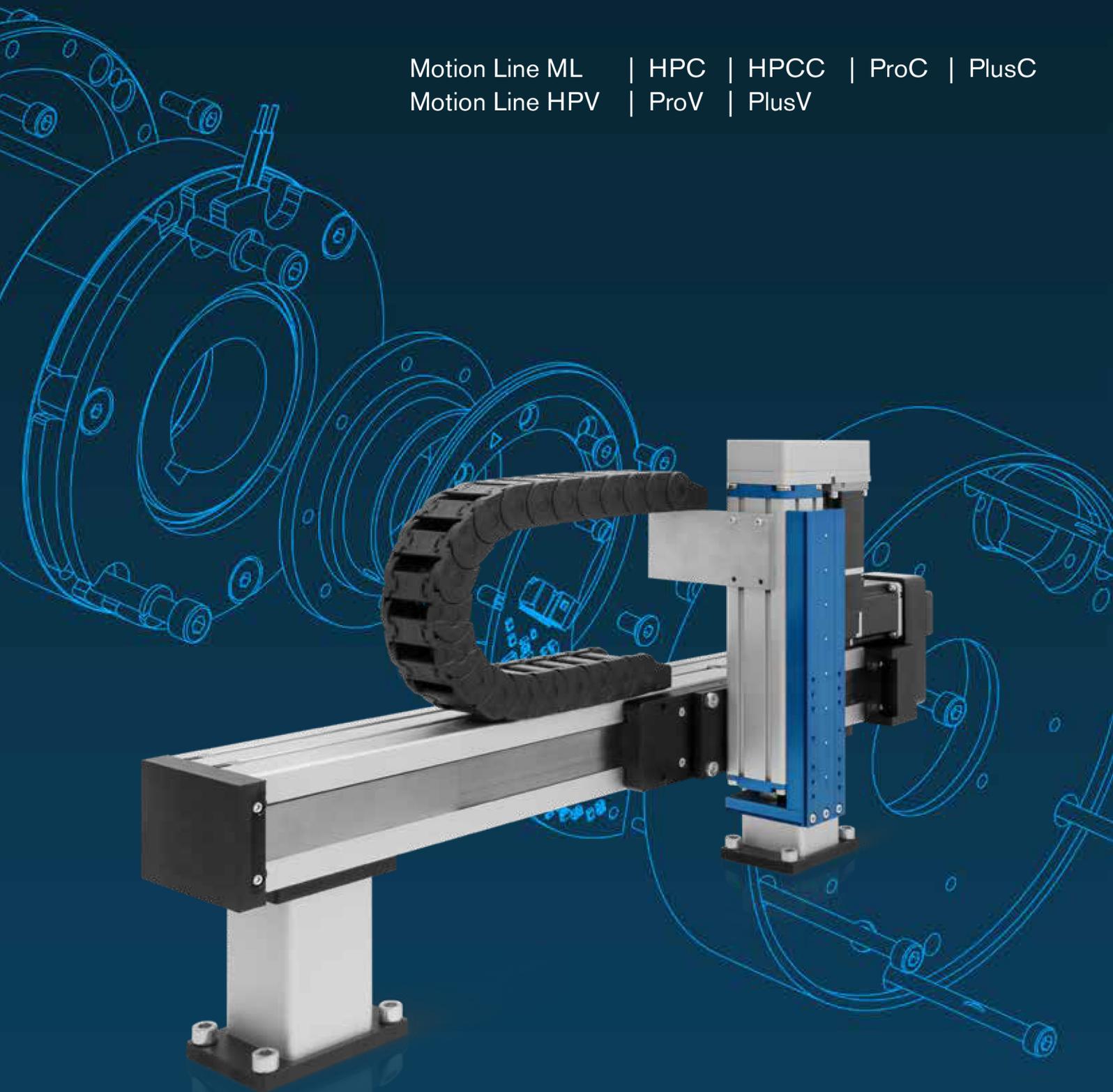


# AutomationWare™ brought to you by **IKO**

One step ahead on the future

AW Linear Axes System

Motion Line ML | HPC | HPCC | ProC | PlusC  
Motion Line HPV | ProV | PlusV



# AW Linear Axes System Automationware

## Automationware

is always mindful  
to hear and help the customer  
to give the best solution for each  
application.

This guide helps the designer to choose the best linear solution on the basis of the **speed, load (load moment), accuracy, protection level and convenience**, to be always in line with the performance requirements and with the application budget.

Our production is characterised by linear Axes with belt drive or screw drive with recirculating ball. Of course, there are for both solutions slide guides with different configuration possibilities.

Furthermore our portal configurations have optional diagnostic systems to check the production efficiency cycle, preventing possible production black outs (*AwareVu*).

## Selection criteria: Belt or Screw?

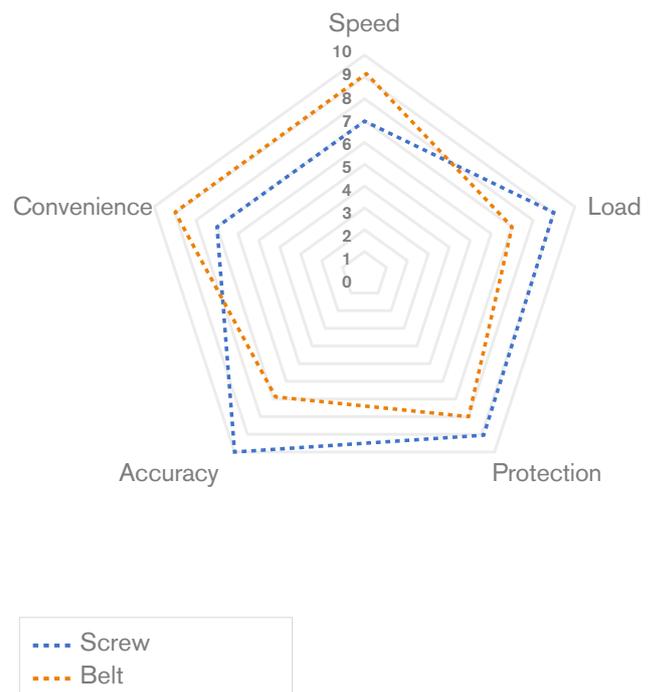
The choice of technology depends on the required application.

In this diagram we have highlighted 5 basic parameters for the choice of the ideal solution.

### Speed

Speed can be a crucial factor in the choice of the technology, in this case the belt solution can be extremely useful to reach a sup to 5 m/s.

Difference between Belt Axis and Screw Axis



Of course the quality of the slide and of the belt are very important for the required performance limits, maintaining performance over time and maximum reliability.

### Load (*Pro and Plus series*)

The needs to move high loads frequently requires the use of linear Axes with double guide, with recirculating ball screw; there are also axes with unbalanced load on one side, to give solidity and reliability to the system.

### Protection (HP series)

Frequently the linear solutions have to be used in industrial environments with processing residues or dust.

AW has designed a protective system for belt Axes and screw Axes to avoid any contact with the external environment.

### Accuracy

AW has gained considerable experience in matters concerning accuracy and positioning repeatability, thanks to the developed solutions, such as our precision linear actuators (*Serie SM and Mech*). Our linear Axes are particularly known for their accuracy and positioning repeatability skills (*up to +/- 0,01 mm*).

### Convenience

Of course price and performance are basic parameters to choose the right motion technology.

Belt Axes are relatively inexpensive and often simplify the modular design, accelerating the time to market of the project.

The price can vary in relation to the used technologies, therefore Axes with cutting screw and single guide or double guide impact on the cost of the manufacture and price.

## Diagram to help the choice of the right product

Automationware doesn't only manufacture standard linear Axes, but also a series of solutions to give to the customer a right answer, based on the particular characteristics of the application; as already explained above, we created a diagram (*page 4*) with the different models and choice parameters, according to the application, to help the customer and choose the right product.

The diagram is divided into **Belt** models and **Screw** models for all possible available configurations:

### ML series (Belt)

Linear belt units with sizes from **45, 60, 80, 90 and 120**, with guides. with slide guides.

A version with Cantilever-fixed-carriage and mobile profile, very useful for vertical applications or if the arm has to be removed during the process, is available.

There is also another version with fixed-carriage and mobile profile on double orthogonal guide; in case of unbalanced loads. (*very useful for vertical applications or if the arm has to be removed during the process*).

