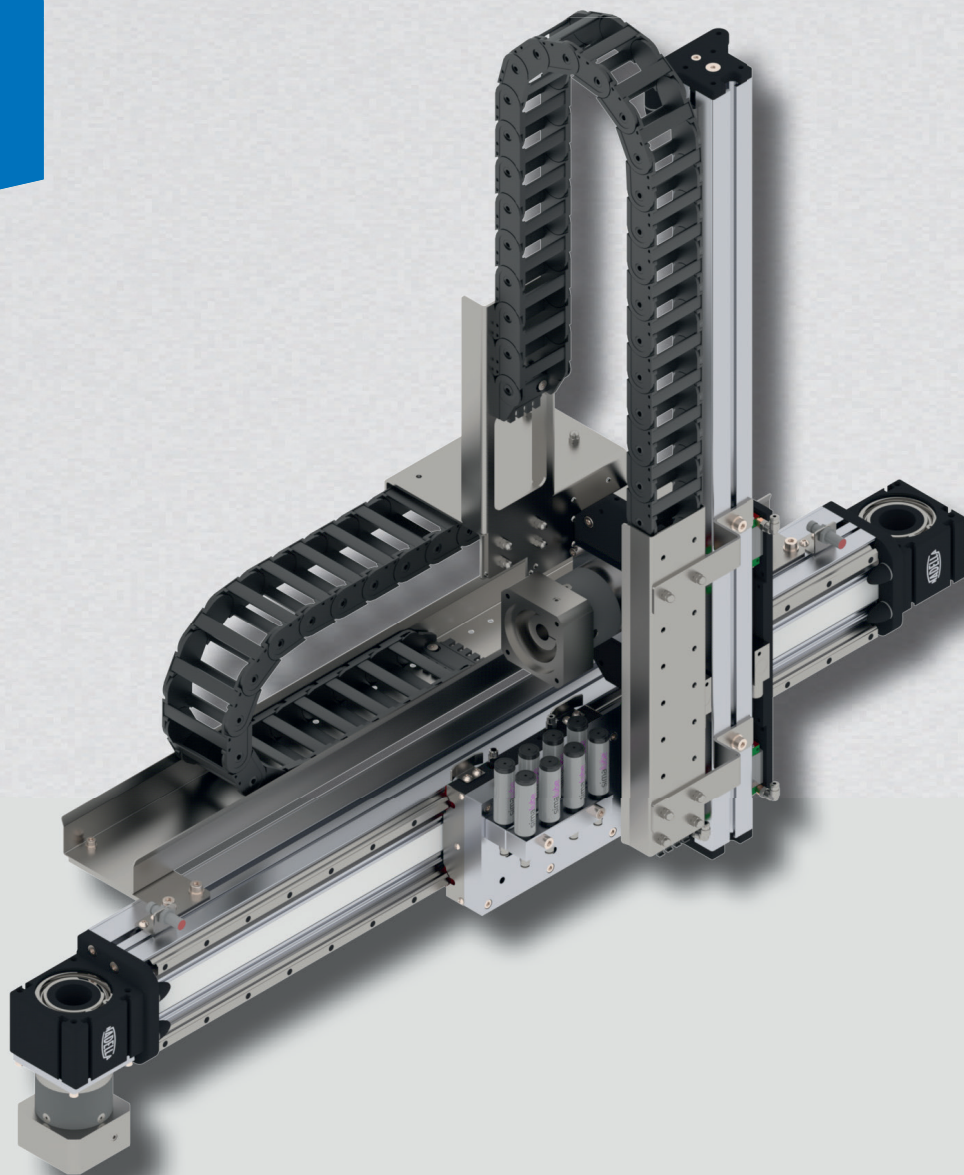


THE SPECIALIST  
FOR MOTION  
TECHNOLOGY

# LINEAR AXES & MULTI-AXIS SYSTEMS

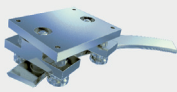




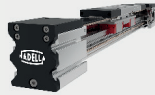
Nadella is an expert system partner for all areas of **motion technology**, with specialized manufacturer companies and a worldwide sales network.

Wherever innovative ideas, customized solutions, precision and reliability are required, developers and design engineers rely on our products and solutions.

## COMPANIES, BRANDS AND PRODUCTS OVERVIEW



Linear Guide Systems



Linear Modules



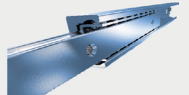
Complete Systems



Bearings and Cam Followers

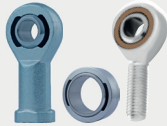


Adjusting Nuts & Rings



Telescopic Rails

**durbal**



Rod Ends and Spherical Plain Bearings



Clevises and Ball/Axial Joints



Precision Ball Screws



Rolled Ball Screws

## MILESTONES

**1930**

NADELLA foundation in France

**1958**

Founding of NADELLA GMBH in Germany

**1963**

Founding of NADELLA S.P.A. in Italy

**1984**

Start of development and sale of Nadella Linear

**2012**

New Nadella subsidiaries in China and USA

**2014**

Acquisition of DURBAL

**2018**

Acquisition of CHIAVETTE UNIFICATE

**2019**

Founding of Nadella Motion Technology

**2020**

New Nadella subsidiaries in France and Spain  
Acquisition of SHUTON and IPIRANGA

