

Partial cover - Code P

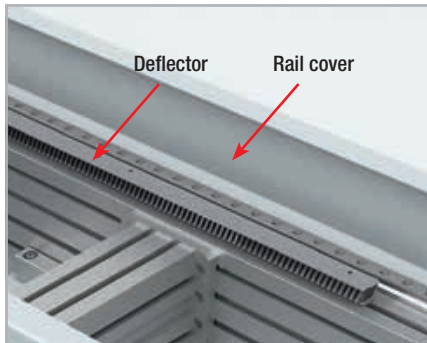


Fig. 33



Fig. 34

Rack and pinion are protected as the simple cover version. A dedicated cover for the rails is added to improve operation in dirty environments.

Total cover - Code T

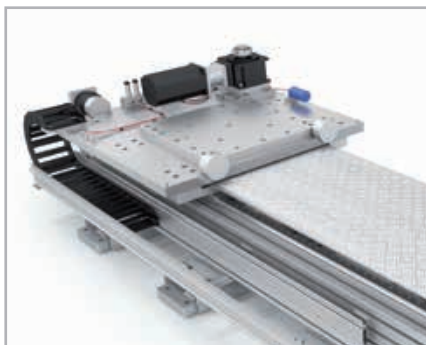


Fig. 35

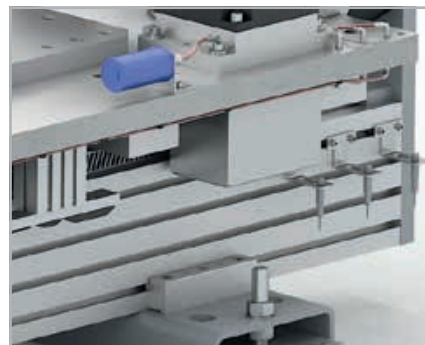


Fig. 36

The teeth of the rack are protected by a deflector and the pinion is mounted inside a protective cover. The combination of a walkable cover and a wider carriage encloses the system and further improves the protection against foreign objects.

> Gearboxes

RTU series - Rack and pinion driven

Each size of rack and pinion Robot Transfer Unit is provided with a pre-selected gearbox. D are hypoid bevel gearboxes, featuring low backlash and a wide range of reduction ratio, ideal for high load applications. Reduction ratio has to be determined in function of the application.

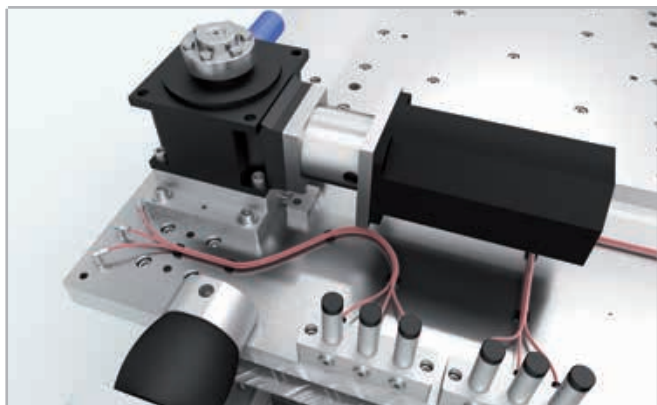


Fig. 37

The Robot Transfer Unit is delivered with the gearbox assembled on it.

Type	Size	Gearbox (included)	Weight [Kg]
RTU	280-1	D090	9.5
	170-2	D090	9.5
	170P-2	D115	15.5
	280-2	D130	23.5
	280P-2	D140	32.5
	360-2	D140	32.5

Tab. 69

RTU series - Belt driven

RTU80-2 and RTU110-2 are provided with a pre-selected gearbox. Type MP planetary gearboxes have low backlash and a wide range of reduction ratio. Reduction ratio has to be determined in function of the application.

The Robot Transfer Unit is delivered with the gearbox assembled on it.

Type	Size	Gearbox (included)	Weight [Kg]
RTU	80-2	MP080	4
	110-2	MP130	12

Tab. 70

On other sizes the gearbox can be installed independently. The table below shows the gearbox types suggested on floor mounted configuration, and the code for their assembly kit. The assembly kit includes: shrink disk; adapter plate; fixing hardware. For further information on the mounting procedure, to use other gearboxes, or for vertical mounting orientation, please contact our Technical Department.

Type	Size	Gearbox (not included)	Kit code
RTU	120-1S	P3	G000824
		MP080	G000826
		LC90; MPV01; NP025S; PE4	G000827
		MP105	G000830
		PE3; NP015S; LC070	G001078
		SP060; PLN070	G000829
		SP075; PLN090	G000859
		SW040	G000866
	160-1S	MP130	G000482
		LC120; MPV02; NP035S; PE5	G000483
		LC090; NP025S; PE4	G000525
		MP105	G000527
		SP075; PLN090	G000526
		SW050	G000717
	220-1S	MP130	G002785
		MP105	G002786
		LP120; LC120; PE5	G002787
		SP100	G002788

Tab. 71

> Lubrication of the rack and pinion driving system

The grease is distributed evenly on the rack through a felt pinion placed at the very side of the driving pinion and fed by a 125 ml grease tank installed in the upper side of the carriage. The grease tank can be regulated to distribute the lubricant over time according to the application requirements (average life ca. 1 year).