The translation is carried out with ball recirculating guides, fixed on the profile.

Guide and profile together provide high mechanical rigidity and low friction.

As already explained above, the carriage of the unit is mounted on one or more sliding blocks with ball recirculation, with anti-scraping protection against dust and other impurities.

The transmission is provided by polyurethane toothed belts, with steel inserts with AT5 or AT10 pitch, the tooth has also a cover, to reduce friction and noise at high speeds.

The used belts have a good loading capacity, high flexibility and low expansion to ensure a positioning repeatability of  $\pm 0,05\text{mm}$ .

The units are made on anodized aluminium profiles of own design.

The Axes has fixing channels for the fixing of the structure and side channels to insert the sensors, or for the passage of cables.

The profile ensures a very good mechanical rigidity, thanks to the innovative design.

The transmission system provides for the calibration of the belt (*power, direction and frequency*) to ensure stability at high speeds with low friction and limited noises.

### HPC or HPV series (Belt or Screw)

Realized for the applications that need protection for mechanical interior components against dust or processing residues.

Also in this case, the linear unities are realized in six sizes: **45, 60, 80, 90, 120 and 160** with motion transmission via belt or screw, according to the application.

In both versions, the translation is on sliding blocks with ball recirculation with consequent high mechanical rigidity and low friction, suitable for the combination with new modular systems for the Pick & Place applications (*SM Series*).

# AW Linear Axes System

## Automationware

### HPCC series (Only Belt)

The MotionLine HPCC series has two moving carriages with opposed motion to satisfy the applications in case of alignment during the production or for taking the component during the processing.

The units are realized in two sizes: **80, 120**, both with belt transmission.

The translation is carried out with sliding blocks with ball recirculation, with consequent mechanical rigidity and low friction.

The carriages are mounted on one or more sliding blocks with ball recirculation (*according to the version*); they are realized in two parts to allow the passage inside the protection lamina.

### ProC and ProV Series

Essentially based on the **HP** series, but with additional double guide for more rigidity, useful for example for an eventual portal configuration.

In both versions the translation is on guide, the carriage is mounted on two or four slides with protection.

### PlusC and PlusV Series

Linear systems designed for relative high loads; structured with translation with double guide inside the profile.

Belt drive or screw drive, based on the required speed and accuracy.

Very useful in case of high load motion, vertical loads, with possibility of concertina shroud to protect the mechanics.

Belt	Speed	Load	Protection	Accuracy	Convenience	Size 30	Size 45	Size 60	Size 80	Size 90	Size 120	Size 160	Size 160X75	Notes
ML	High	Low	Low	Low	Low		Y	Y	Y		Y			Option double carriage
HPC	High	Low	Low	Low	Low	Y	Y	Y	Y		Y			Protection lamina
HPCC	High	Low	Low	Low	Low				Y		Y			Opposed carriage
PROC	Low	Low	High	High	High					Y	Y	Y		Double guide
PLUSC	Low	Low	Low	Low	Low								Y	Optional concertina shroud

Screw	Speed	Load	Protection	Accuracy	Convenience	Size 30	Size 45	Size 60	Size 80	Size 90	Size 120	Size 160	Size 160X75	Notes
HPV	High	Low	Low	Low	Low	Y	Y	Y	Y		Y			Screw ISO 7 Option ISO 5
PROV	High	Low	Low	Low	Low					Y	Y	Y		Screw ISO 7 Option ISO 5
PLUSV	Low	Low	Low	Low	Low								Y	Screw ISO 7 Option ISO 5 Optional concertina shroud

- **Linear Axes** for the best combination of speed, power, accuracy and productivity

---

- **Sliding Box** with caged ball recirculation for maximum speed and acceleration

---

- **Maximum speed** up to 5 m/s (*Belt*), 2m/s (*Screw*) with sliding box with caged ball recirculation

---

- **Accurate positioning** Belt ( $\pm 0,05\text{ mm}$ ), Screw ( $\pm 0,01\text{ mm}$ )

---

- **Systems with sliding blocks with ball recirculation**, for a good rigidity

---

- **Perfect alternative** to hydraulic systems, better accuracy, applicable load and reliability over the years

---

- **Completely electronically controllable** speed and positioning repeatability **programmable** during acceleration

---

- Motors with servo **Stepper** or **Brushless**

---

- **Control up to 64 positions** thanks to the **Automationware Easy soft application**

---

- **Extremely easy to maintain**, long duration, also with high productivity

## Benefits

- Big variety of Linear **Custom solutions**, ad hoc planning

---

- No recurring calibration

---

- **Monitoring of operating cycle** with **Easy software** possible (*Ind. 4.0*)

---

- **Low speed-dependency** comparing to the load, best precision in all work conditions

---

- Configurable with other **AW-solutions**, such as **SM Series** for Handling systems

---

- Use in hostile environments, in case of dust or water sprays (**IP65**)

---

- **Fast and reconfigurable** for size-changes, electronic control of acceleration



# AW Linear Axes System

## Automationware

### Belt Axes

The used belt is made of polyurethane with steel inserts, the tooth has a cover, to reduce friction and noise at high speeds.

The belt slides inside the profile-channels, that protect the internal mechanical against dust or processing residues.

A steel-lamina slides inside the carriage, for a better protection of the unit (***Versioni High Protection***).

The belt-maintenance operations are very easy.

The replacement and the tensioning of the belt can be made without needing to disassemble the application unit.

Motion can be directly transmitted fixing the drive shaft with a shrink disk, or clamping bushes, or with Solid shaft and coupling parts.

Planetary gearboxes available, with high efficiency and precision to optimise the motor's performance on the basis of the load to move.

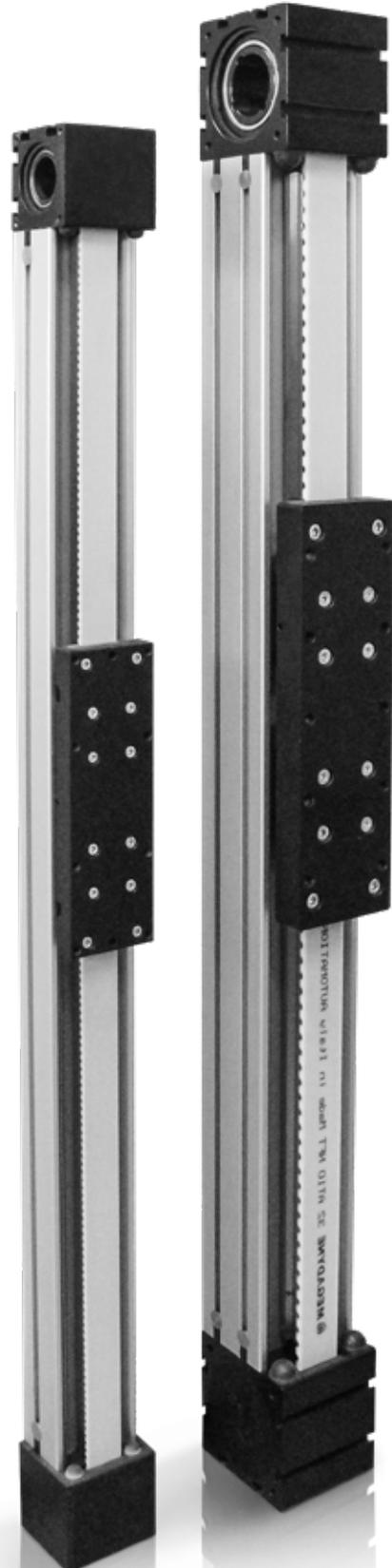
Wide availability of accessories to realize single or multi-Axes control solutions.