**2021**

Acquisition of DAMO

**2022**

Orchestra enters in Nadella Group

**2023**

Timken acquires Nadella Group

## KEY NUMBERS

**8** manufacturing plants

**14** main locations

Italy, Germany, France,  
United Kingdom, Spain,  
United States, China

leading the way in the international markets

in over **60** countries

for more than **90** years

## APPLICATION SECTORS



AUTOMATION AND ROBOTICS



AUTOMOTIVE



ENERGY



FOOD & BEVERAGE



MACHINE TOOL



MEDICAL TECHNOLOGY



METAL WORKING



PACKAGING



POWER TRANSMISSION



SPECIAL MACHINERY



TRANSPORTATION



WAREHOUSE AND LOGISTICS

# SUMMARY

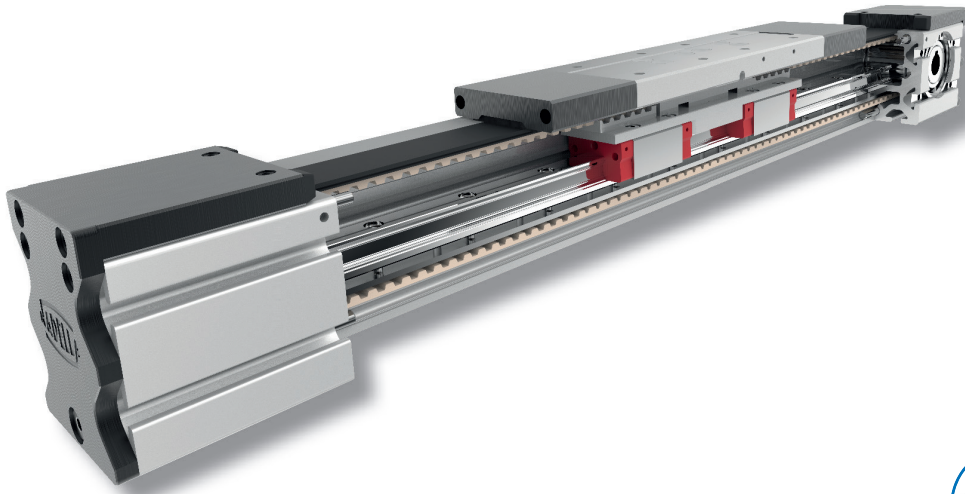
<b>PAGE 4</b>	<b>LINEAR AXES</b>
<b>PAGE 4</b>	<b>BELT DRIVEN</b> AXN(P)-Z, AMC, VER
<b>PAGE 6</b>	<b>BALLSCREW DRIVEN</b> AXN(P)-S, AMV, AEV
<b>PAGE 8</b>	<b>TELESCOPIC</b> TEL, TEC
<b>PAGE 10</b>	<b>RACK AND PINION</b> AMR
<b>PAGE 12</b>	<b>MULTI-AXIS SYSTEMS</b> MANIPULATORS 2D-3D GANTRY SYSTEMS MACHINE FEEDERS
<b>PAGE 14</b>	<b>TECHNICAL SPECIFICATIONS</b>

# LINEAR AXES

## BELT DRIVEN

### > AXN(P)-Z

Belt driven linear axes closed with rollers or recirculating balls guiding.



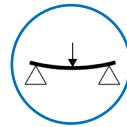
Reduced maintenance  
(up to 5.000 km before  
re-lubrication)



High repeatability  
precision  $\pm 0,05$  mm



High protection from  
dirt and dust thanks  
to closed profile and  
coverband option



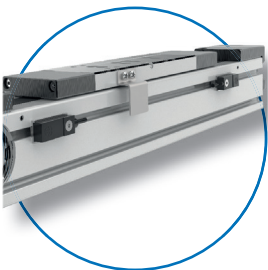
Structural profile  
– low deflection



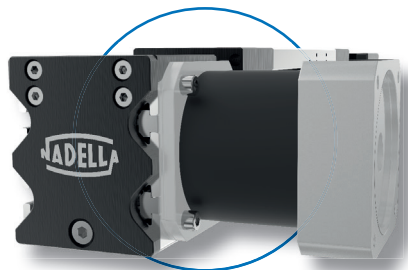
High speed  
up to 10 m/s



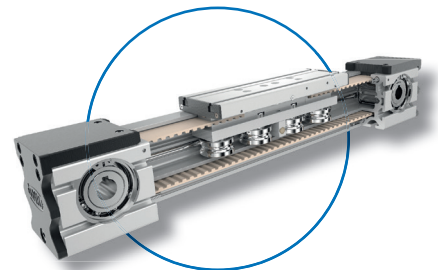
Maximum pay-  
load up to  
30 kN



Inductive switch available



Axial kit available



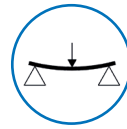
Rollers or Recirculating  
guides available

## > AMC

Belt driven linear axes with single, double or orthogonal recirculating balls guiding.



Speed up to 3 m/s



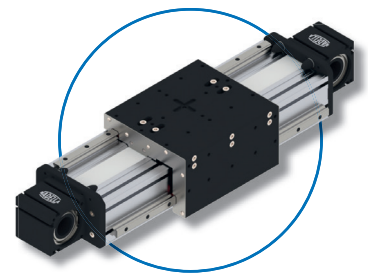
Structural profile  
– low deflection



Repeatability  
precision  $\pm 0,1$  mm



Maximum  
payload up  
to 15.5 kN



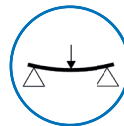
Single, double or orthogonal  
guides available

## > VER

Belt driven linear axes with omega drive for vertical applications.



Speed up to 3 m/s



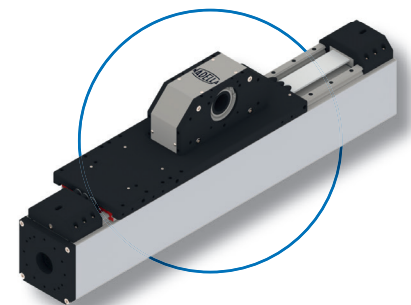
Structural profile  
– low deflection



Repeatability  
precision  $\pm 0,1$  mm



Maximum Payload  
up to 11.5 kN



Double guides available

# LINEAR AXES

## BALLSCREW DRIVEN

### > AXN(P)-S

Ballscrew driven linear axes closed, with recirculating balls guiding.