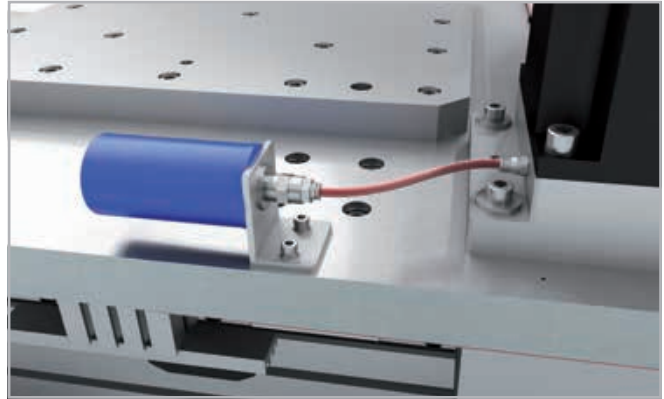


Fig. 38

> Lubrication of the blocks

RTU series - Belt driven

For RTU 120-1S, RTU 160-1S and RTU 220-1S the ball bearing carriages are fitted with a retention cage that eliminates “steel-steel” contact between adjacent revolving parts and prevents misalignment of these in the circuits. This system guarantees a long interval between maintenances: every 2000 km or 1 year of use, based on the value reached first. For RTU 80-2 and RTU 110-2 special lubrication reservoirs are mounted on the front plates of the linear blocks which continuously provide the necessary amount of grease to the ball raceways under load. These lubrication reservoirs considerably reduce the frequency of lubrication of the module. This system guarantees a long interval between maintenances: every 5000 km or 1 year of use, based on the value reached first. Lubrication must be delivered manually, using lithium soap grease of class NLGI 2, through the specific nipples placed on the side of the carriage as shown in the pictures below. If a longer service life is required or in case of high dynamic or high loaded applications please contact our offices for further verification.

Quantity of lubricant necessary for re-lubrication of each block:

Type	Size	Lubricant [cm ³]
RTU	120-1S	0.7
	160-1S	1.4
	220-1S	2.4
	80-2	2.8*
	110-2	4.8*

* Quantity for each carriage

Tab. 72

RTU 80-2, RTU 110-2

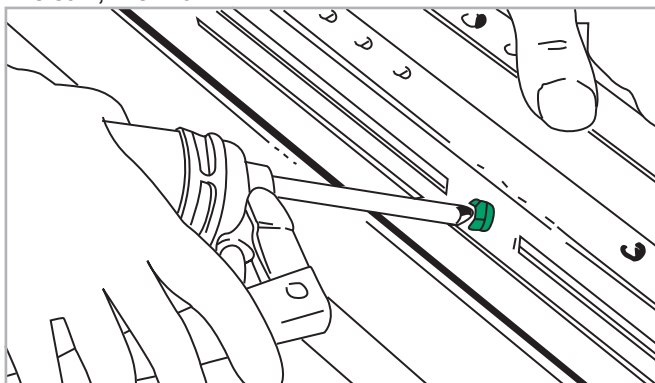


Fig. 39

RTU 120-1S, RTU 160-1S, RTU 220-1S

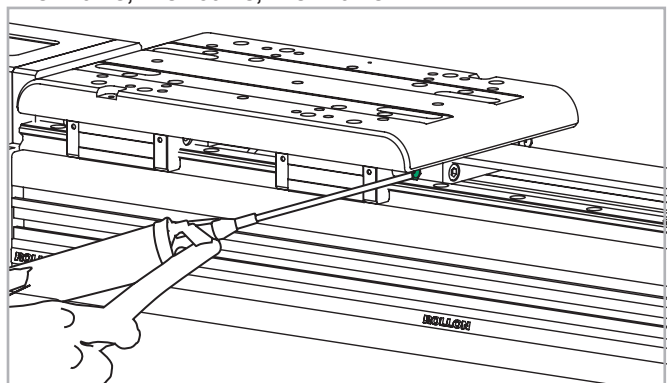


Fig. 40

RTU series - Rack and pinion driven

Lubrication must be applied manually, using grease type Shell Gadus S4 V45AC, through the specific nipples mounted on a distribution kit on the upper side of the carriage. This system guarantees an interval between maintenances of 2000 km or 1 year of use, based on the value reached first. On request, grease can be delivered automatically by means of 15ml tanks, one for each block. The tanks are mounted on a distribution kit and each greasing point is independent from the others. To further reduce the need for maintenance, grease can also be delivered by an automatic battery operated lubricator with a capacity of 250 ml. The lubricator is programmed on its display panel and a special distribution kit feeds the blocks. The lubrication unit also notifies when it's empty or if any inconvenience occurs in one of the lubrication channels.

Quantity of lubricant necessary for re-lubrication of each block:

Type	Size	Lubricant [cm ³]
RTU	280-1	5.0
	170-2	3.0
	170P-2	5.0
	280-2	5.9
	280P-2	6.5
	360-2	6.5

