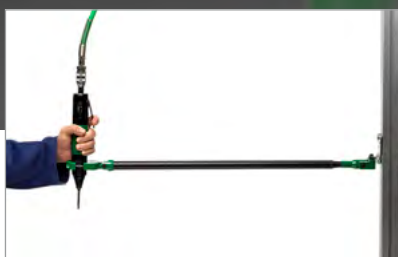


# Accessories for ergonomic workplace



- Magnesium telescopic arms
- Cartesian arms
- Articulated cartesian arms
- Assisted Cartesian arms
- Positioning devices
- Balancing arms - Balancers
- Auxiliary grips

**Fiam**®  
PEOPLE AND SOLUTIONS



# Accessories for ergonomic workplace

Nowadays, an **ergonomic and rational work station** is designed according to the most advanced ergonomic principles, which take account not just of physical ergonomics, but **cognitive** and **organisational** ergonomics as well.

In fact, it is not enough just to provide operators with tools that prevent any physical fatigue to the hand-arm system, are not very noisy and keep working environments healthy by not polluting the air with oil condensates. Nor is it enough to arrange the components to be assembled comfortably, conveniently and correctly on the work bench.

In fact, technological evolution has brought **other factors that affect operator well-being** into play, and they are linked, for example:

- **mental fatigue** because of the need for continuous attention to the machine
- **programming of increasingly advanced tools**, possibly electronic
- **operating flows** that are increasingly varied so operation needs to be more flexible
- **mental activities to organise work** are required continually
- **continuous access to a range of operational information.**

Considering all these variants when designing an ergonomic workstation therefore becomes an essential choice in order to safeguard workers' health and promote their psychophysical well-being. Enabling them to "work better" will also improve productivity and finished product quality.

The focus of ergonomics is a strong point of Fiam solutions. All solutions are designed and built to reduce any kind of fatigue for operator, to ensure maximum safety of use and to increase production performance. **Fiam** also **offers** qualified consultancy and training on these issues.

## FIAM SERVICE: ALWAYS CLOSE TO ITS CUSTOMER

Fiam, together with its solutions, offers a wide range of **services in order to optimize, in terms of safety and ergonomics, the productive processes of its customers:** from the choice of the tools and the accessories to the suggestions about correct operator's posture and the correct use of ergonomic tools.

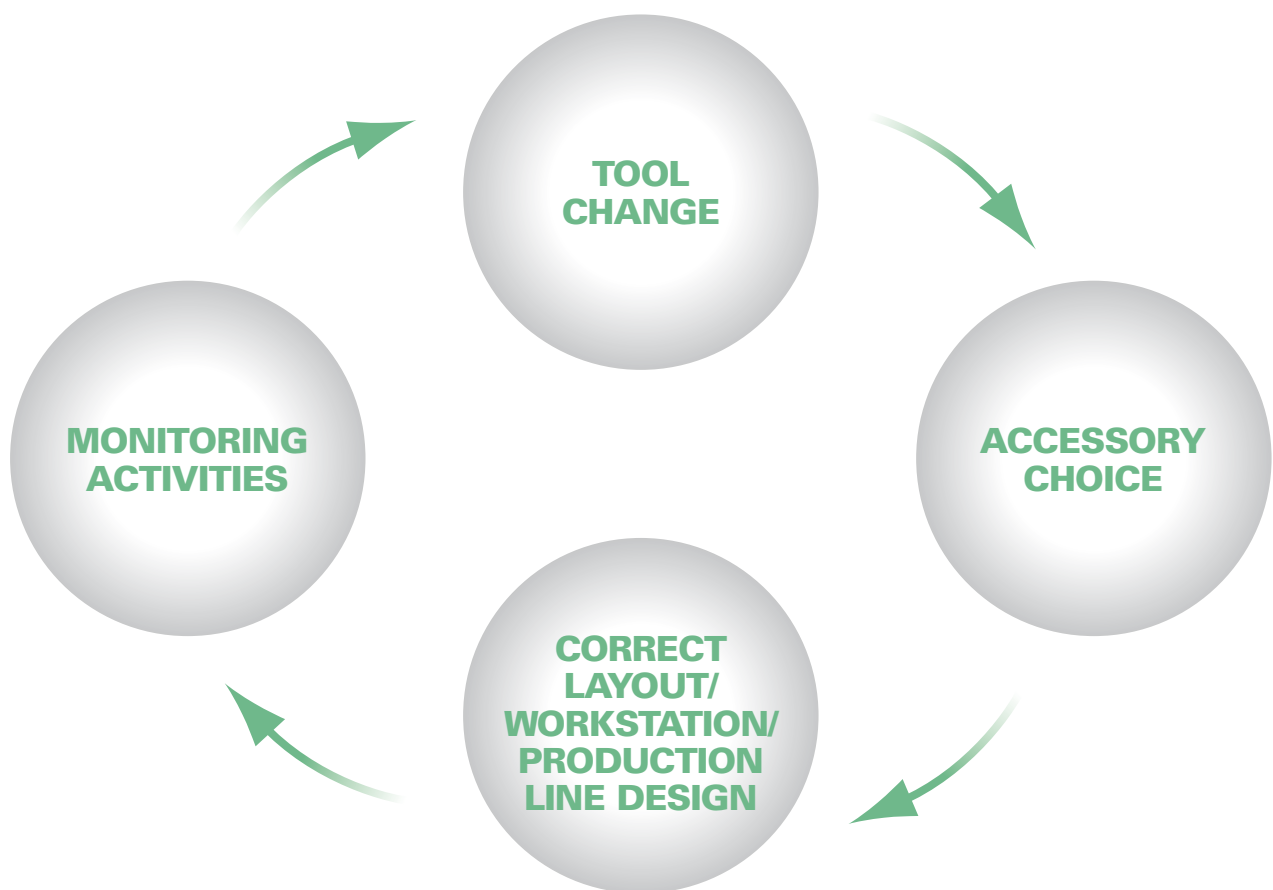
For all further details, please contact  
Fiam Technical Advice service.