High repeatability  
precision  $\pm 0,03$  mm



High protection from  
dirt and dust thanks  
to closed profile and  
coverband



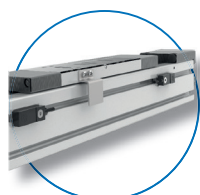
Structural profile  
– low deflection



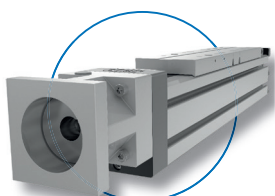
Maximum  
payload up to  
15 kN



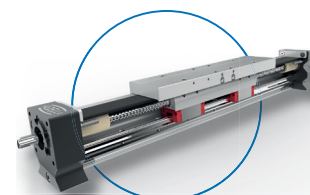
Speed up to  
2 m/s



Inductive switch available

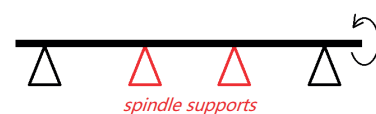
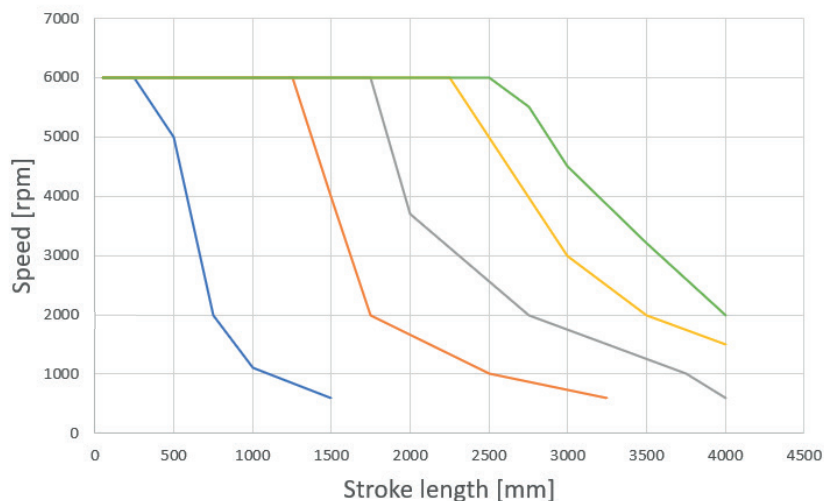


Axial kit available



Spindle support available  
for long strokes

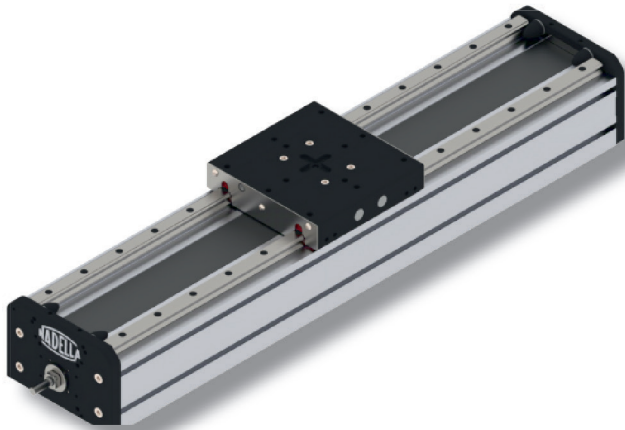
Spindle Supports



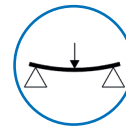
Keeping constant the module length, by adding spindle supports it is possible to reach higher velocity, decreasing the cycle time.

## > AMV

Ballscrew driven linear axes with spindle protection, double recirculation balls guiding.



Speed up to 1,5 m/s



Structural profiles – low deflection



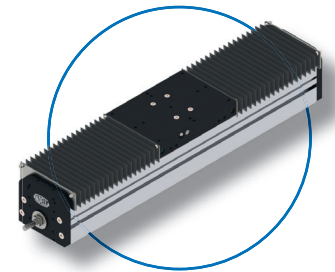
High repeatability  
precision  $\pm 0,02$  mm



High protection from  
dirt and dust thanks  
to the coverband  
option



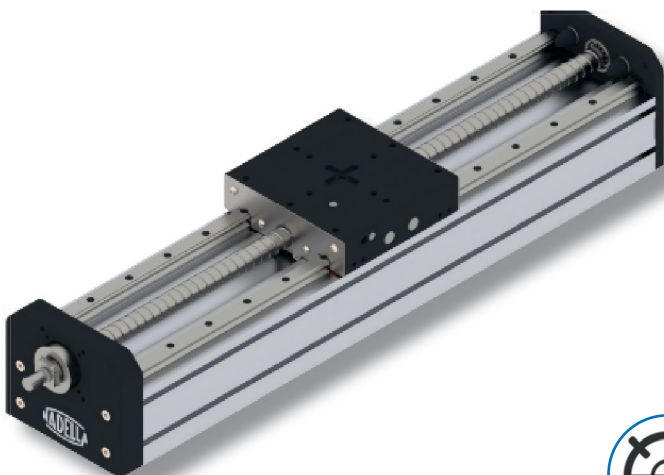
Maximum payload  
up to 14.5 kN



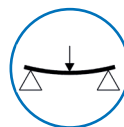
Bellow option available

## > AEV

Ballscrew driven linear axes with double recirculation balls guiding.



Speed up to 1,5 m/s



Structural profile –  
low deflection



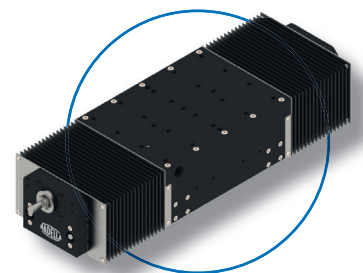
High repeatability  
precision  $\pm 0,02$  mm



Competitive  
solution



Maximum  
payload up to  
14.5 kN



Bellow option available

# LINEAR AXES

## TELESCOPIC

### > TEL

Belt driven telescopic axes with single or double beam.



Overall size reduced by 35% compared to standard axes.