Tab. 73

Manual lubrication



Fig. 41

Automatic lubrication



Fig. 42

Automatic lubrication with CPU



Fig. 43

> Profile specifications

RTU 120-1S

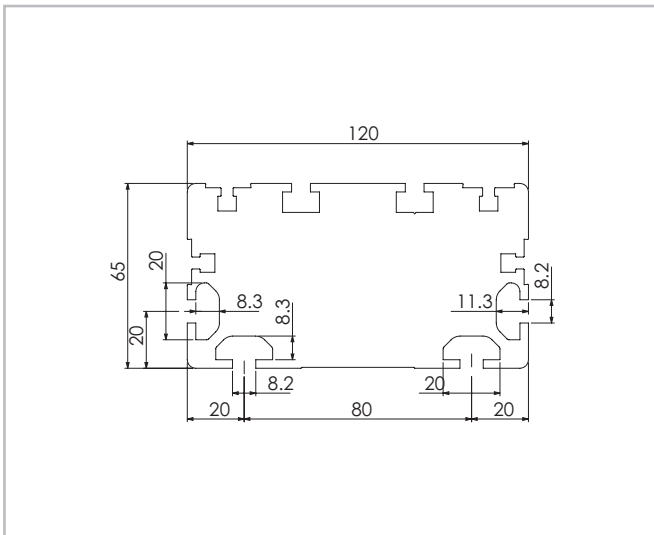


Fig. 44

RTU 160-1S

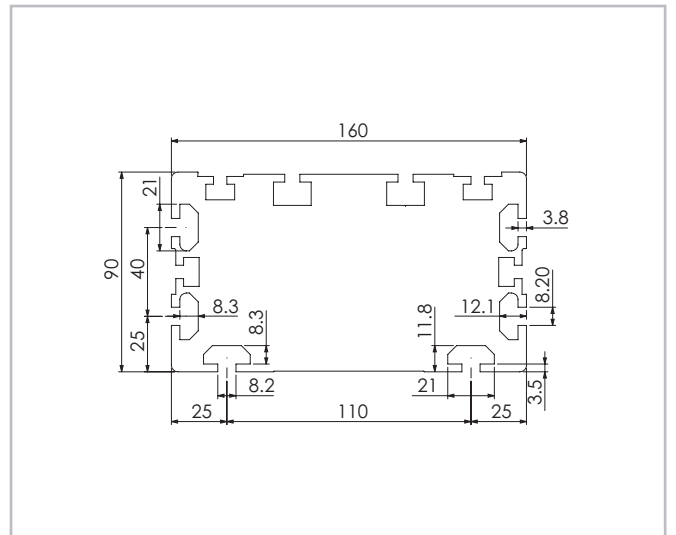


Fig. 45

RTU 220-1S

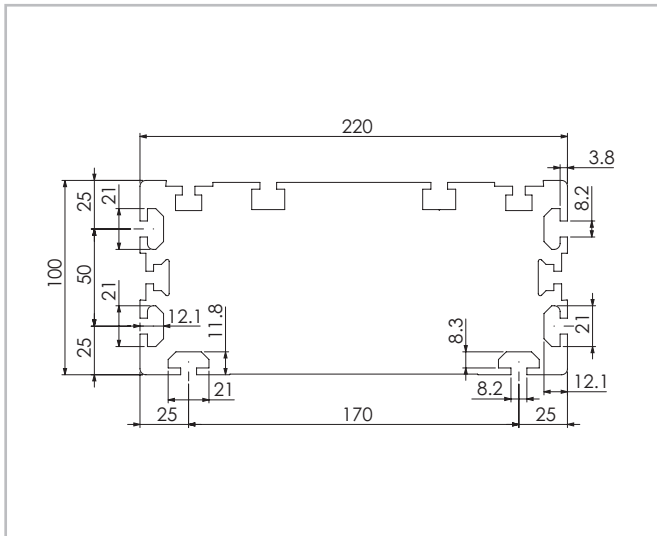


Fig. 46

RTU 80-2

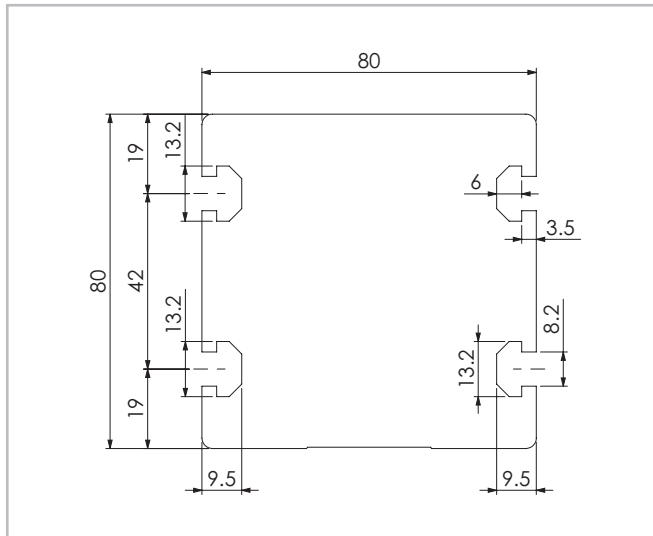


Fig. 47

RTU 110-2

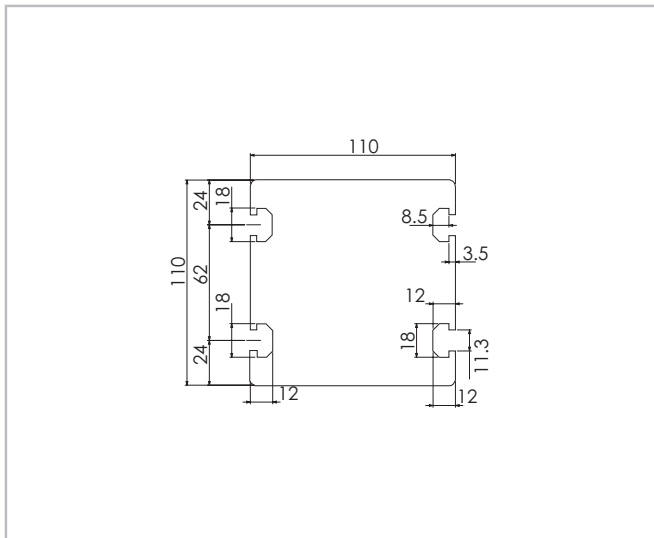


Fig. 48

RTU 280-1, RTU 280-2 and RTU 280P-2

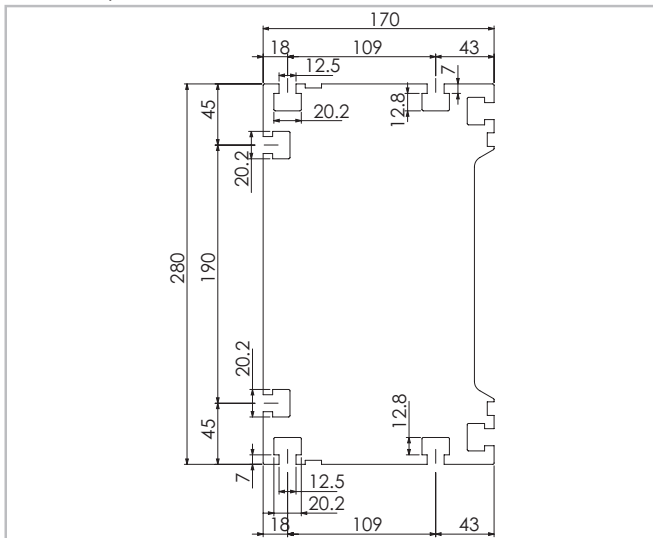


Fig. 49

RTU 170-2 and RTU 170P-2

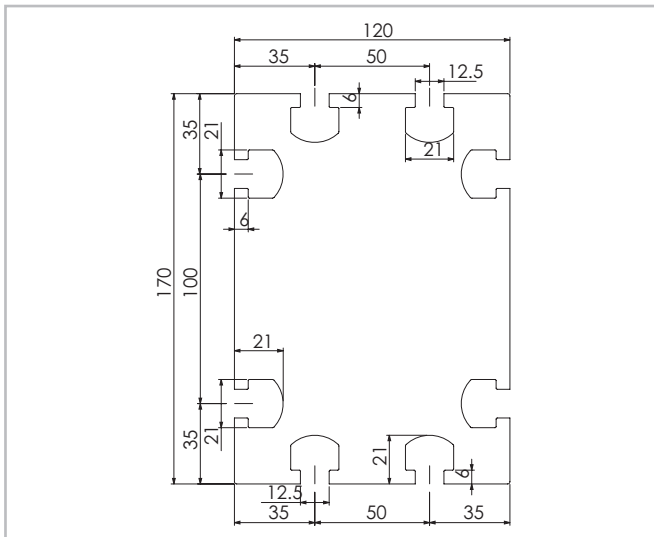


Fig. 50

RTU 360-2

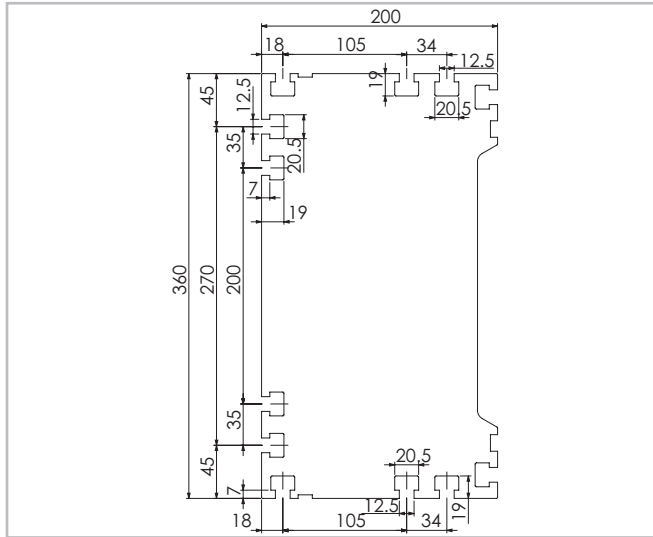


Fig. 51

Ordering key

> RTU series - Belt driven

RTU	220-1S	-3760	R L				
				Chain see pg. RU-28 R = right ; L = left ; C = center (80-2 and 110-2 only)			
				L = total length of the unit			
				Size see pg. RU-4 to RU-13			
				Type see pg. RU-4 to RU-13			

Ordering example: RTU220-1-3000-R.
 In order to create identification codes for Robot Transfer Unit, you can visit: <http://configureactuator.rollon.com>

> RTU series - Rack and pinion driven

RTU	360-2	-3556	-P	R L			
				Chain see pg. RU-28 (R = right ; L = left)			
				Cover type S,P, T see pg. RU-36			
				L = total length of the unit			
				Size see pg. RU-16 to RU-27			
				Type see pg. RU-16 to RU-27			

Ordering example: RTU360-2-3000-PR.
 In order to create identification codes for Robot Transfer Unit, you can visit: <http://configureactuator.rollon.com>



Warnings and legal notes



Before incorporating the partly completed machinery, we recommend consulting this chapter carefully, in addition to the assembly manual supplied with the individual modules. The information contained in this chapter and in the manuals for the individual modules, is provided by highly qualified and certified personnel, possessing adequate competence in incorporating the partly completed machinery.