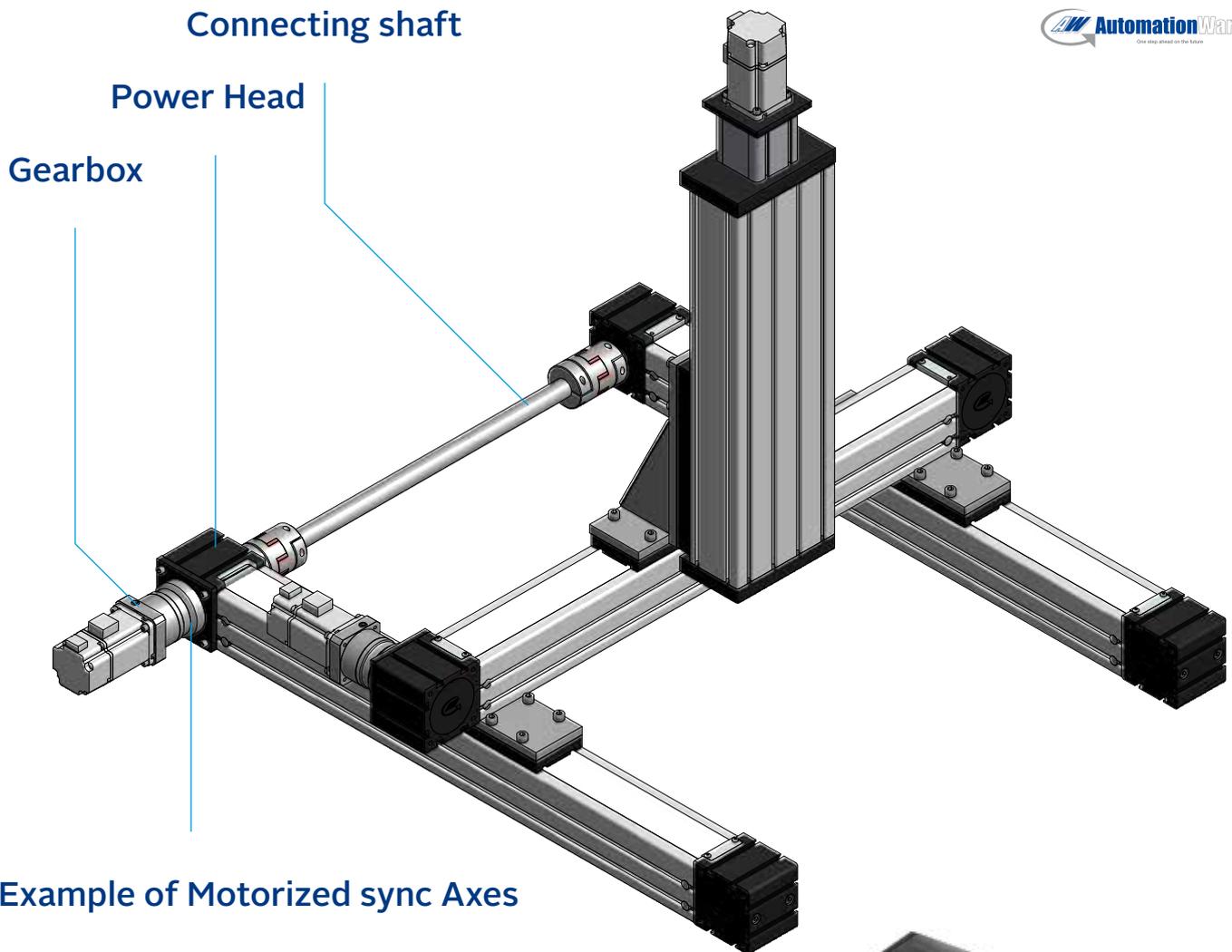
Wide choice of high-performance gearboxes, **Servo Stepper** or **Brushless** motors, variety of cams, with the appropriate interface plates.

Furthermore, there is a good accessibility for the periodic lubrication.

The deflecting head has a tensioning system.

An eventual regulation is also possible without needing to disassemble the carriage load.





## Example of Motorized sync Axes

The power head has a **pulley with zero backlash**, with bore for the shrink disk or clamping bushes.

The direct fixing of the traction shaft with gearboxes and motors, through opportune flanges, ensures a good rigidity and allows high dynamics.

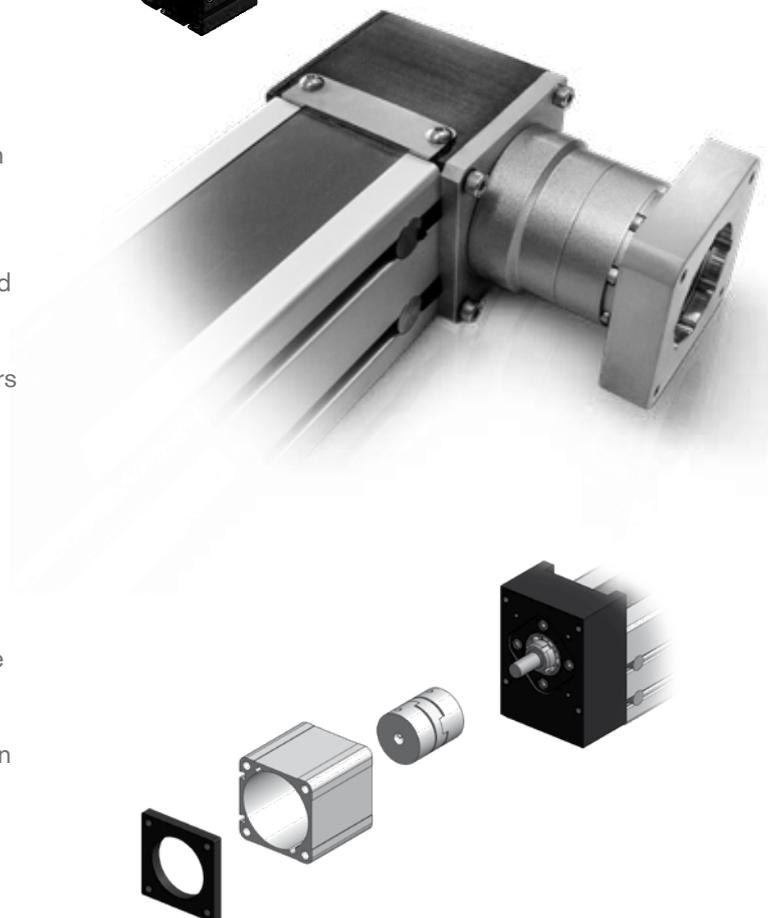
The supply of units with planetary gearboxes and motors is also possible.

In the screw-version the nut is fixed inside the carriage.

The protection of the screw is ensured through the steel lamina sliding inside the carriage.

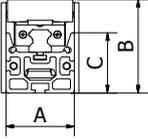
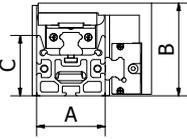
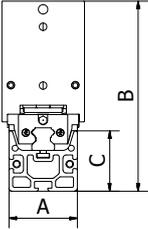
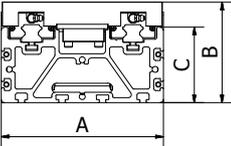
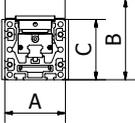
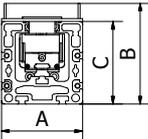
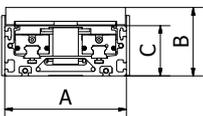
The power head has fixing bores for the connection bell or belt transmission.

The supply of units with bell, connector and interface-flange for the necessary motor is also possible.