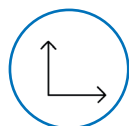
Double synchronous stroke by using a single motor



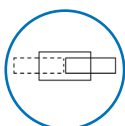
Reduced maintenance



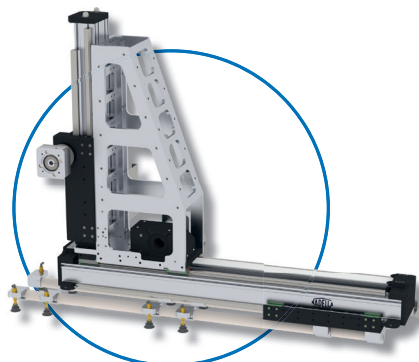
Compared to standard axes, keeping constant the speed, the cycle time is reduced



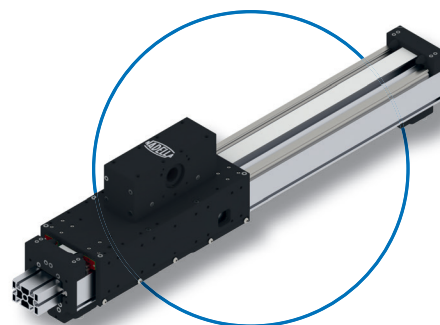
Possible use in horizontal and vertical direction



Double telescopic extension



See Machines Feeders pag.13

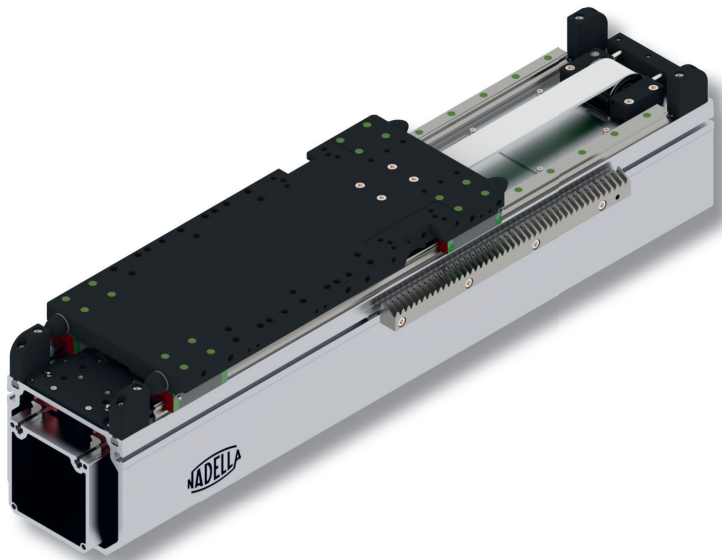


Available with single or double beam



## >TEC

Rack and pinion driven telescopic axes with double beam.



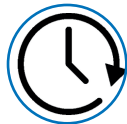
Overall size reduced by 35% compared to standard axes.



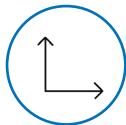
Double synchronous stroke by using a single motor



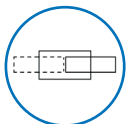
Reduced maintenance



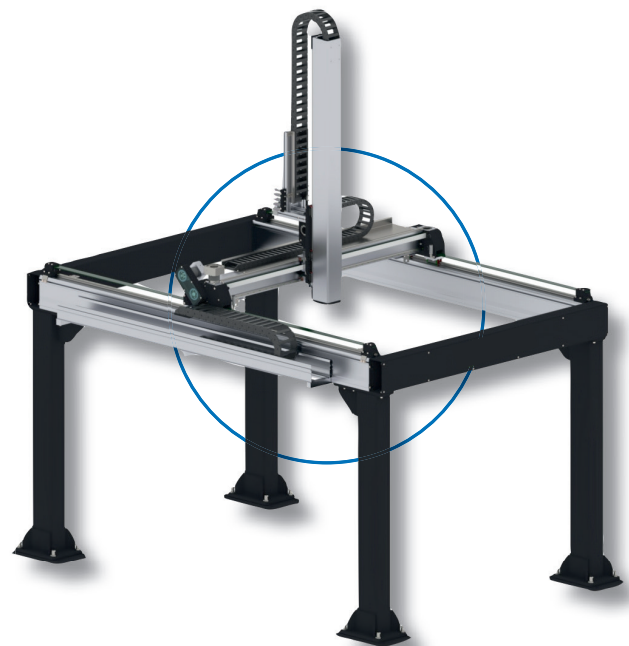
Compared to standard axes, keeping constant the speed, the cycle time is reduced



Possible use in horizontal and vertical direction



Single telescopic extension



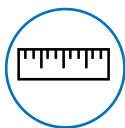
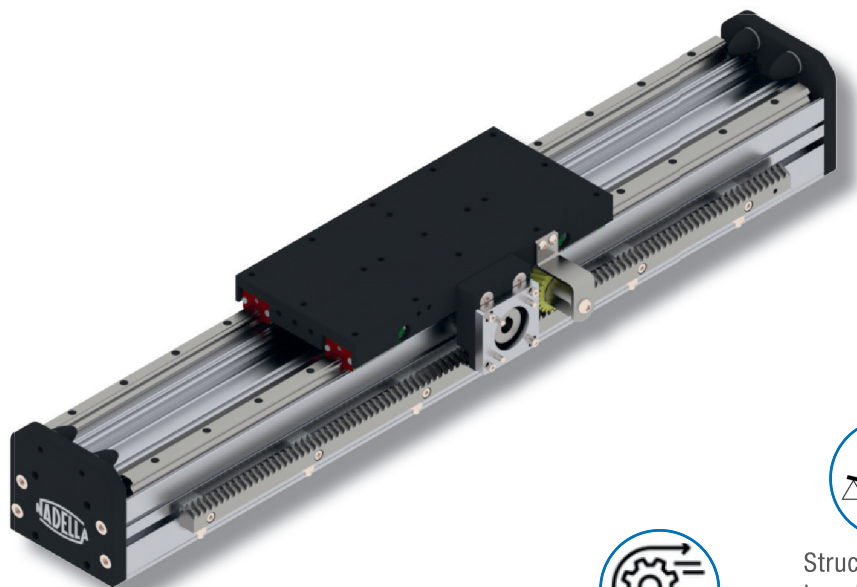
Example of Telescopic Z axis on palletizer gantry

# LINEAR AXES

## RACK AND PINION DRIVEN

### > AMR

Linear axes driven by rack and pinion for heavy duty applications.