Before incorporating the partly completed machinery, we recommend consulting this chapter carefully, in addition to the assembly manual supplied with the individual modules. The information contained in this chapter and in the manuals for the individual modules, is provided by highly qualified and certified personnel, possessing adequate competence in incorporating the partly completed machinery.



Precaution in installation and handling operations. Significantly heavy equipment.



When handling the axis or system of axes, always make sure that the support or anchoring surfaces do not leave room for bending.



In order to stabilize the axis or system of axes, before handling it is mandatory to securely block the mobile parts. When moving axes with vertical translation, it is mandatory to use the vertical movement to put all of the axes at the corresponding lower limit switch.



Do not overload. Do not subject to torsion stress.



Do not leave exposed to atmospheric agents.



Before mounting the motor on the gearbox, it is advisable to perform a pre-test of the motor itself, without connection to the gear unit. The testing of this component was not carried out by the manufacturer of the machine. It will therefore be the responsibility of the customer of Rollon to perform the testing of the same, in order to verify its correct operation.



The manufacturer cannot be considered responsible for any consequences derived from improper use or any use other than the purpose the axis or system of axes was designed for, or derived from failure to comply, during incorporation phases, with the rules of Good Technique and with what is indicated in this manual.



Avoid damage. Do not operate with inadequate tools



Warning: moving parts. Do not leave objects on the axis



Special installations: check the depth of the threads on moving elements



Make sure that the system has been installed on a level floor surface.



In use, accurately comply with the specific performance values declared in the catalog or, in particular cases, the load and dynamic performance characteristics requested in the phase prior to design.