# AW Linear Axes System

## Automationware

Reference		Stroke/Round mm/rev	Guide section		Traction Belt	Protection	Size	Dimension mm		
Family	Model		N.of Guides	Ball Blocks				A	B	C
AW MLC										
	ML 45C-11	110	1 x LM15	1	16 AT5	na	45	45	62	40
	ML 45C-12	110	1 x LM15	2						
	ML 60C-11	120	1 x LM15	1	25 AT5		60	60	65	43
	ML 60C-12	120	1 x LM15	2						
	ML 80C-11	200	1 x LM25	1	32 AT10		80	80	100	66
	ML 80C-12	200	1 x LM25	2						
	ML120C-11	200	1 x LM30	1	50 AT10		120	120	100	75
ML120C-12	200	1 x LM30	2							
AW MLC -2 Guide 90°										
	ML 45C-22	110	2 x LM15	2	16 AT5	na	45	45	61,5	40
	ML 45C-24	110	2 x LM15	4						
	ML 60C-22	120	2 x LM15	2	25 AT5		60	60	66,5	43
	ML 60C-24	120	2 x LM15	4						
	ML 80C-22	180	2 x LM25	2	32 AT10		80	80	104,5	66
	ML 80C-24	180	2 x LM25	4						
	ML120C-22	200	2 x LM30	2	50 AT10		120	120	100	75
	ML120C-24	200	2 x LM30	4						
AW MLC V -Cantilever										
	ML 45C-12V	110	1 x LM15	2	25 AT5	na	45	45	126	40
	ML 60C-12V	120	1 x LM15	2						
	ML 80C-12V	180	1 x LM25	2	50 AT5		80	80	178	66
	ML 80C-12VL	180	1 x LM25	2						
	ML 120C-12V	200	1 x LM30	2	50 AT10		120	120	234	75
AW ML160PlusC										
	ML160PlusC-22	200	2 x LM20	2	50 AT10	Bellow Optional	160	160	100	75
	ML160PlusC-24	200	2 x LM20	4						
AW MLHpCC										
	MLHPC- 45-11	110	1 x LM12	1	12 AT5	Inox Protection	45	45	66	48
	MLHPC- 60-11	120	1 x LM15	1						
	MLHPC- 60-12		1 x LM15	2						
	MLHPC- 80-11	200	1 x LM20	1	32 AT10		80	80	100	82
	MLHPC- 80-12		1 x LM20	2						
	MLHPC-120-11	200	1 x LM25	1	50 AT10		120	120	115	90
MLHPC-120-12	1 x LM25		2							
AW MLHpCC										
	MLHPCC-80-12	120	1 x LM15	1+1	16 AT5	Inox Protection	80	80	100	82
	MLHPCC-80-14		1 x LM15	2+2						
	MLHPCC-120-12	200	1 x LM20	1+1	32 AT10		120	120	115	90
	MLHPCC-120-14		1 x LM20	2+2						
AW MLProC										
	MLProC- 90-22	90	2 x LM12	2	25 AT5	Inox Protection	90	90	50	38
	MLProC- 90-24	90	2 x LM12	4						
	MLProC-120-22	110	2 x LM15	2	32 AT5		120	120	68	50
	MLProC-120-24	110	2 x LM15	4						
	MLProC-160-22	200	2 x LM20	2	50 AT10		160	160	100	80
	MLProC-160-24	200	2 x LM20	4						

# Belt Axes

Max Payload (N)			Max M. Carriage (Nm)			Max Speed	Max. Acc..	Ripetibility	Max Stroke
Fx	Fy	Fz	Mx	My	Mz	(m/s)	(m/s <sup>2</sup> )	(mm)	(mm)
1015	1138	2276	27	22	22	5	50	+/-0.05	5800
	1844	3687	43	206	103	5	50	+/-0.05	5750
1715	1138	2276	27	22	22	5	50	+/-0.05	5800
	1844	3687	43	246	123	5	50	+/-0.05	5730
4510	3275	6550	124	126	126	5	50	+/-0.05	5730
	4290	8580	165	779	390	5	50	+/-0.05	5650
7670	4727	9545	200	210	210	5	50	+/-0.05	5650
	7658	15315	325	1914	957	5	50	+/-0.05	5550
1015	3414	3414	163	45	45	5	50	+/-0.05	5800
	5531	5531	265	277	277	5	50	+/-0.05	5750
1715	3414	3414	178	45	45	5	50	+/-0.05	5800
	5531	5531	288	335	335	5	50	+/-0.05	5730
4510	9825	9825	582	252	252	5	50	+/-0.05	5730
	12869	12869	943	835	835	5	50	+/-0.05	5650
7670	14181	14181	1146	419	419	5	50	+/-0.05	5650
	22973	22973	1856	2553	2553	5	50	+/-0.05	5550
1715	1821	3642	43	243	121	5	30	+/-0.05	1000
1715	1821	3642	43	243	121	5	30	+/-0.05	1500
3560	2603	5206	102	516	258	5	30	+/-0.05	2000
	2603	5206		868	434	5	30	+/-0.05	2000
7670	6198	12397	261	2066	1033	5	30	+/-0.05	2500
7670	8472	8472	424	138	138	5	50	+/-0.05	5730
7670	13724	13724	900	1053	1053	5	50	+/-0.05	5650
635	461	922	12	6	6	2	20	+/-0.05	4000
1715	783	1566	21	16	16	3	50	+/-0.05	5800
	1566	3132	42	169	85	3	50	+/-0.05	5850
4510	2118	4236	69	69	69	4	50	+/-0.05	5850
	4236	8472	138	915	457	4	50	+/-0.05	5750
7670	3275	6550	124	126	126	4	50	+/-0.05	5750
	6550	13100	247	1680	840	4	50	+/-0.05	5650
1015	2118	4236	69	69	69	4	30	+/-0.05	5850
1015	4236	8472	138	915	457	4	30	+/-0.05	5750
4510	3275	6550	124	126	126	4	30	+/-0.05	5750
4510	6550	13100	247	1680	840	4	30	+/-0.05	5650
800	1136	1136	31	7	7	3	50	+/-0.05	2000
2160	1840	1840	62	76	76	3	50	+/-0.05	2000
	3132	3132	103	32	32	5	50	+/-0.05	4000
7670	5074	5074	209	245	245	5	50	+/-0.05	4000
	8472	8472	398	138	138	5	50	+/-0.05	5750
	13725	13725	783	1098	1098	5	50	+/-0.05	5650

# AW Linear Axes System

## Automationware

### Screw Axes

The used technology is based on ISO7-screws (Optional ISO 5).

The positioning accuracy is ensured through an high-resolution encoder.

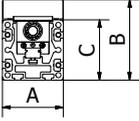
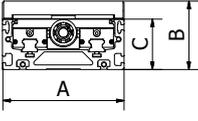
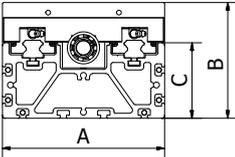
A lamina-protection or a concertina shroud prevents the access to the internal components of dust or other foreign objects (**Versioni High Protection**).

High-efficiency and precision planetary gearboxes available, to optimize the motor performance, in base of the load to move.

A wide availability of accessories enables the creation of single or multi-Axes solutions.

Good choice of high-performance gearboxes, **Servo-Stepper** motors or **Brushless** motors, variety of cams, and the oportune interface plates.

Very good accessibility for the periodic lubrication.

Reference		Stroke/Round	Guide section		Traction	Protection	Size	Dimension mm		
Family	Model	mm/rev	N.of Guides	Ball Blocks	Belt			A	B	C
<b>AW MLHpV</b>										
	ML45V-11	3-10	1 x LM12	1	V10 P3-10	Inox Protection	45	45	66	48
	ML 60V-12	5-10-16	1 x LM15	2	V16 P5-10-16		60	60	80	60
	ML 80V-12	5-20	1 x LM20	2	V20 P5-10-20		80	80	100	82
	ML120V-12	5-10-25	1 x LM25	2	V25 P5-10-25		120	120	115	90
<b>AW MProV</b>										
	ML 90V-22	5-10	2 x LM12	2	V12 P5-10	Inox Protection	90	90	50	38
	ML 90V-24		2 x LM12	4						
	ML120V-22	5-10-16	2 x LM15	2	V16 P5-10-16		120	120	68	50
	ML120V-24		2 x LM15	4						
	ML160V-22	5-10-20	2 x LM20	2	V20 P5-10-20		160	160	100	80
ML160V-24	2 x LM20		4							
<b>AW ML160PlusV</b>										
	ML160PlusV-22	5-10-20	2 x LM20	2	V20 P5	Bellow Optional	160	160	100	75
	ML160PlusV-24	5-10-20	2 x LM20	4	V20 P5		160	160	100	75



Max Payload (N)			Max M. Carriage (Nm)			Max Speed	Max. Acc..	Ripetibility	Max Stroke
Fx	Fy	Fz	Mx	My	Mz	(m/s)	(m/s <sup>2</sup> )	(mm)	(mm)
2800 - 2500	922	1844	25	6	6	0,75	20	+/-0,01	1200
10490 - 11810 - 8330	1274	2548	34	189	95	1,20	20	+/-0,01	2000
8940 - 12000	4236	8472	138	915	457	1,50	20	+/-0,01	2500
15800 - 17500 - 21000	6550	13100	247	1680	840	1,88	20	+/-0,01	3000
5140 - 3900	1136	1136	31	7	7	0,75	20	+/-0,01	1000
	1840	1840	62	76	76	0,75	20	+/-0,01	1000
10490 - 11810 - 8330	3132	3132	103	32	32	1,20	20	+/-0,01	1500
	5074	5074	209	245	245	1,20	20	+/-0,01	1500
8940 - 16210 - 12000	8472	8472	398	138	138	1,50	20	+/-0,01	2500
	13724	13724	783	1098	1098	1,50	20	+/-0,01	2500
12000	8472	8472	424	138	138	1,5	20	+/-0,01	3000
12000	13724	13724	900	1053	1053	1,5	20	+/-0,01	3000

# Applications

Nowadays our linear systems are applied in many industrial situations for the materials handling, eventually personalised to satisfy the most various needs.