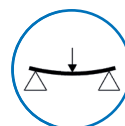
No limitation on stroke



Maximum payload up to 17 kN



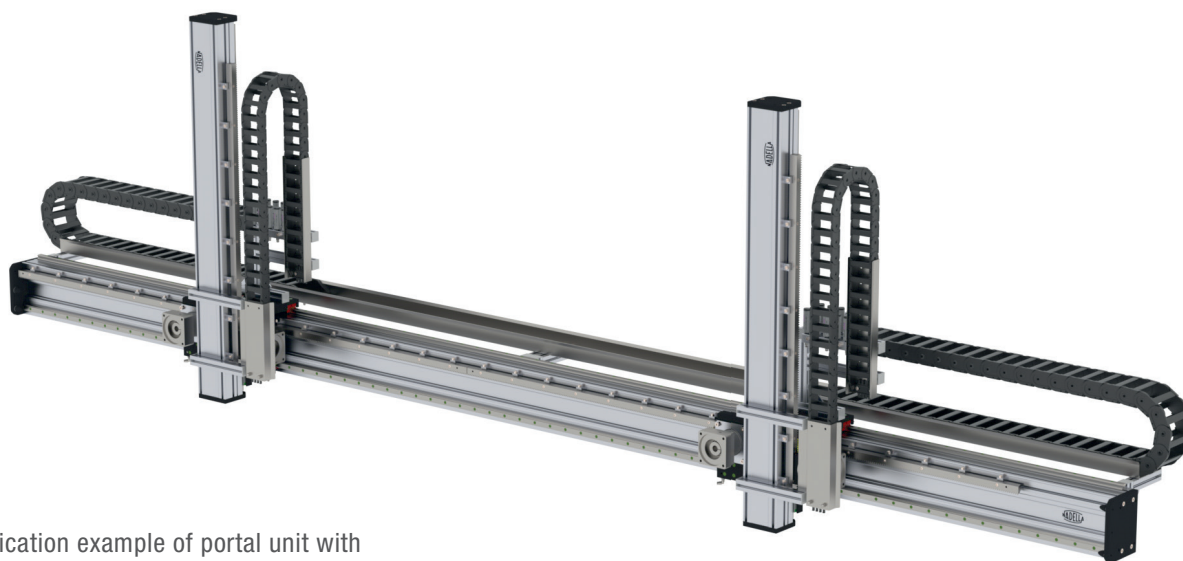
Speed up to 3 m/s



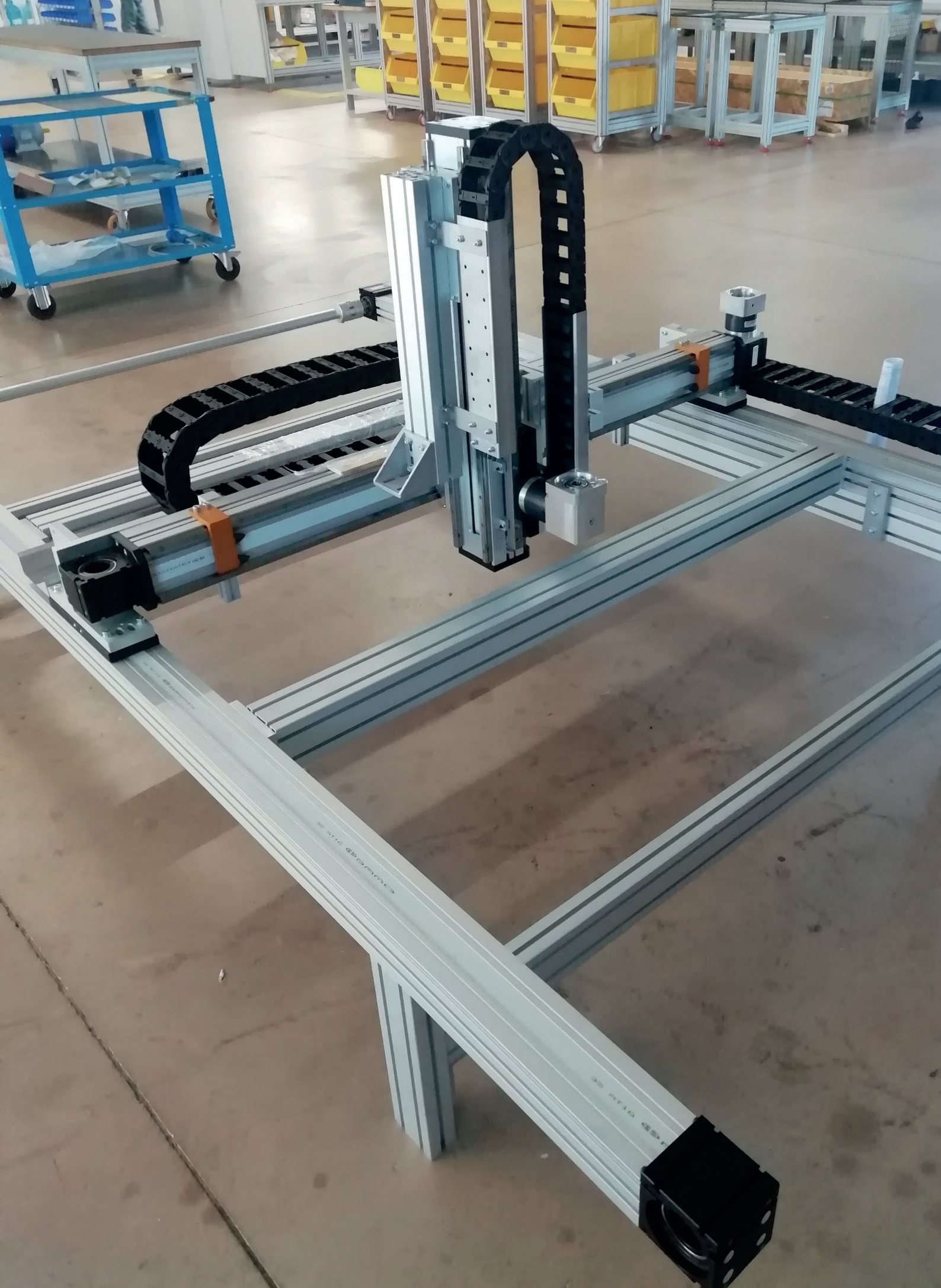
Structural profile low deflection



High repeatability precision  $\pm 0,045$  mm



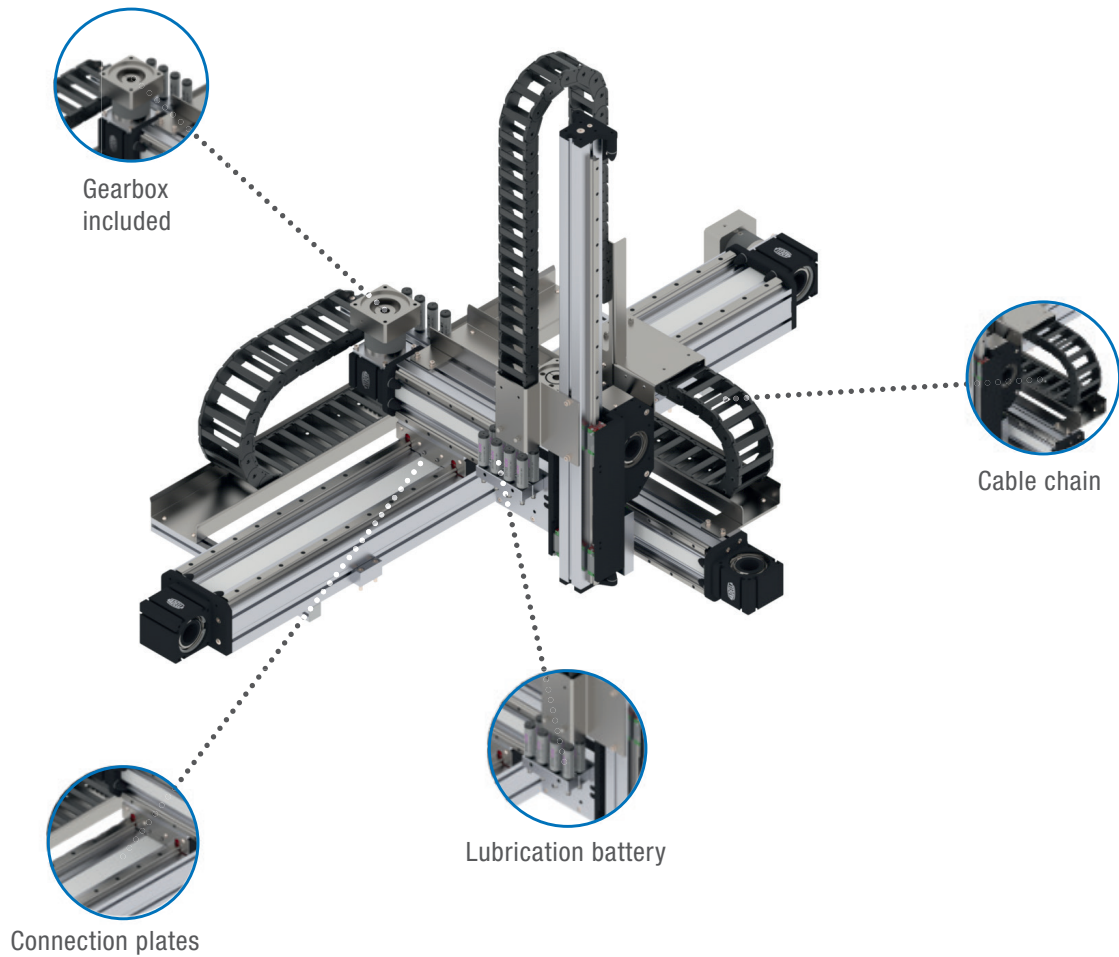
Application example of portal unit with independent Z-axes