For modules or parts of modular systems with vertical movement, it is mandatory to mount self-braking motors to neutralize the risk of the axis dropping.



The images in this manual are to be considered merely an indication and not binding; therefore, the supply received could be different from the images contained in this manual, and Rollon S.p.A has deemed it useful to insert only one example.



Systems supplied by Rollon S.p.A. were not designed/envisaged to operate in ATEX environments.

> Residual risks

- Mechanical risks due to the presence of moving elements.
- Risk of fire resulting from the flammability of the belts used on the axes, for temperatures in excess of 250 °C in contact with the flame.
- The risk of the Z axis dropping during handling and installation operations on the partly completed machinery, before commissioning.
- Risk of the Z axis dropping during maintenance operations in the case of a drop in the electrical power supply voltage.
- Crushing hazard near moving parts with divergent and convergent motion.
- Shearing hazard near moving parts with divergent and convergent motion.
- Cutting and abrasion hazards.

> Basic components



The Partly Completed Machinery shown in this catalog is to be considered a mere supply of simple Cartesian axes and their accessories agreed when the contract is stipulated with the client. The following are therefore to be considered excluded from the contract:

1. Assembly on the client's premises (direct or final)
2. Commissioning on the client's premises (direct or final)
3. Testing on the client's premises (direct or final)

It is therefore understood that the aforementioned operations in points 1., 2., and 3. are not chargeable to Rollon.

Rollon is the supplier of Partly Completed Machinery, the (direct or final) client is responsible for testing and safely checking all equipment which, by definition, cannot be theoretically tested or checked at our facilities where the only movement possible is manual movement (for example: motors or reduction gears, cartesian axes movements that are not manually operated, safety brakes, stopper cylinders, mechanical or induction sensors, decelerators, mechanical limit switches, pneumatic cylinders, etc.). The partly completed machine must not be commissioned until the final machine, in which it is to be incorporated, has been declared compliant, if necessary, with the instructions in Machinery Directive 2006/42/CE.

> Instructions of an environmental nature

Rollon operates with respect for the environment, in order to limit environmental impact. The following is a list of some instructions of an environmental nature for correct management of our supplies. Our products are mainly composed of:

Material	Details of the supply
Aluminum alloys	Profiles, plates, various details
Steel with various composition	Screws, racks and pinions, and rails
Plastic	PA6 – Chains PVC – Covers and sliding block scrapers
Rubber of various types	Plugs, seals
Lubrication of various types	Used for the lubrication of sliding rails and bearings
Rust proof protectione	Rust proof protection oil
Wood, polyethylene, cardboard	Transport packaging

At the end of the product's life cycle, it is therefore possible to recover the various elements, in compliance with current regulations on waste issues.

> Safety warnings for handling and transport

- The manufacturer has paid the utmost attention to packaging to minimize risks related to shipping, handling and transport.
- Transport can be facilitated by shipping certain components dismantled and appropriately protected and packaged.
- Handling (loading and unloading) must be carried out in compliance with information directly provided on the machine, on the packing and in the user manuals.
- Personnel authorized to lift and handle the machine and its components shall possess acquired and acknowledged skills and experience in the specific sector, besides having full control of the lifting devices used.
- During transport and/or storage, temperature shall remain within the allowed limits to avoid irreversible damage to electric and electronic components.
- Handling and transport must be carried out with vehicles presenting adequate loading capacity, and the machines shall be anchored to the established points indicated on the axes.
- DO NOT attempt to bypass handling methods and the established lifting points in any way.
- During handling and if required by the conditions, make use of one or more assistants to receive adequate warnings.
- If the machine has to be moved with vehicles, ensure that they are adequate for the purpose, and perform loading and unloading without risks for the operator and for people directly involved in the process.
- Before transferring the device onto the vehicle, ensure that both the machine and its components are adequately secured, and that their profile does not exceed the maximum bulk allowed. Place the necessary warning signs, if necessary.
- DO NOT perform handling with an inadequate visual field and when there are obstacles along the route to the final location.
- DO NOT allow people to either transit or linger within the range of action when lifting and handling loads.
- Download the axes just near the established location and store them in an environment protected against atmospheric agents.
- Failure to comply with the information provided might entail risks for the safety and health of people, and can cause economic loss.
- The Installation Manager must have the project to organize and monitor all operative phases.
- The Installation Manager shall ensure that the lifting devices and equipment defined during the contract phase are available.
- The Manager of the established location and the Installation Manager shall implement a “safety plan” in compliance with the legislation in force for the workplace.
- The “safety plan” shall take into account all surrounding work-related

activities and the perimeter spaces indicated in the project for the established location.

- Mark and delimit the established location to prevent unauthorized personnel from accessing the installation area.
- The installation site must have adequate environmental conditions (lighting, ventilation, etc.).
- Installation site temperature must be within the maximum and minimum range allowed.
- Ensure that the installation site is protected against atmospheric agents, does not contain corrosive substances and is free of the risk of explosion and/or fire.
- Installation in environments presenting a risk of explosion and/or of fire must ONLY be carried out if the machine has been DECLARED COMPLIANT for such use.
- Check that the established location has been correctly fitted out, as defined during the contract phase and based on indications in the relative project.
- The established location must be fitted out in advance to carry out complete installation in compliance with the defined methods and schedule.

> Note

- Evaluate in advance whether the machine must interact with other production units, and that integration can be implemented correctly, in compliance with standards and without risks.
- The manager shall assign installation and assembly interventions ONLY to authorized technicians with acknowledged know-how.
- State of the art connections to power sources (electric, pneumatic, etc.) must be ensured, in compliance with relevant regulatory and legislative requirements.
- “State of the art” connection, alignment and levelling are essential to avoid additional interventions and to ensure correct machine function.
- Upon completion of the connections, run a general check to ascertain that all interventions have been correctly carried out and compliance with requirements.
- Failure to comply with the information provided might entail risks for the safety and health of people, and can cause economic loss.