The linear units are planned for an easy installation, also in combination with other Automationware products, for example the handling systems (**SM Serie**).

Our Axes can be also used in dusty environments or with processing residues, thanks to the protection/ isolation system of the moving parts.

Our linear solutions prevent the contamination and can be also properly used in humid environments or for food processing (**Axes and actuators are IP65**).

## Packaging and/or Material motion

These linear systems are very useful for packaging applications in different configurations (**XYZ**) with different combinations thanks their modularity and compatibility with our fast handling slides (**Serie SM**).

The **Plus series** can be used for heavy factory applications, where the materials motion needs a rugged mechanical structure with a very high precision and long lifespan (*Welding, Automotive, Cutting ...*).

## Factory automation

Essential for palletisation systems, very good for industrial production chains, to find a rapid solution for eventual complexities of the production line.

They can be used for storage applications also for lengths of over 10 m.

## Machine tools

Useful for the motion of manufacturing component of machine tools for the plastic or metallic material motion, also in combination with electric cylinders, for high speed and precision.



## Inspections and quality control

When motion may be combined with optical scan systems to improve quality and boost precision, without movement ringing.

## Laser / Camera Scanning

To place laser-systems or video-scanning systems to display objects or decode barcodes.

*(Application barcode system in production systems or automatic storage systems).*

## Production

Filing systems in production, for the motion modulation of containers with liquids, and if there is the need to accelerate or decelerate with predetermined curves. Impossible with unscalable systems in acceleration *(es. Pneumatic systems).*

## Medical and pharmaceutical

Perfect to combine with handling systems with critical applications, such as production and filling of pharmaceutical products, for diagnostic tests or for quality controls.

Also available on request the telescopic Axes extension *(Please call AW directly).*

The hygienic integrity is guaranteed through the isolation (**HP** and **PRO** series), that allows the operation also in environments with hygienic protection.

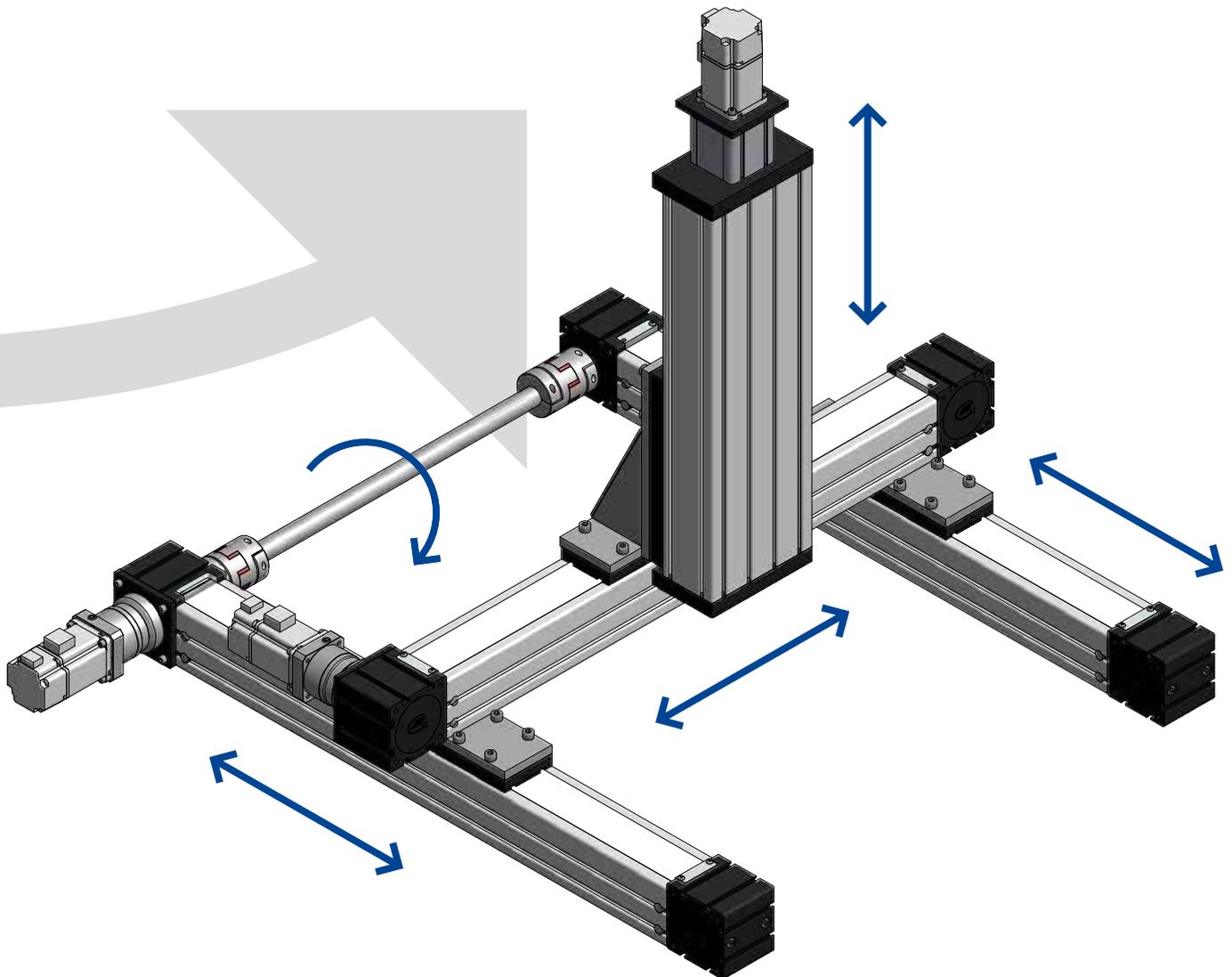
Optional the eventual Axes pressurization.



# AW Linear Axes System

## Automationware

### Configuration examples



---

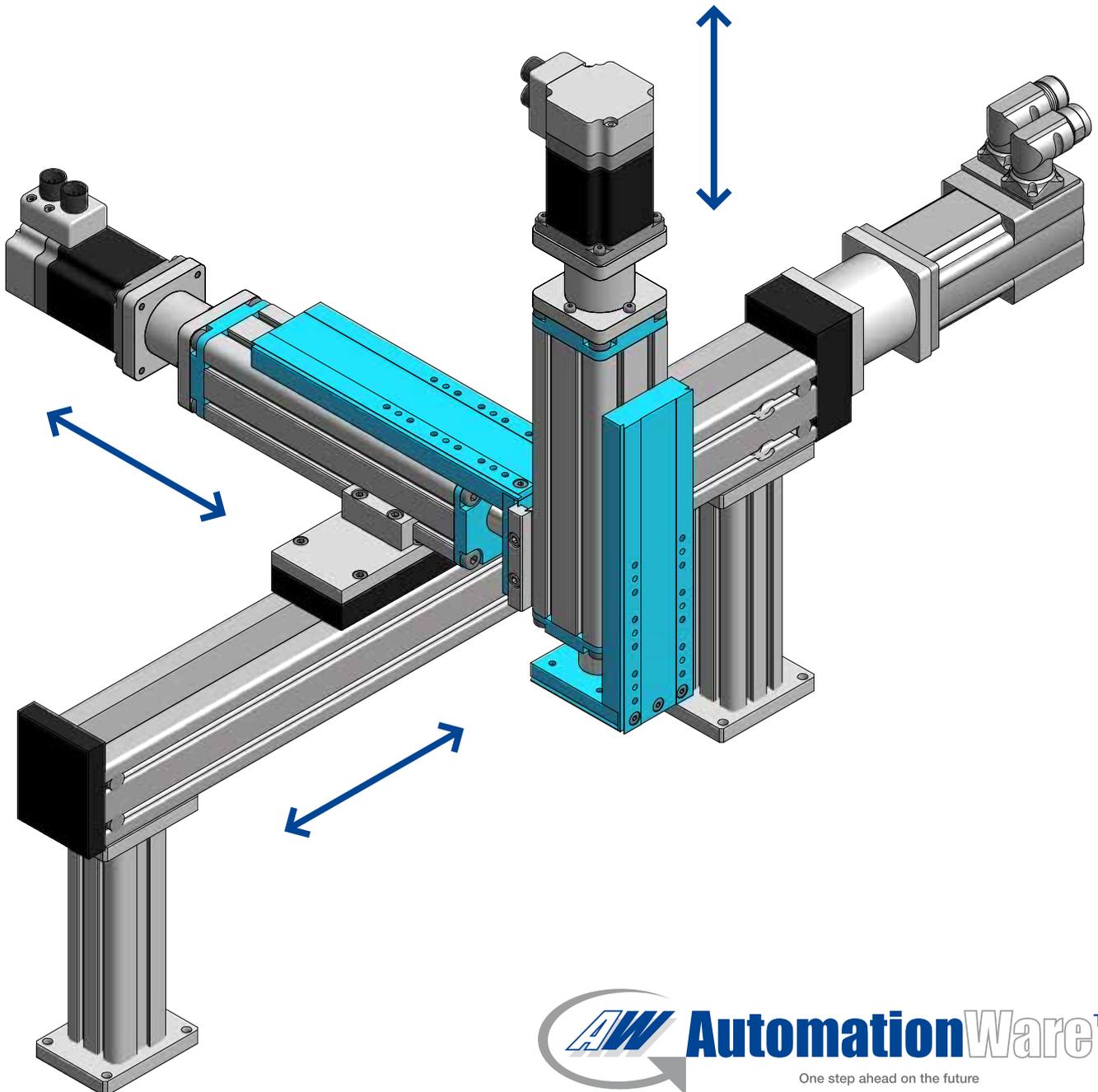
**Example of Belt Cartesian Axes (XYZ).** Parallel Axes system based on belts connected with shaft and gearbox.