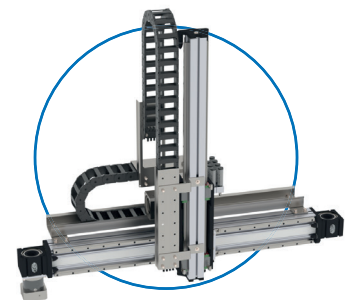
# MULTI-AXIS SYSTEMS

## MANIPULATORS 2D AND 3D

Multi-axis systems 2D or 3D according to costumers requirements.



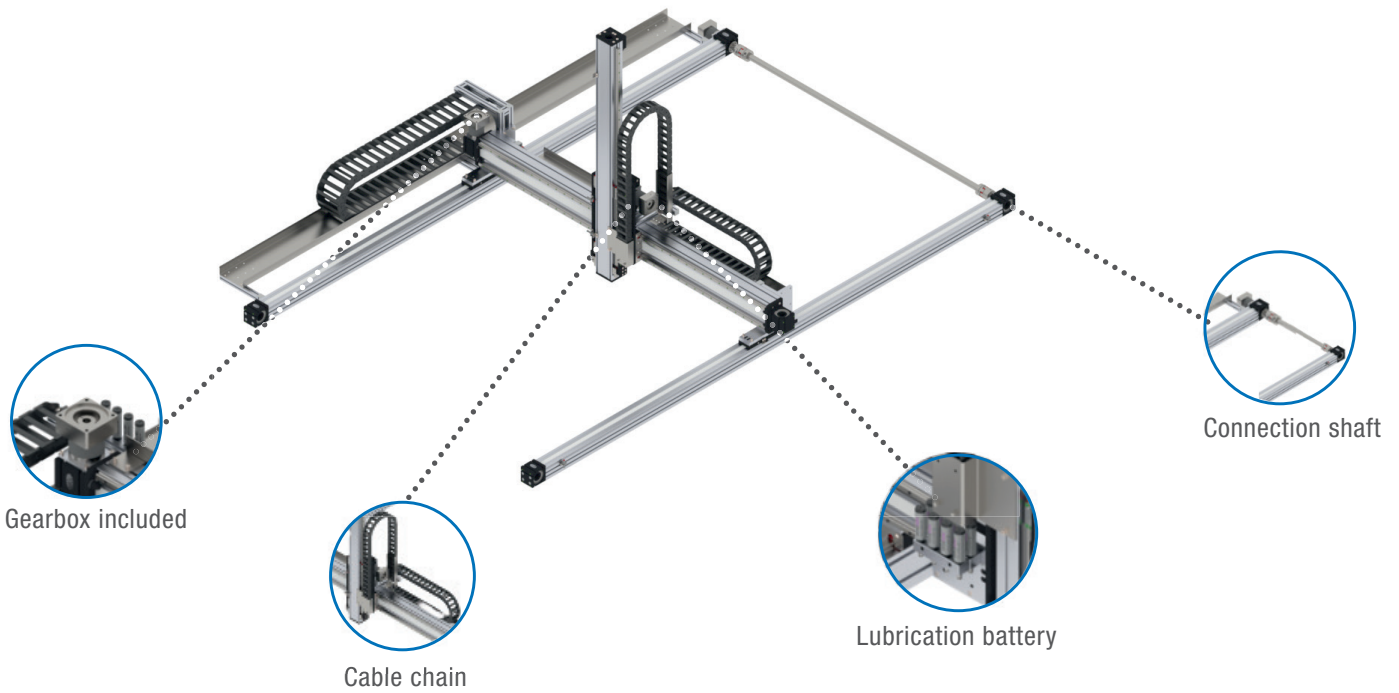
- Integrated solution
- Reduced engineering time
- Competitive lead time
- Easy assembly
- Easy maintenance
- Automatic lubrication available
- Available sensorization