> Transport

- Transport, also based on the final destination, can be done with different vehicles.
- Perform transport with suitable devices that have adequate loading capacity.
- Ensure that the machine and its components are adequately anchored to the vehicle.

> Handling and lifting

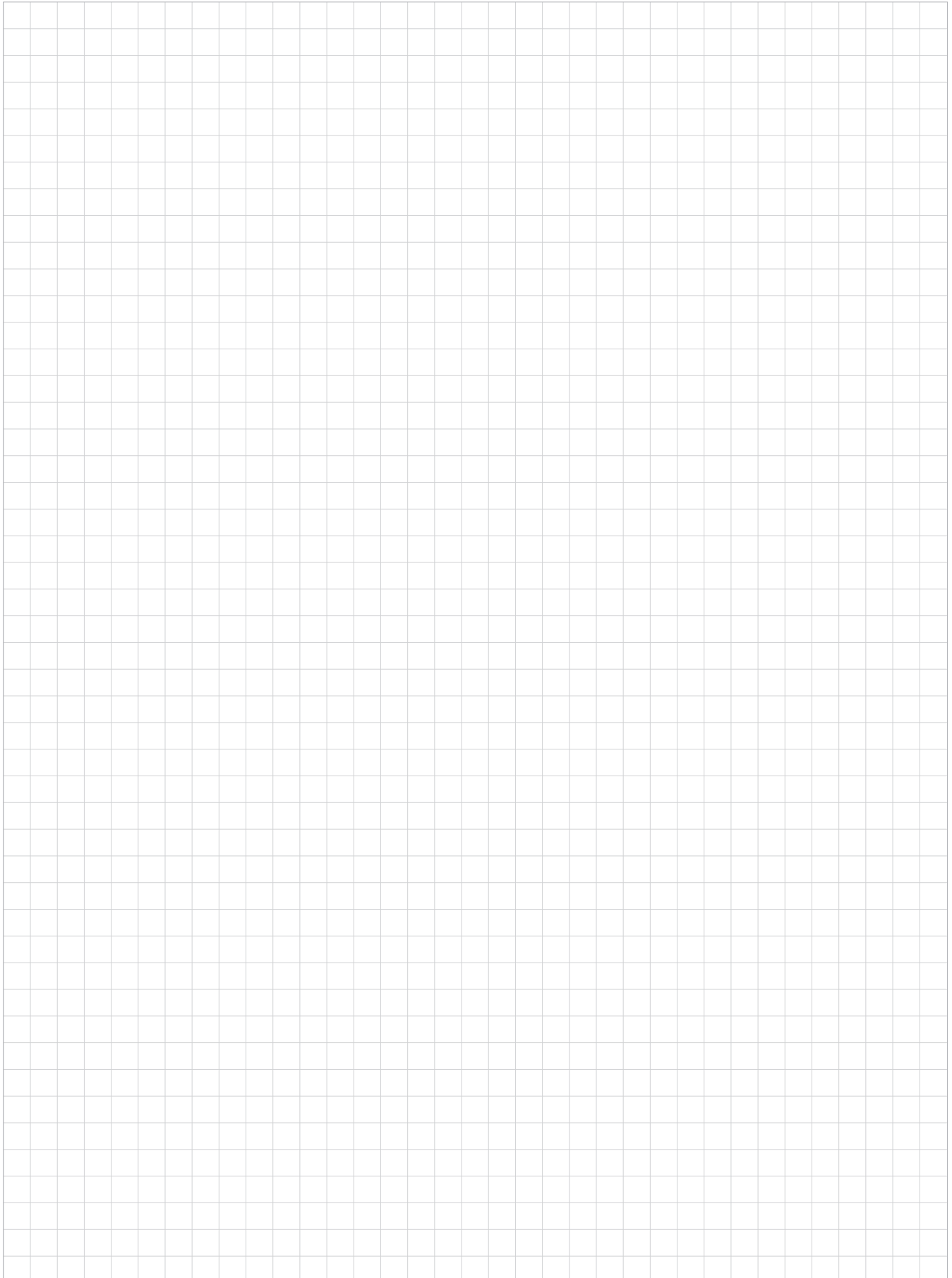
- Correctly connect the lifting devices to the established points on the packages and/or on the dismantled parts.
- Before handling, read the instructions, especially safety instructions, provided in the installation manual, on the packages and/or on the dismantled parts.
- DO NOT attempt, in any way, to bypass handling methods and the established lifting, moving and handling points of each package and/or dismantled part.
- Slowly lift the package to the minimum necessary height and move it with the utmost caution to avoid dangerous oscillations.
- DO NOT perform handling with an inadequate visual field and when there are obstacles along the route to reach the final location.
- DO NOT allow people to either transit or linger within the range of action when lifting and handling loads.
- Do not stack packages to avoid damaging them, and reduce the risk of sudden and dangerous movements.
- In case of prolonged storage, regularly ensure that there are no variations in the storage conditions of the packages.

> Check axis integrity after shipment

Every shipment is accompanied by a document ("Packing list") with the list and description of the axes.

- Upon receipt check that the material received corresponds to specifications in the delivery note.
- Check that packaging is perfectly intact and, for shipments without packaging, check that each axis is intact.
- In case of damages or missing parts, contact the manufacturer to define the relevant procedures.