*To learn more about ergonomics and safety in industrial tightening, read our publication, which you can request from Fiam Customer Service [info@fiamgroup.com](mailto:info@fiamgroup.com), or ask to register for our training webinars: find out about them at [www.fiamgroup.com](http://www.fiamgroup.com)*



Many factors have to be considered in order to design an ergonomic workplace, namely:

- **Using last generation tools** which eliminate the beginning operator's risk factors.  
The tools must be chosen according to the type of joint, of screws, of operator's position at workplace (sitting or standing).
- **Use of accessories** that, according to their combination, **can solve specific logistic and productive needs**.  
Accessories need to be specified according to tool type, type and dimensions of workplace, type and dimensions of workpiece.  
Accessories also include screwdriver bits, which can promote vibrations if, for example, they are very long.
- **Accurate design of workplace which has to consider ideal geometry and encumbrances in order to improve operator's comfort**, reducing his fatigue. As an example you have to consider the application and operator's position (if vertical or horizontal) and the type of handle to be used.
- **Check how tools and accessories are used by the operators**. Monitoring activities are often essential to optimize productivity while avoiding risky situations for the operators.



## BT-MG MAGNESIUM TELESCOPIC ARMS

New range of telescopic arms in magnesium alloy, designed and produced by Fiam.

Conform for use **with any kind of tool** (screwdrivers/nutrunners, drills, tappers) being **extremely resistant to mechanical stress** thus guaranteeing reliability and long life span, thanks to accurate manufacturing process and applied innovative materials.

Designed with different telescoping extension elements (3 for all models and 2 for BT-MG 10...), they are conform for working areas according to various productive needs: from a minimum of 45,5 cm to a maximum of over 2 meters.

Double terminal coupling guarantees great handiness and maximum freedom of action also for inclined tightening operations.

They can be **easily installed** on existing workplaces on ceiling or wall using a simple plate with reduced dimensions.



### Why magnesium?

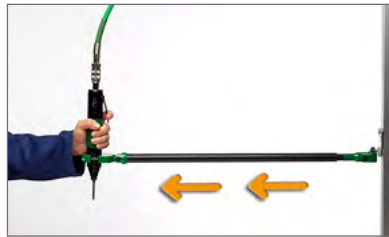
Magnesium competes with many other polymeric materials and is increasingly used in industrial contexts, from automotive, through aeronautics to biomechanics as it offers many benefits:

- it is lighter than aluminum (-30%), making the tool easier to handle
- it is highly resistant to wear and impact, comparable to the carbon fiber arms
- it has excellent vibration damping and electro-magnetic shielding properties
- it bears a yield stress similar to that of aluminium alloys
- the "alodine"® treatment ensures that it is long-lasting and corrosion resistant
- it is fully recyclable and biocompatible with human contact, making it ecological.



- **Wide Operating Area**

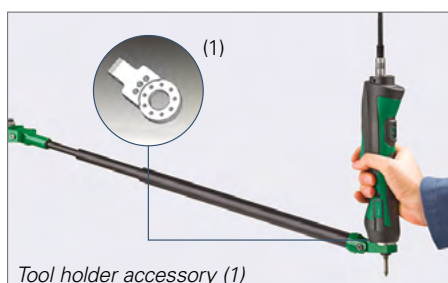
- **Wide rotation of the tool around its axis**



- They eliminate any counterblow to operator's hands
- They eliminate vibrations caused by the tool
- Reduce the worker's fatigue in handling the equipment
- They assure a comfortable and immediate taking of the tool next to the point of work
- Enable the operator to keep a good wrist position
- They prevent musculoskeletal diseases caused by repeated mechanical stresses
- Fiam BT-MG arms absorb the reaction 30% more than the other arms on the work point



Model	Code	Max torque (Nm) in lb		Max work range (mm)	Min work range (mm)	Ø max tool (mm)
BT-MG 10 800	692071420	10	88.50	660	480	26.5-50
BT-MG 10 1000	692071421	10	88.50	800	550	26.5-50
BT-MG 15 800	692071409	15	132.70	860	505	26.5-46
BT-MG 15 1000	692071401	15	132.70	1070	575	26.5-46
BT-MG 15 1500	692071404	15	132.70	1580	745	26.5-46
BT-MG 40 800	692071410	40	354	860	505	26.5-46
BT-MG 40 1000	692071402	40	354	1070	575	26.5-46
BT-MG 40 1500	692071405	40	354	1580	745	26.5-46
BT-MG 40 2000	692071407	40	354	2120	925	26.5-46
BT-MG 70 800	692071411	70	619.50	860	505	34-50
BT-MG 70 1000	692071403	70	619.50	1070	575	34-50
BT-MG 70 1500	692071406	70	619.50	1580	745	34-50
BT-MG 70 2000	692071408	70	619.50	2120	925	34-50