2D or 3D axes available

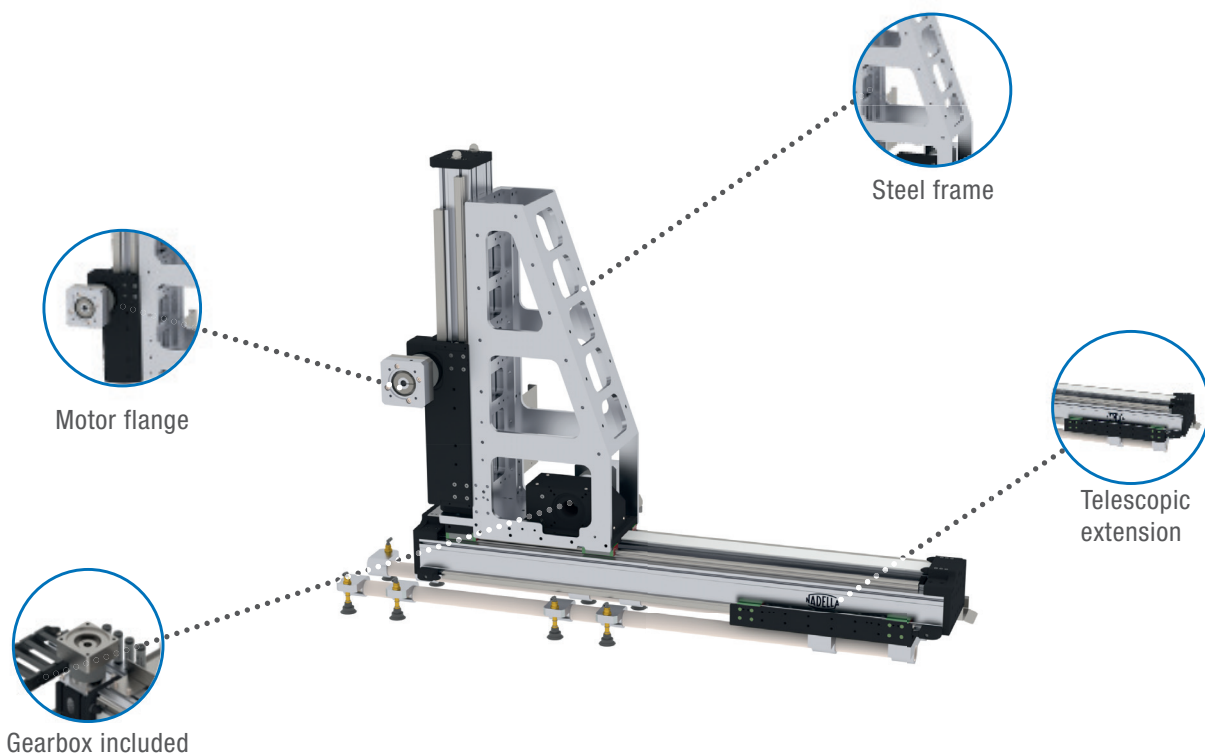
## > GANTRY SYSTEMS

Gantry systems according to costumers requirements.



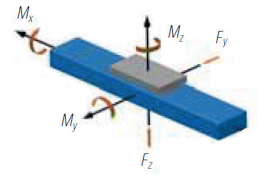
## > MACHINE FEEDERS

Machines feeders systems with telescopic extension.

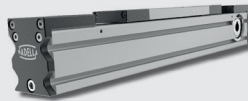


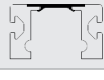



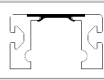

















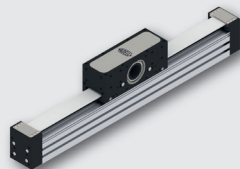












# LINEAR AXES

## TECHNICAL SPECIFICATIONS

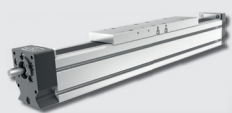











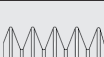





### Belt Driven Linear Axes

Model	Size	Guiding		Protection	Driving	Max Load capacity (N)		Max Load Moments (Nm)			Max speed (m/s)	Repeatability (mm)	Max stroke* (mm)
						Fy	Fz	Mx	My	Mz			
 AXN(P)-Z	45					2.000	3.500	30	90	170	6	±0,05	5.700
	65					9.650	9.650	69	345	345	10	±0,05	5.600
	80					15.000	15.000	150	730	730	10	±0,05	5.600
	100			-		30.000	30.000	800	2.300	2.300	10	±0,05	5.500
 AMC	45		-	-		3.450	4.675	57	110	105	3	±0,1	5.700
	60		-	-		6.850	5.850	65	115	115	3	±0,1	5.600
	120		-	-		4.650	11.000	450	980	500	3	±0,1	6.200
	180		-	-		9.450	15.500	780	890	650	3	±0,1	6.200
 VER	60		-	-		3.500	3.200	6	125	310	3	±0,1	5.600
	90		-	-		5.400	7.200	31	230	290	3	±0,1	6.700
	120		-	-		2.100	2.900	380	505	390	4	±0,1	6.200
	150		-	-		3.100	11.500	10	1.250	340	5	±0,1	6.200
	180		-	-		3.900	6.450	880	1.050	740	6	±0,1	6.100

\*max stroke for single beam without joints.