Vertical line based on screw transmission adapted for heavy loads.

---

## Cartesian Solution (XYZ).

With fast linear screw Axes,  
combined with a **Pick and Place**  
**SM-slide-system** for the best  
productivity.

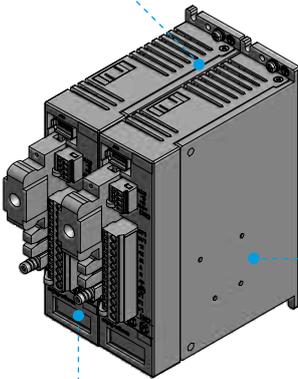
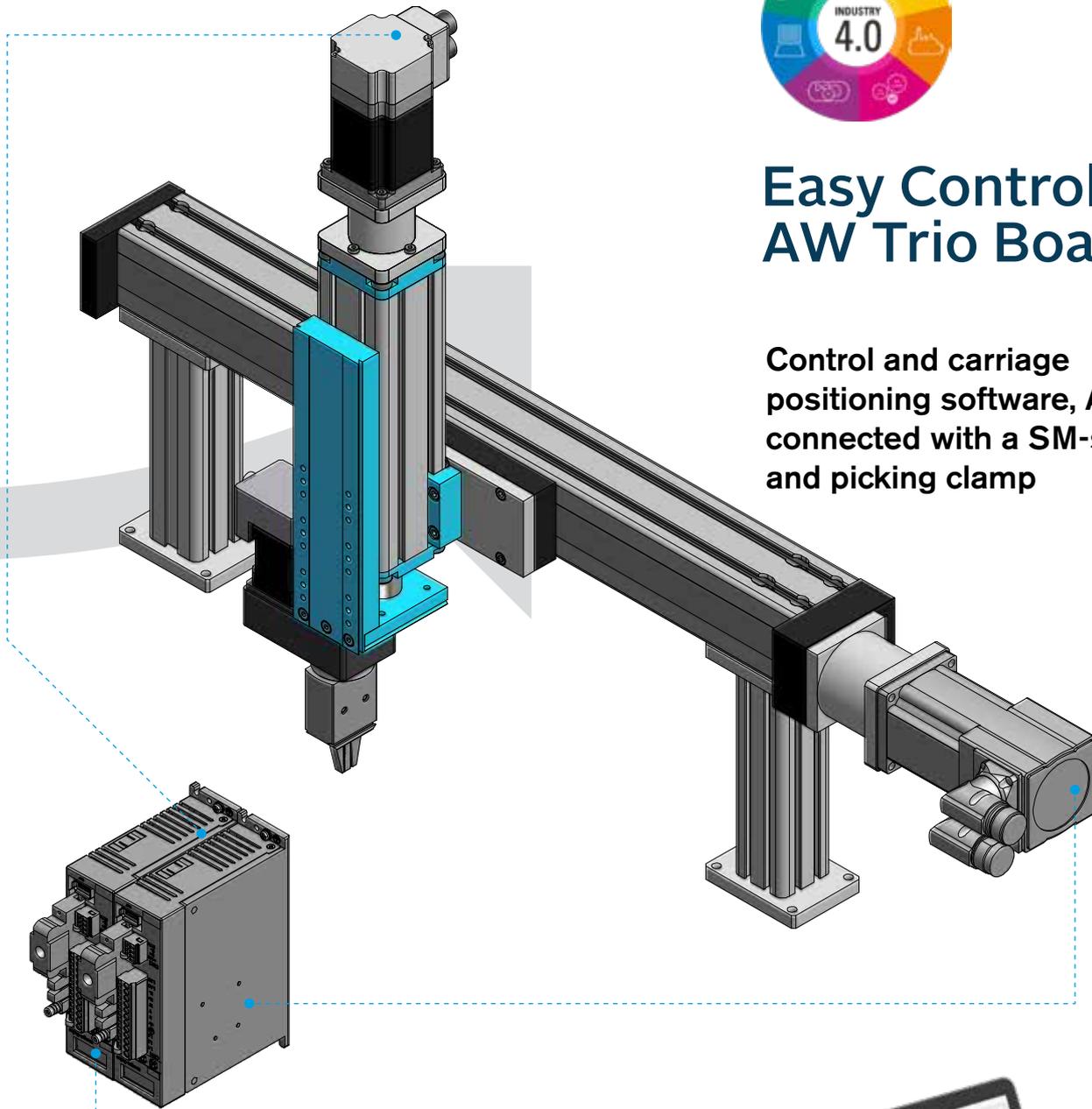


# AW Linear Axes System Automationware



## Easy Control™ & AW Trio Board

Control and carriage  
positioning software, Axes  
connected with a SM-slide  
and picking clamp



# System Drivers, motor control and diagnostic

**Automationware** uses first-level components to operate its technological innovative linear units or actuators, motors and electronic servo drivers with very good performances.

For the carrying out of the lift movements there is the **Easy-Application**, that allows the fast and easy control of the drive through digital I/O, after the PC-configuration.

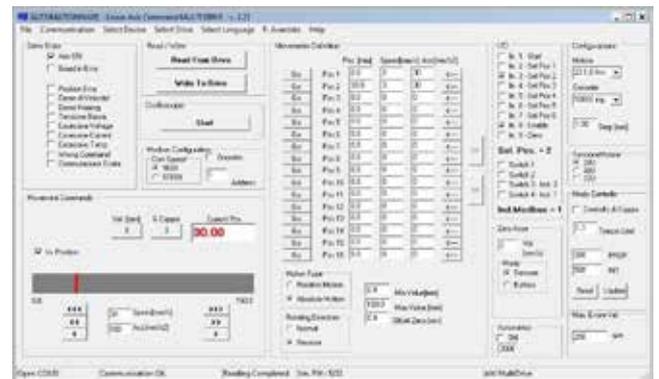
Alternatively it is possible to use the standard communication protocols, such as **CANopen** or **EtherCAT**, that allow an easy integration into the entire machine-system.

The drives have the function electronic cams and a vibration suppression system for solid and stable **XYZ** portal configurations, also with high operating regime.

Our motors have an encoder up to 17 bit, for a high positioning accuracy.

The motion management on more Axes, combined with fast slides, can be programmed with an intelligent **AW Trio** control module, to optimize the modulation and the Axes synchronisation for high-productivity cycles, determining acceleration and appropriate motions of the application.