#### Standard equipment (supplied with arm)

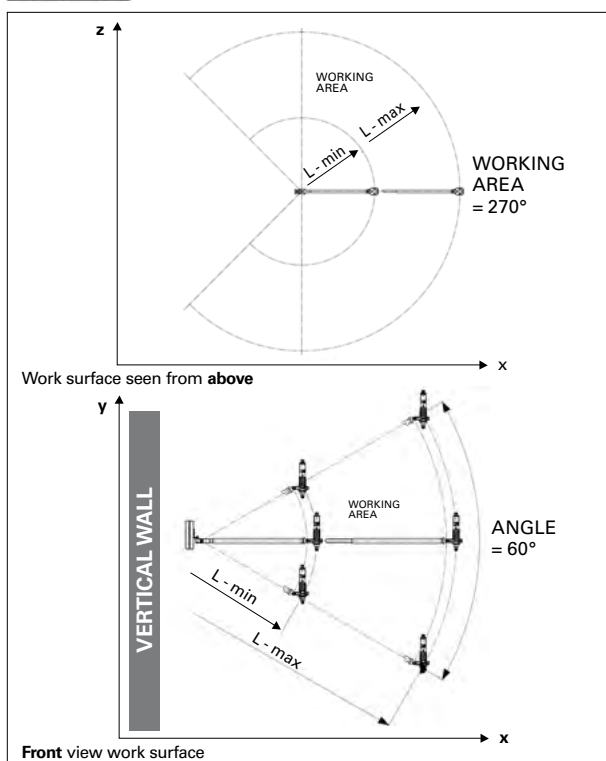
- Universal clamp with 2 kits of screws with different lengths to install tools with different diameter from 26.5 up to 50 mm
- Eco-friendly packaging
- Use and maintenance manual

#### Accessories available upon request

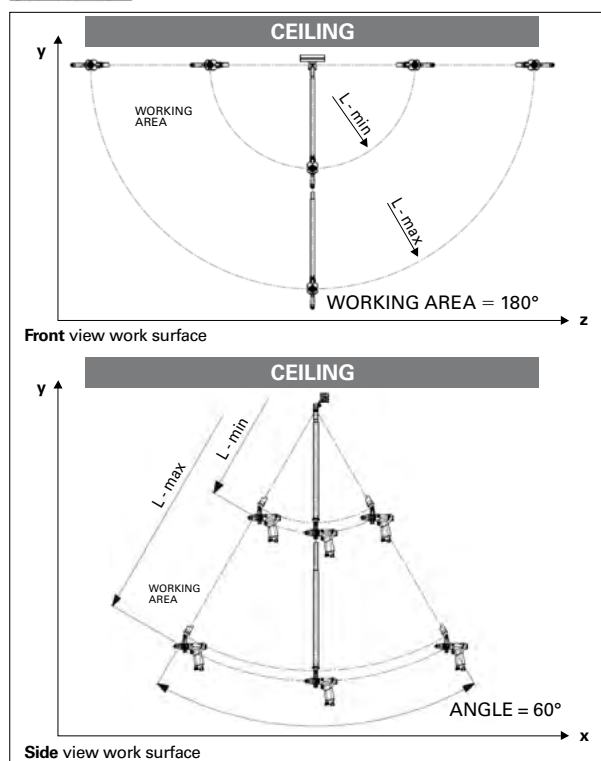
- Tool holder accessory (1) for electric screwdrivers eTensil code 692079180. Manages 9 positions of rotations.



#### WORK AREA WHEN USING HORIZONTALLY (arm fixed on vertical wall)



#### WORK AREA WHEN USING VERTICALLY (arm fixed to the ceiling)



## CARTESIAN ARMS

The new Fiam Cartesian arms represent fundamental solutions for ergonomics workplace. They are completely **designed and manufactured by Fiam** and can be used with any type of tool with a diameter up to 50 mm and weight up to 11 kg. A universal clamp is supplied but, upon request, numerous accessories are available for correctly fitting different Fiam tools to ensure maximum safety and functionality.

Available in various versions:

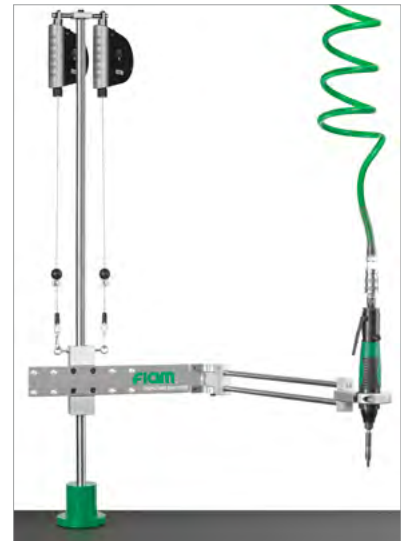
- **Cartesian arms**
- **Articulated Cartesian arms**
- **Cartesian Arms and Articulated Cartesian Arms to be fixed to the surface or upper structure (TOP)**
- **Assisted Cartesian arms**

Thanks to these arms, all work operations take place without any oscillation and their movements are **extremely fluid and flowing** and this translates into a significant increase in work precision, the consequent quality of the production process as well as ergonomics for the operator.