### Ballscrew Driven Linear Axes

Model	Size	Guiding		Protection	Driving	Max Load capacity (N)		Max Load Moments (Nm)			Max speed (m/s)	Repeatability (mm)	Max stroke* (mm)
						Fy	Fz	Mx	My	Mz			
 AXN(P)-S	45		-			910	910	6	25	25	1	±0,03	2.250
	65		-			3.900	3.900	30	185	185	1,6	±0,03	3.250
	80		-			15.000	15.000	150	1.150	1.150	2	±0,03	4.250
 AMV	120		-			4.950	8.600	135	195	240	1,6	±0,02 - 0,05	2.500
	180		-	-		6.150	14.500	1.100	1.250	560	1,6	±0,02 - 0,05	2.500

\*max stroke for single beam without joints.

### Ballscrew Driven Linear Axes

Model	Size	Guiding		Protection	Driving	Max Load capacity (N)		Max Load Moments (Nm)			Max speed (m/s)	Repeatability (mm)	Max stroke (mm)
						Fy	Fz	Mx	My	Mz			
	80		-			600	600	60	30	30	1,6	±0,02 - 0,05	400
	120		-			4.950	8.600	135	195	240	1,6	±0,02 - 0,05	5.600
	180		-			6.150	14.500	1.100	1.250	560	1,6	±0,02 - 0,05	6.700

### Telescopic Linear Axes

Model	Size	Guiding		Protection	Driving	Max Load capacity (N)		Max Load Moments (Nm)			Max speed (m/s)	Repeatability (mm)	Max stroke (mm)
						Fy	Fz	Mx	My	Mz			
	60		-	-		7.610	5.150	-	520	89	3	±0,15	-
	160		-	-		1.330	4.950	-	1.030	286	3	±0,15	-
	200		-	-		762	5.190	-	1.030	155	3	±0,03	-
	260		-	-		3.770	5.600	-	1.220	840	3	±0,15	-
	200		-	-		2.250	1.125	-	1.970	400	3	±0,15	-

### Rack and Pinion Driven Linear Axes

Model	Size	Guiding		Protection	Driving	Max Load capacity (N)		Max Load Moments (Nm)			Max speed (m/s)	Repeatability (mm/m)	Max stroke* (mm)
						Fy	Fz	Mx	My	Mz			
	90		-	-		1.300	5.500	240	840	200	3	±0,045	5.500
	120		-	-		4.650	11.000	450	980	500	3	±0,045	6.600
	180		-	-		7.300	15.500	780	890	650	3	±0,045	6.600
	240		-	-		7.100	17.000	930	1.350	680	3	±0,045	11.500

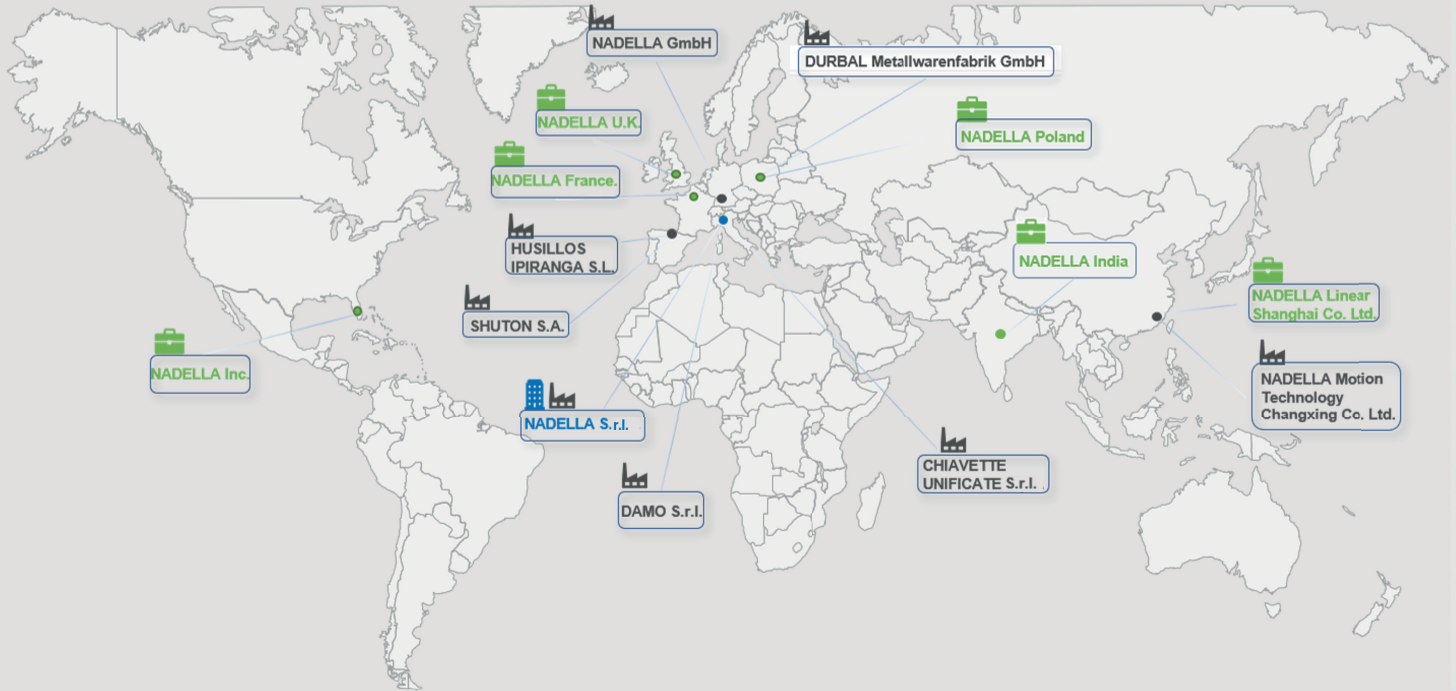
\*max stroke for single beam without joints.



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