## Configuration through the EASY™ software



## AwareVu™

**Automationware** considers the new market trends ind. 4.0, develops a new control platform called **AwareVu**.

The new product can be applied on portal or on a singular **Automationware** component to control the vibration profile of the system during the processing cycle, activating an alarm in case of malfunction.

The alarm can be visible through a local LED light or recognised via Wi-Fi in the machine computer on the **AW application**.

# AW Linear Axes System Automationware

## Configuration through the EASY™ software



It is possible to set up a maximum of 64 positions, each characterised by programmable speed and acceleration.

The position data are absolutely or relatively definable respect to the current position.

The selection of the controls for the different positions (*in succession or random*) allows the automatic functional simulation of the linear Axes.

This control moves the actuator to the indicated position, and gives a graphical indication of the reached position.

An alternative method to define the position to reach is the interactive motion of the carriage, and associate the speed and acceleration to each motion.

The set up position can be saved in one of the 64 positions of the cabinet.

A third method to define the positions is possible, if these are increasing remote each other.

In this case with only one control on the cabinet “**default settings**”, all useful motions for the application can be set up, also combining the different positions **XYZ**, in case of more motors.

When the configuration has been made, the different positions can be recalled through the available digital I/O from the drive.

There is also the optional possibility to create a database for the function trends, activating diagnostic methods on the time power profile to avoid malfunctions of the operations.



## AW Linear Axes System

The Motion Line-Axes series has an adequate accessory range to support every application:

- **Compact high efficiency-planetary gearboxes** with a small backlash
- **Flanges and shrink disks or clamping bushes** for a perfect compatibility with motors and gearboxes
- **Cams**, according to the used motors
- **Different kinds of motors and drivers** to complete the portal
- **Sensors** for mobile and/or fixed carriage units and for mobile profile
- **Additional carriages** for a good load distribution
- **Different sensors such as Hall-effect**, induction or electromagnetic with Bracket profile fixing
- **Connecting brackets and connecting system** for XYZ configurations or adaptors for **SM-series** connection

## Consult the detailed technical guide

Linear Axes ML series and accessories on our web site:  
[www.automationwareusa.com](http://www.automationwareusa.com)



# AW Linear Axes System

## Automationware

### Order Code

Below the identifying table to determine model and dimensional specifications of the Axes to order.  
 (For 2D or 3D configurations please visit our website [www.automationware.it](http://www.automationware.it) or send your request to [info@automationware.it](mailto:info@automationware.it))

#### Order example

##### ML-45-12-1200-FC-22

ML45 Mono Guide Unit with long carriage, 1200mm stroke, traction shaft with bore for 22mm - shrink disk.

##### ML-80-11-500-BC-A

ML80 Mono Guide Unit with short carriage, 500mm stroke, traction shaft for clamping bushes on the "A" side.

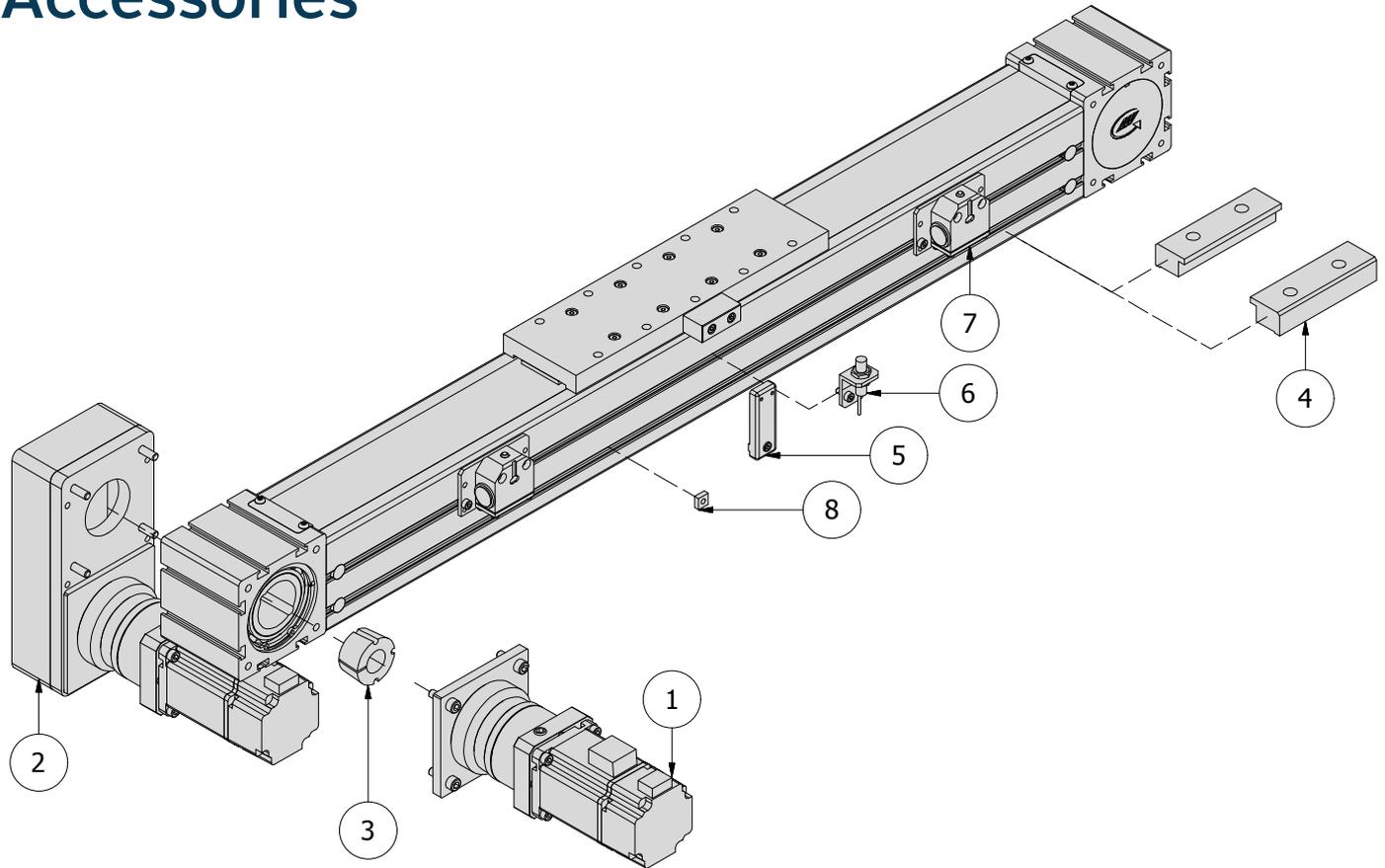
ML	45	12	1200	FC	F	A	A	12
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Unit model</p> <p>Axes size</p> <p>Type (Nr. Guides and slides)</p> <p>Total stroke mm (instrumental + security)</p> <p>Configuration traction shaft Fc = Shrink disk bore                      Bc = Clamping bushes                      FCH = Keyhole                      M = Motor shaft</p> </div> <div style="width: 45%; text-align: right;"> <p>Bore diameter</p> <p>Motion-input side A or B</p> <p>Spindle exit side A or B</p> <p>Spindle diameter</p> </div> </div>								