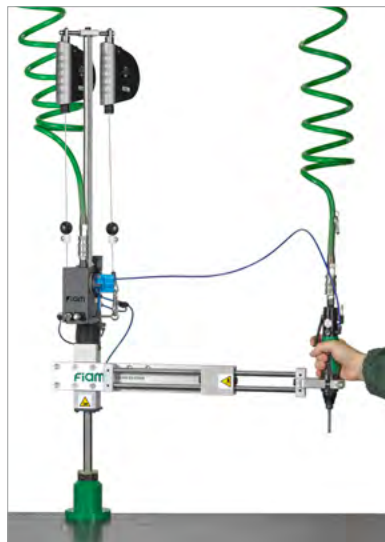
All models are also **available with a position monitoring device for processing the angular and linear displacement of the tool on the work point** (see page 16).



BC Cartesian Arm



BCA Cartesian Arm



BC25 PK with pneumatic pushing force



BC40 LK with pneumatic locking device for auto feed screwdrivers with automatic forward bit stroke



- They eliminate any counterblow on the operator's hands
- They eliminate the need for force in holding the tool
- They drastically reduce or eliminate vibrations
- They allow the maintenance of a good wrist position
- Maintain the perpendicularity of the tool at the work point
- Improve work accuracy and the quality of the production process
- Extremely high performance even with self-tapping / self-drilling screws
- By improving the coverage of the work area, they reduce the fatigue of the hand / arm system operator



BCA-TOP Cartesian Arm

## BC CARTESIAN ARMS

### Double balancer provided

Two balancers are available to **support the tool** (weight up to 11 Kg.) and other hanging elements (models for heavier tools are available upon request)

### Sturdy vertical column

Its increased diameter **avoids any swings**

### Upon request: adjustable vertical stroke limiters

(clamps with rubber protection) are available to prevent the horizontal arm from getting too close to the work area (and to avoid damaging the workpiece with the tool)

### Ball recirculating runners

Vertical and horizontal movements **running on ball recirculating runners** to guarantee smoothness, handiness and accuracy

### Safety magnet which keeps the horizontal stroke locked

- and therefore the tool - when the arm is in the rest position

### Robust structure

Columns of vertical and horizontal axis made of **tempered and chrome steel** for longer lifespan