Notes 

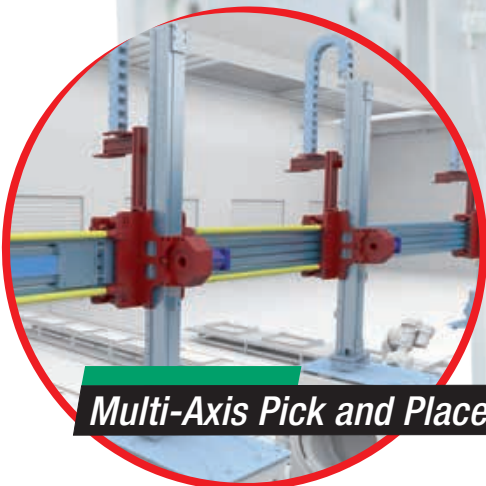
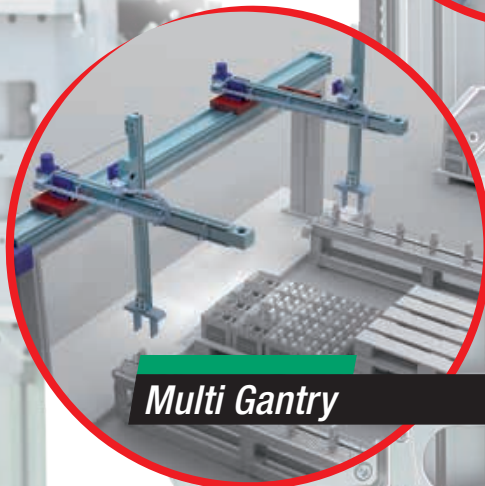
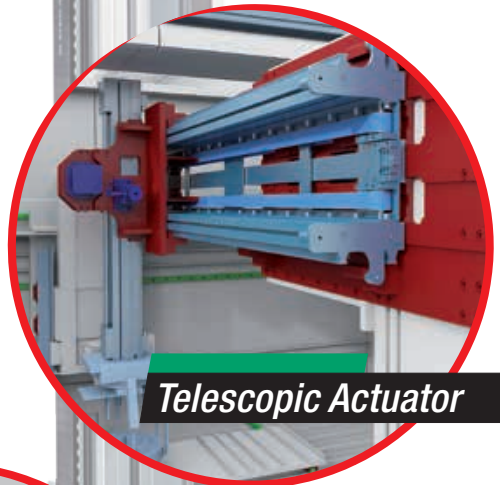
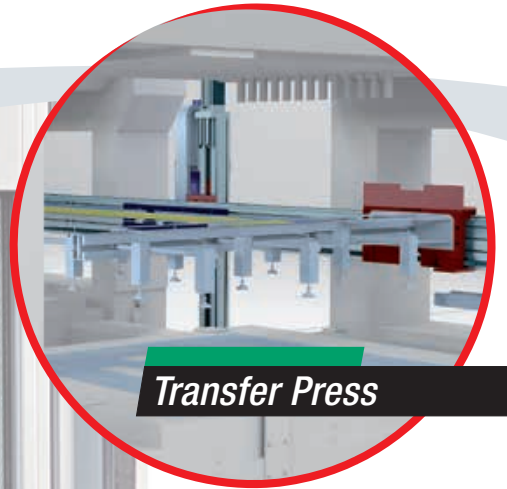


Are you out of space on your factory layout?
Do you need to manage higher payloads?
Do you need higher speed and acceleration?

Cartesian robots can be the perfect solution for these requirements. Our line of multi-axis solutions works in synergy with anthropomorphic robots to further improve the productivity of your factory automation.

Actuator System Line

Integrated actuators for industrial automation, used in applications in several industrial sectors: automated industrial machinery, precision assembly lines, packaging lines and high speed production lines. The Actuator Line evolves to satisfy the requests of our most discerning clients.



TO SUPPORT YOU, WE DESIGN AND PRODUCE

Rollon's goal is to support you become more competitive in your markets, through technological solutions, design simplification, productivity, reliability, duration, and low maintenance.

We offer everything from individual components to specifically designed, mechanically integrated systems: the quality of our applications is an expression of our technology and competence.

ROLLONLAB: EXPERIMENTATION AND INNOVATION

RollonLab, a specialized laboratory where new products created by the R&D department are tested and optimized to perform beyond their technical limits through performance tests and strict quality controls. RollonLab also tests products in simulations of different application scenarios, to guarantee that the client receives highly competitive custom products.