# AW Linear Axes System

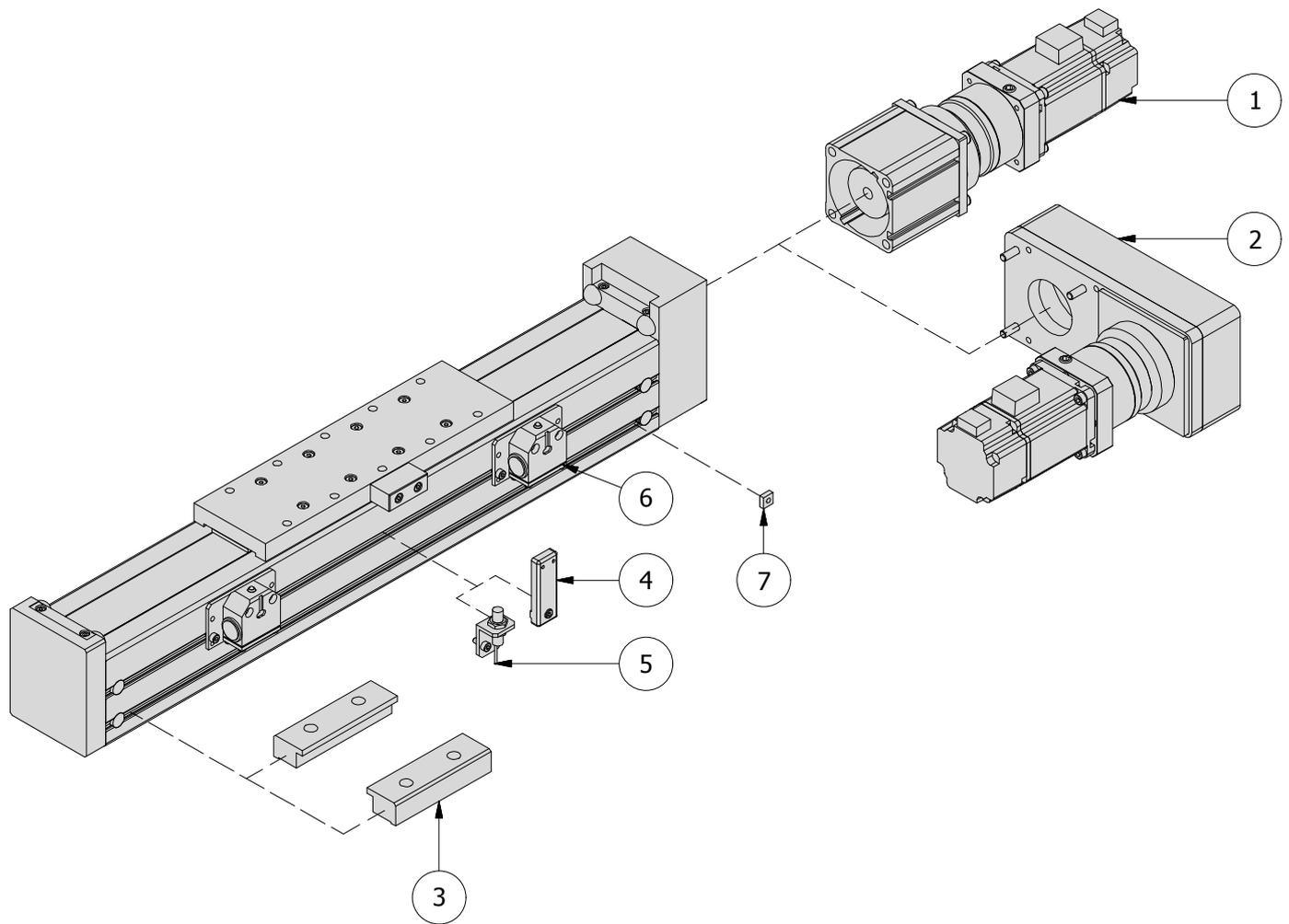
## Automationware

### Accessories



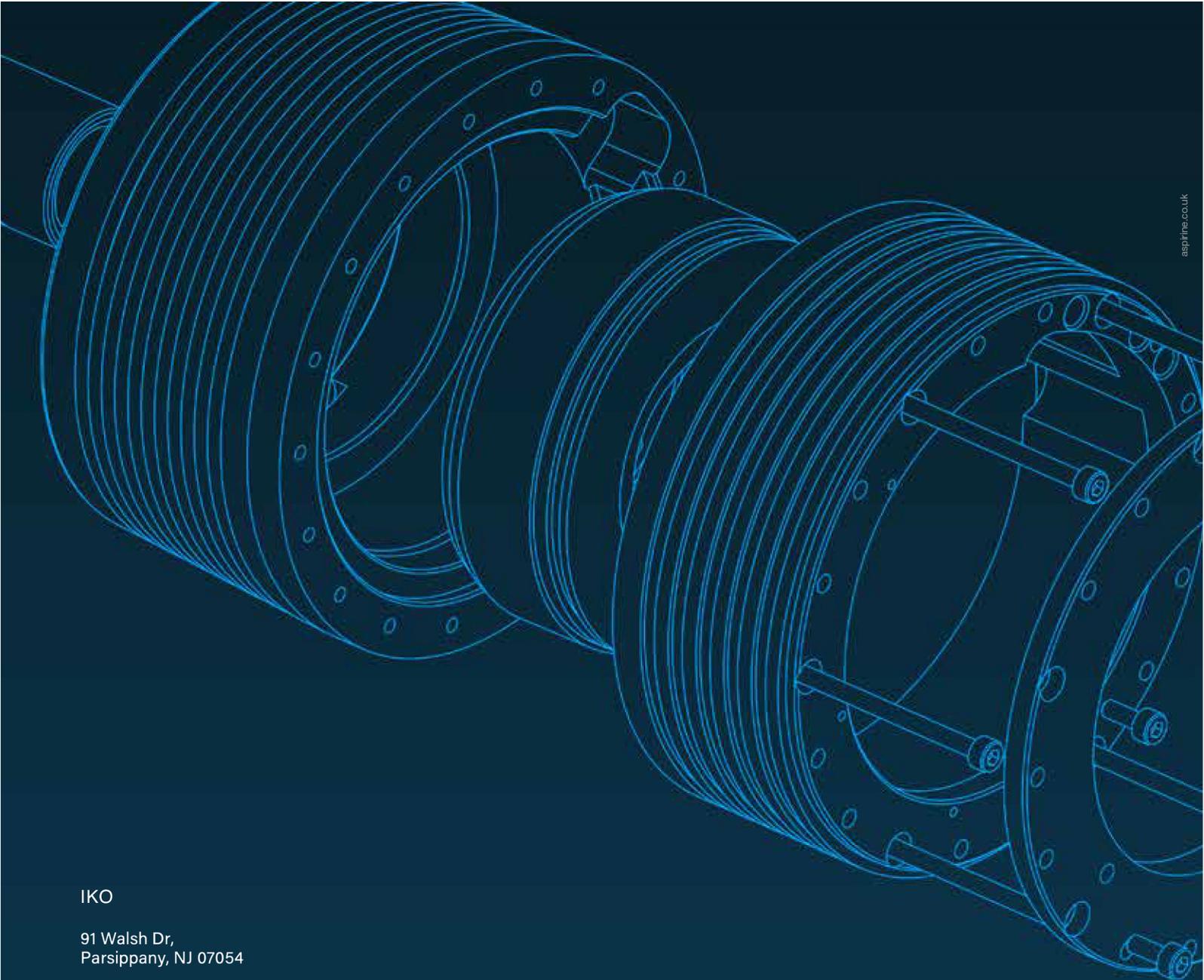
#### ACCESSORIES BELT AXES

POSITION	DESCRIPTION
1	Direct transmission mounting kit
2	Parallel Transmission mounting kit
3	Clamping bushes / Shrink disk
4	Fixing bracket clamps Kit
5	Hall-effect sensor
6	Inductive sensor
7	Mechanic sensor
8	Channel fixing bolts



## ACCESSORIES SCREW AXES

POSITION	DESCRIPTION
1	Direct transmission mounting kit
2	Geared transmission mounting kit
3	Fixing bracket clamps Kit
4	Hall-effect sensor
5	Inductive sensor
6	Mechanic sensor
7	Channel fixing bolts



IKO

91 Walsh Dr,  
Parsippany, NJ 07054

Telephone 862 895 6280  
Email [ikoaw\\_usa@ikonet.co.jp](mailto:ikoaw_usa@ikonet.co.jp)

Join the community



© 2019 by AutomationWare – all rights reserved. This brochure contains indicative parameters. AutomationWare reserves the right to modify any specification at any time. For a more detailed consultation we recommend the use of the technical datasheet and/or to visit our website [www.automationware.it](http://www.automationware.it).

All the material contained in this website is the property of AutomationWare and/or of the quoted companies; to it the Italian and European laws in matter of Copywrite are enforceable; any text taken from other sources is also protected by the Copywrite and Property rights of the respective Trademarks. All information and contents (texts, graphics and images) reported in this catalogue are, to the best of our knowledge, public property; if material subject to Copywrite or in infringement of the law has unintentionally been published, please inform us and we'll immediately remove it. All the trademarks shown belong to their legal owners; third party trademarks, product names, commercial names, corporate names, and companies quoted could be proprietary trademarks of their legal owners or registered trademarks of other companies and have been use for explanatory purposes only and for the benefit of the owners, without any intention of infringing the current Copywrite laws.