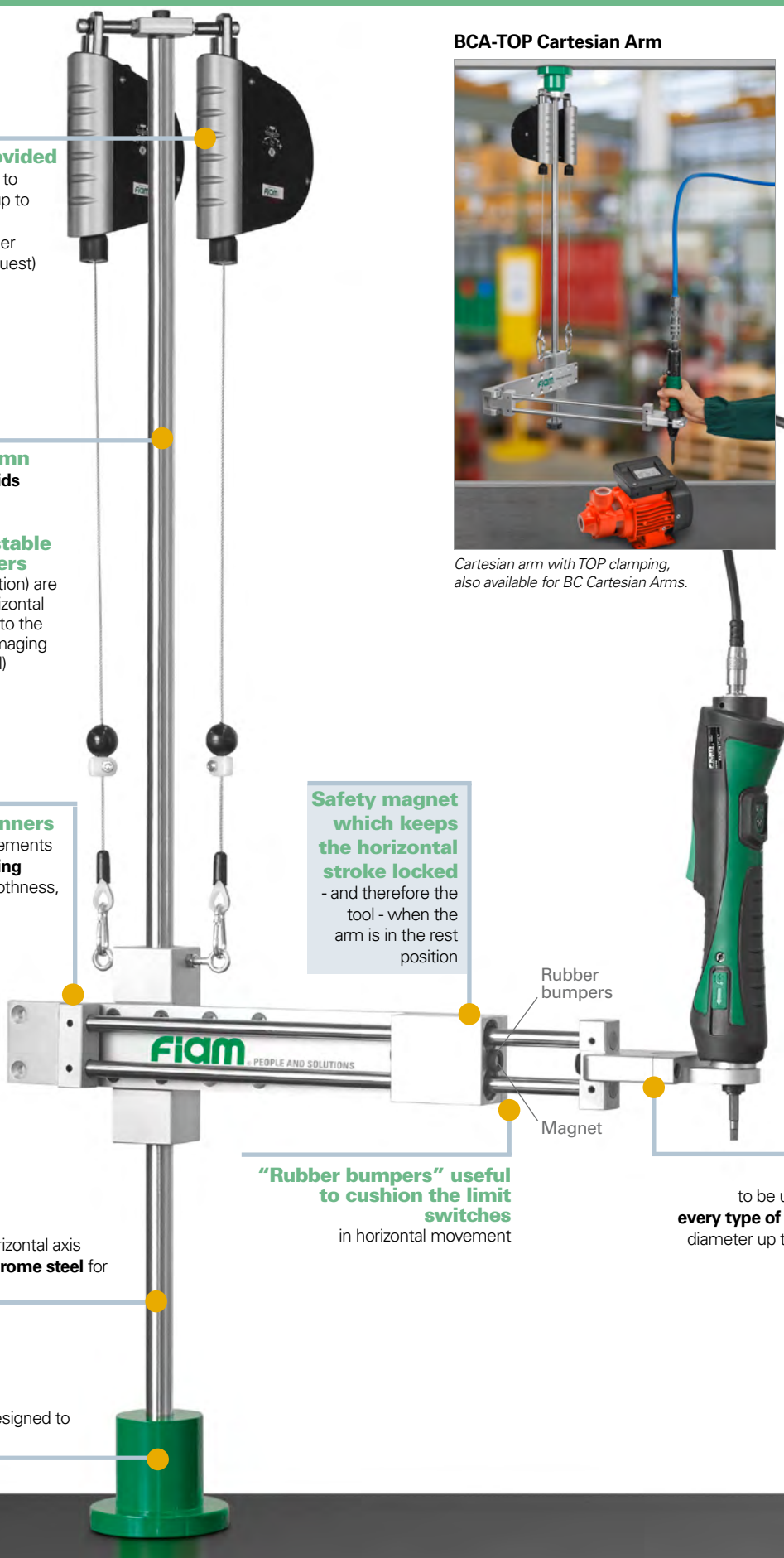
### Base plate

**Stable** drilled base plate designed to **prevent swinging risk**

### BCA-TOP Cartesian Arm



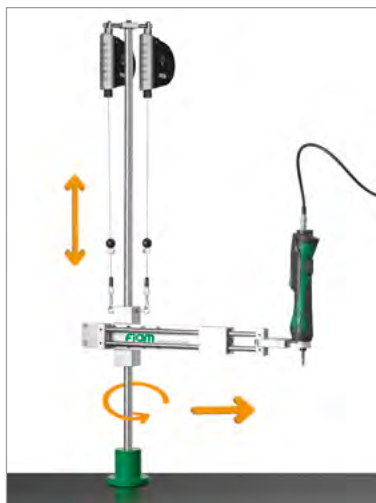
Cartesian arm with TOP clamping, also available for BC Cartesian Arms.



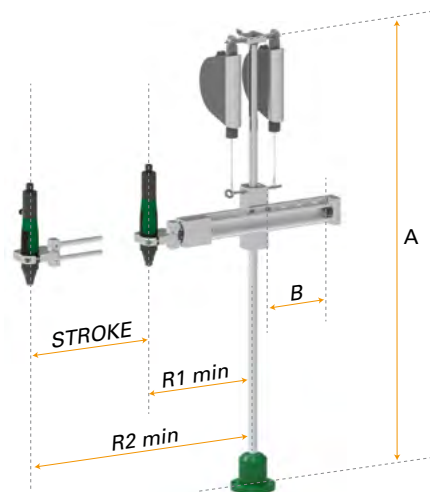
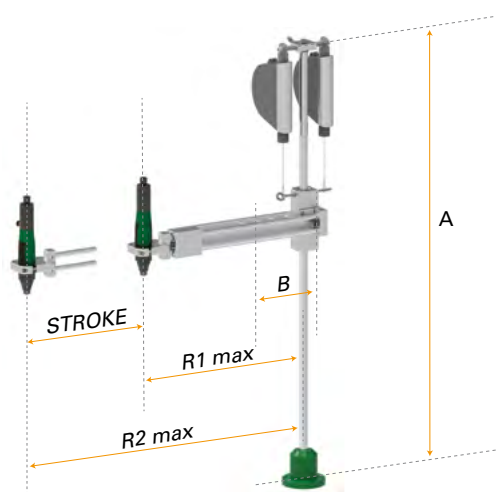
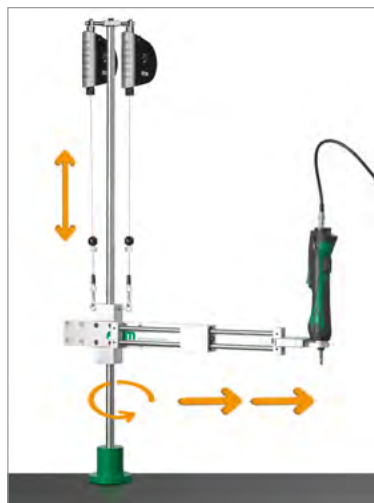
**"Rubber bumpers" useful to cushion the limit switches** in horizontal movement

**Clamp** to be used with **every type of tool** with diameter up to 50 mm



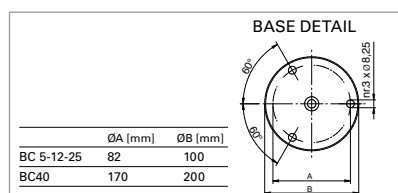


Lateral extension up to 760 mm



The horizontal bar **can be fixed in different positions** (on the internal or most external screws) to allow to reach wider working area while occupying minimum space (R1 - R2).

Description	Code	Max torque		Max load	Max tool diameter	Arm dimension A	Arm regulation B	R1 min-max	R2 min-max
		Nm	in lb						
BC5 Cartesian Arm	692031030	5	44,25	2	32 ÷ 50	1041	160	285-445	600-760
BC12 Cartesian Arm	692031031	12	106,2	2	32 ÷ 50	1065	160	285-445	600-760
BC25 Cartesian Arm	692031032	25	221,25	2	32 ÷ 50	1065	160	285-445	590-750
BC40 Cartesian Arm	692031033	40	354	2	32 ÷ 50	1047	176	274-450	564-740
BC40/7 Cartesian Arm	692031038	40	354	7	32 ÷ 50	1047	176	274-450	564-740
BC40/11 Cartesian Arm	692031040	40	354	11	32 ÷ 50	1047	176	274-450	564-740
BC5-TOP Cartesian Arm	692031065	5	44,25	2	32 ÷ 50	1041	160	285-445	600-760
BC12-TOP Cartesian Arm	692031076	12	106,2	2	32 ÷ 50	1065	160	285-445	600-760
BC25-TOP Cartesian Arm	692031066	25	221,25	2	32 ÷ 50	1065	160	285-445	590-750
BC40-TOP Cartesian Arm	692031077	40	354	2	32 ÷ 50	1047	176	274-450	564-740
BC40/7-TOP Cartesian Arm	692031078	40	354	7	32 ÷ 50	1047	176	274-450	564-740