SUPPORT & CUSTOMIZATION

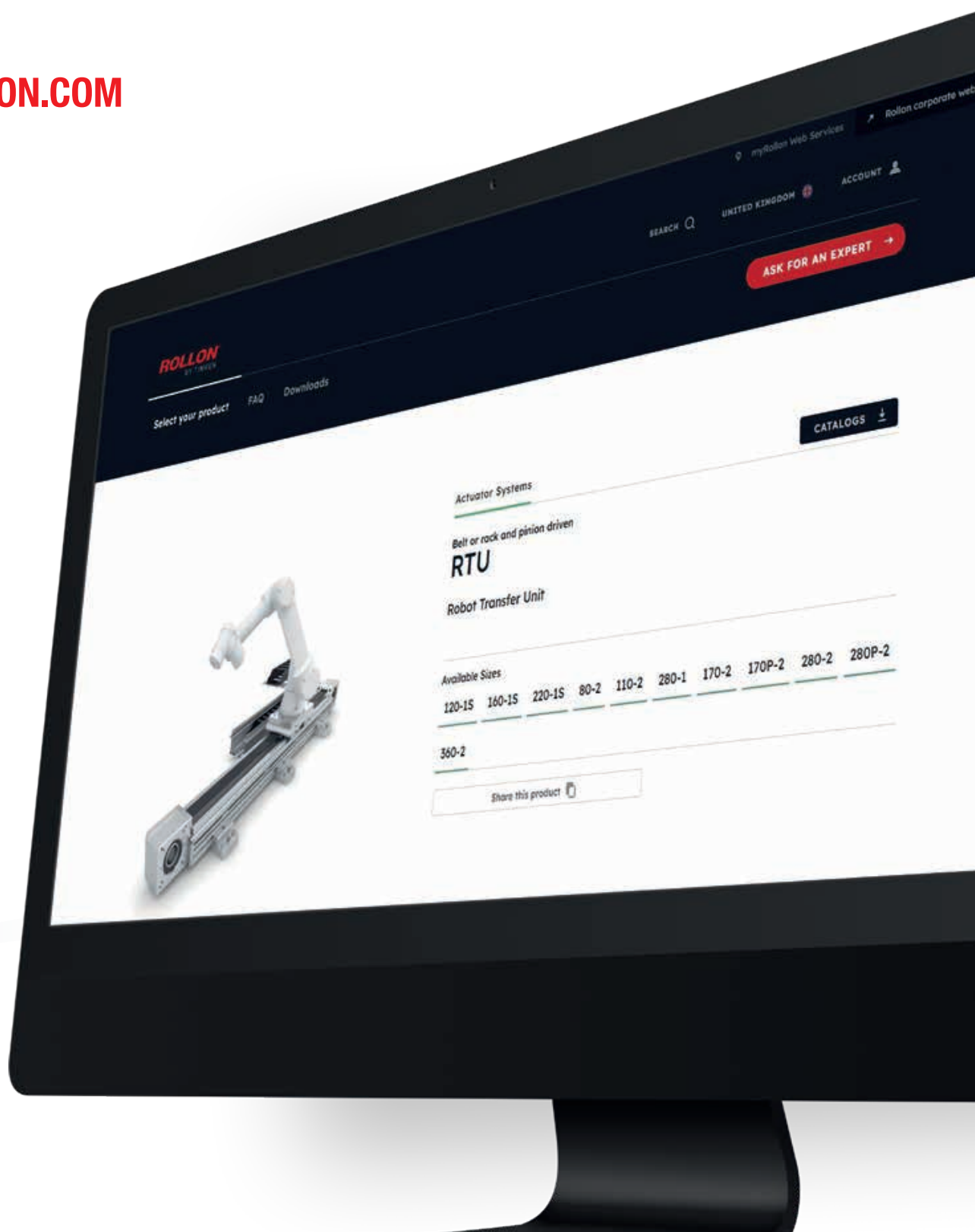
- Product training
- Custom product prototyping
- Application sizing and engineering
- 2D / 3D product drawings on demand
- On-site support for first installation and mock-ups
- Co-design service on sub-systems and full assemblies
- Internal laboratory for static abuse load and endurance tests

Thanks to the experience acquired through years of applications and research, we are able to provide high quality products specifically designed for your needs.



A NEW **DIGITAL EXPERIENCE**
SURROUNDED BY **ROLLON EXPERTS**
WHERE YOU CAN EASILY SELECT
THE PRODUCT **YOU NEED.**

MY.ROLLON.COM





Follow us:



● Rollon Branches & Rep. Offices
● Distributors

EUROPE

ROLLON S.p.A. - ITALY

Via Trieste 26
I-20871 Vimercate (MB)
Phone: (+39) 039 62 59 1
www.rollon.com - infocom@rollon.com

ROLLON GmbH - GERMANY

Bonner Strasse 317-319
D-40589 Düsseldorf
Phone: (+49) 211 95 747 0
www.rollon.de - info@rollon.de

ROLLON S.A.R.L. - FRANCE

Les Jardins d'Eole, 2 allée des Séquoias
F-69760 Limonest
Phone: (+33) (0) 4 74 71 93 30
www.rollon.fr - infocom@rollon.fr

ROLLON Ltd - UK (Rep. Office)

The Works 6 West Street Olney
Buckinghamshire, United Kingdom, MK46 5 HR
Phone: +44 (0) 1234964024
www.rollon.uk.com - ukandireland@rollon.com

AMERICA

ROLLON Corporation - USA

101 Bilby Road. Suite B
Hackettstown, NJ 07840
Phone: (+1) 973 300 5492
www.rollon.com - info@rolloncorp.com

ROLLON - SOUTH AMERICA

101 Bilby Road. Suite B
Hackettstown, NJ 07840
Phone: (+1) 973 300 5492
www.rollon.com - info@rolloncorp.com

ASIA

ROLLON Ltd - CHINA

No. 1155 Pang Jin Road,
China, Suzhou, 215200
Phone: +86 0512 6392 1625
www.rollon.cn.com - info@rollon.cn.com

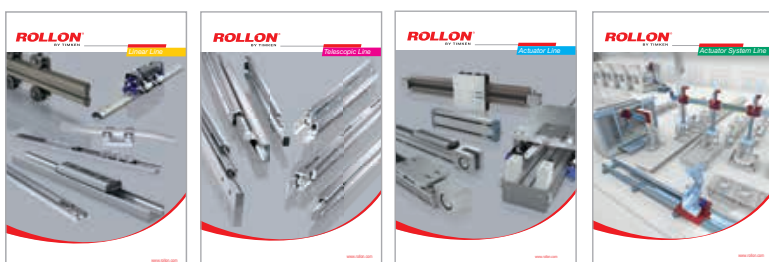
ROLLON India Pvt. Ltd. - INDIA

39-42, Electronic City, Phase-I,
Hosur Road, Bangalore-560100
www.rollonindia.in - info@rollonindia.in

ROLLON - JAPAN

〒252-0131
神奈川県相模原市緑区西橋本1-21-4
橋本屋ビル
電話番号 : (+81) 042-703-4101
www.rollon.jp - info@rollon.jp

Consult the other ranges of products



Distributor

www.linejnye.ru
e-mail: linejnye@mail.ru
Тел. +7 (499) 703-15-70
Москва

All addresses of our global sales partners can also be found at www.rollon.com

The content of this document and its use are subject to the general terms of sale of ROLLON available on the web site www.rollon.com
Changes and errors expected. The text and images may be used only with our permission.