#### Standard equipment

- Clamp • 2 balancers • Instructions for assembly and use • Eco-friendly packaging

#### Accessories available upon request

- Models with positioning device (see page 16) • Universal clamp, auxiliary grip for use with self-powered screwdrivers, arm anti-rotation device (see pages 20-21)

## BCA ARTICULATED CARTESIAN ARMS

### Sturdy vertical column

Its increased diameter **avoids any swings**

### Upon request: adjustable vertical stroke limiters

(clamps with rubber protection) are available to prevent the horizontal arm from getting too close to the work area (and to avoid damaging the workpiece with the tool)

### Ball recirculating runners

Vertical and horizontal movements **running on ball recirculating runners** to guarantee smoothness, handiness and accuracy

### Robust structure

Columns of vertical and horizontal axis made of **tempered and chrome steel** for longer lifespan

### Base plate

**Stable** drilled base plate designed to **prevent swinging risk**

### Double balancer provided

Two balancers are available to **support the tool** (weight up to 11 Kg.) and other hanging elements (models for heavier tools are available upon request)

### "Flag" opening from 0 to 120°

Possibility of arranging the arm both with the joint on the right and on the left depending on the field of work to be covered and up to 120°.

For an excellent reaction to the torque it is advisable to work with the angular opening between 90° and 120°.

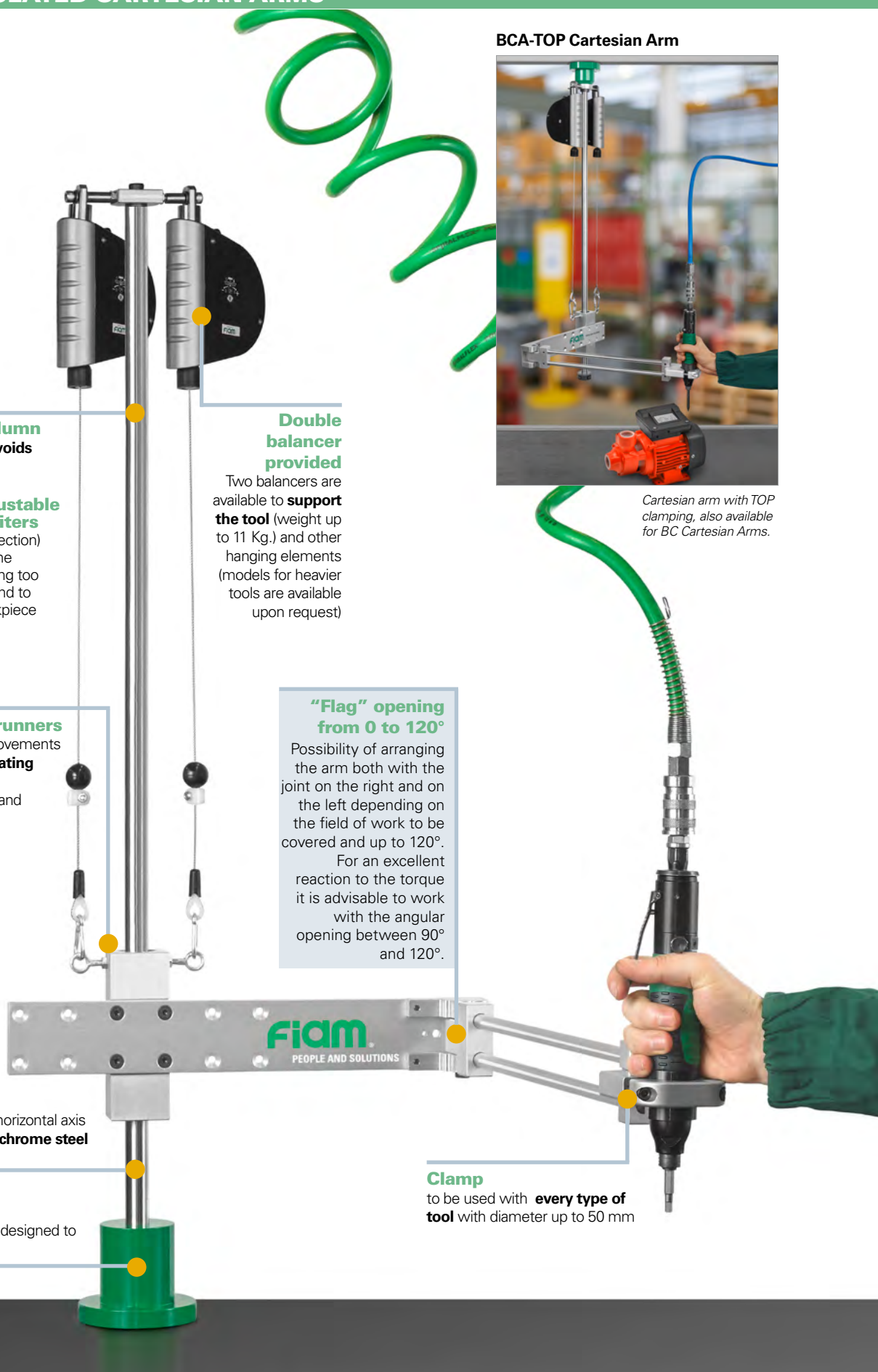
### Clamp

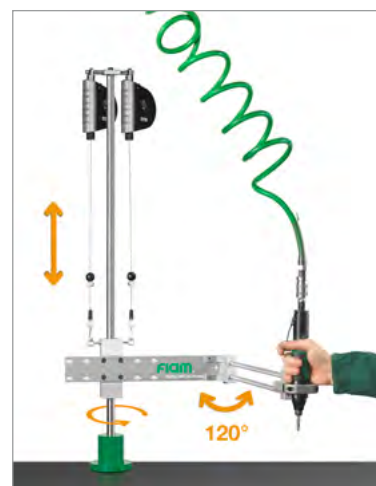
to be used with **every type of tool** with diameter up to 50 mm

### BCA-TOP Cartesian Arm



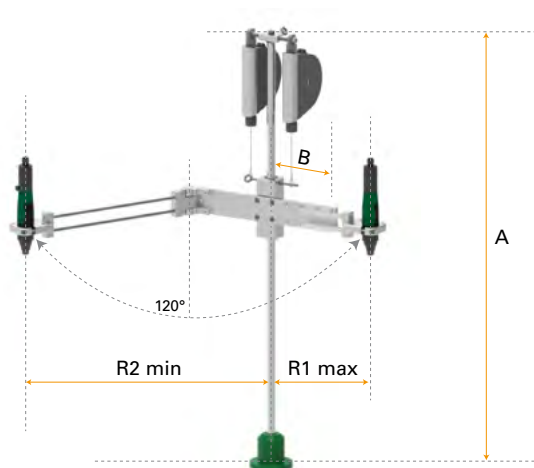
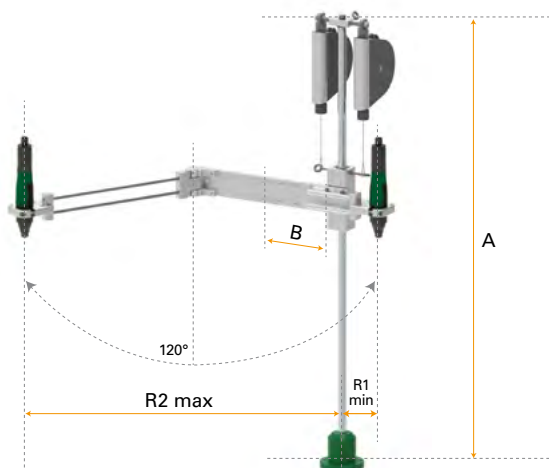
*Cartesian arm with TOP clamping, also available for BC Cartesian Arms.*





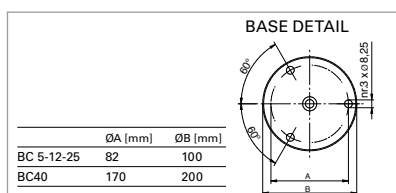
### Lateral extension up to 730 mm - "Flag" opening from 0 to 120°

Possibility of arranging the arm both with the joint on the right and on the left depending on the field of work to be covered and up to 120°. For an excellent reaction to the torque it is advisable to work with the angular opening between 90° and 120°.



The horizontal bar **can be fixed in different positions** (on the internal or most external screws) to allow to reach wider working area while occupying minimum space (R1 - R2).

Description	Code	Max torque		Max load	Max tool diameter	Arm dimension A	Arm regulation B	R1 min-max	R2 min-max
		Nm	in lb	kg	mm	mm	mm	mm	mm
BCA5 Articulated Cartesian Arm	692031034	5	44,25	2	32 ÷ 50	1041	160	110-260	610-730
BCA12 Articulated Cartesian Arm	692031035	12	106,2	2	32 ÷ 50	1065	160	110-260	610-730
BCA25 Articulated Cartesian Arm	692031036	25	221,25	2	32 ÷ 50	1065	160	110-260	610-730
BCA40 Articulated Cartesian Arm	692031037	40	354	2	32 ÷ 50	1047	176	110-260	610-730
BCA40/7 Articulated Cartesian Arm	692031039	40	354	7	32 ÷ 50	1047	176	110-260	610-730
BCA40/11 Articulated Cartesian Arm	692031041	40	354	11	32 ÷ 50	1047	176	110-260	610-730
BCA5-TOP Articulated Cartesian Arm	692031067	5	44,25	2	32 ÷ 50	1041	160	110-260	610-730
BCA12-TOP Articulated Cartesian Arm	692031068	12	106,2	2	32 ÷ 50	1065	160	110-260	610-730
BCA25-TOP Articulated Cartesian Arm	692031069	25	221,25	2	32 ÷ 50	1065	160	110-260	610-730
BCA40-TOP Articulated Cartesian Arm	692031070	40	354	2	32 ÷ 50	1047	176	110-260	610-730
BCA40/7-TOP Articulated Cartesian Arm	692031079	40	354	7	32 ÷ 50	1047	176	110-260	610-730



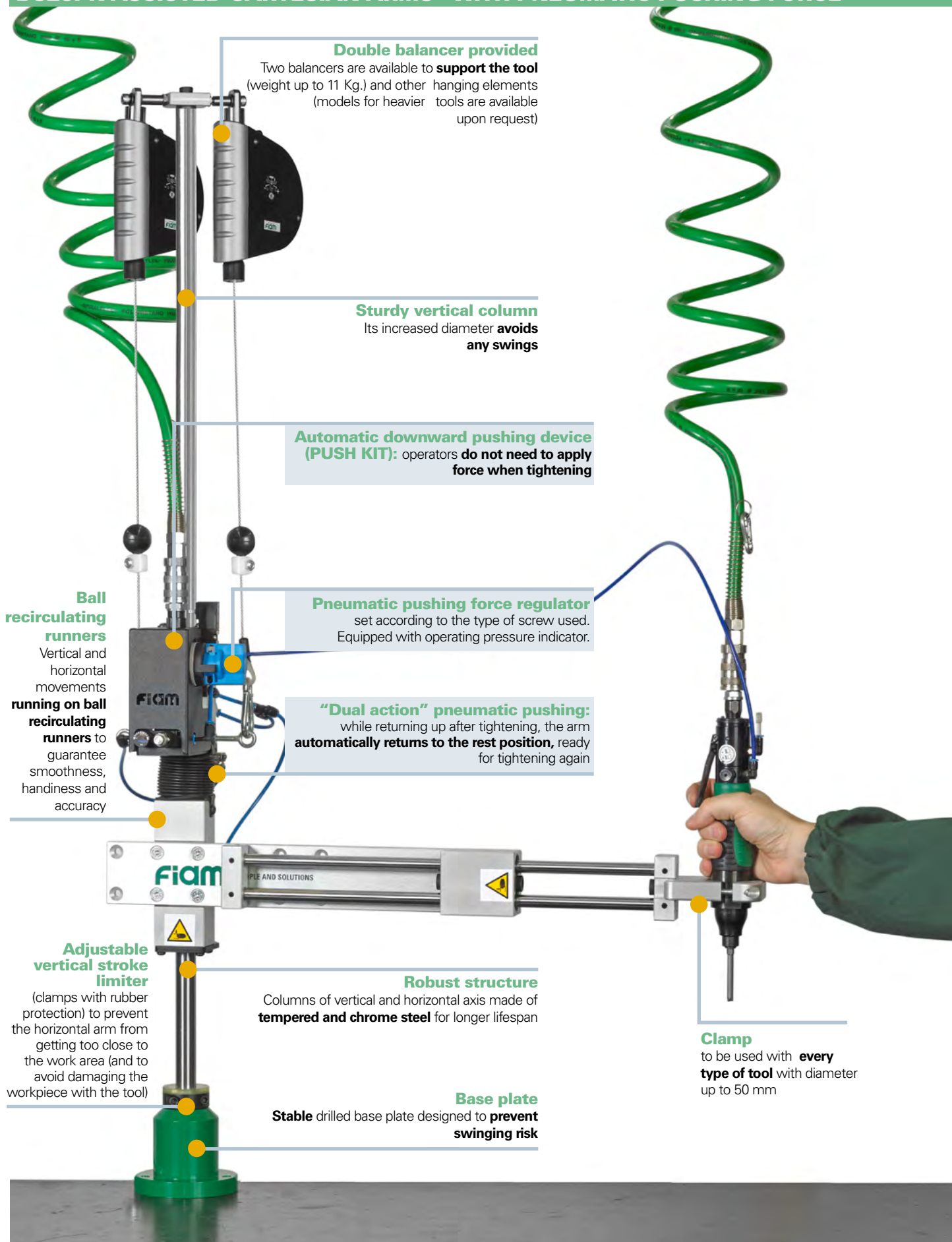
#### Standard equipment

• Clamp • 2 balancers • Instructions for assembly and use • Eco-friendly packaging

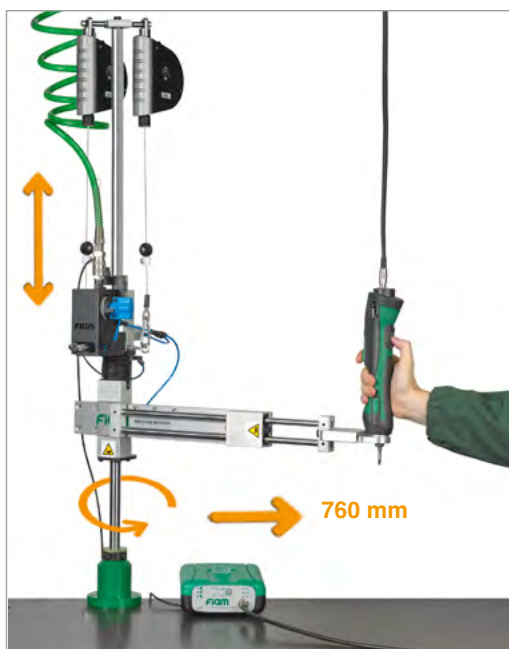
#### Accessories available upon request

• Models with positioning device (see page 16) • Universal clamp, auxiliary grip for use with self-powered screwdrivers, arm anti-rotation device (see pages 20-21)

## BC25PK ASSISTED CARTESIAN ARMS - WITH PNEUMATIC PUSHING FORCE





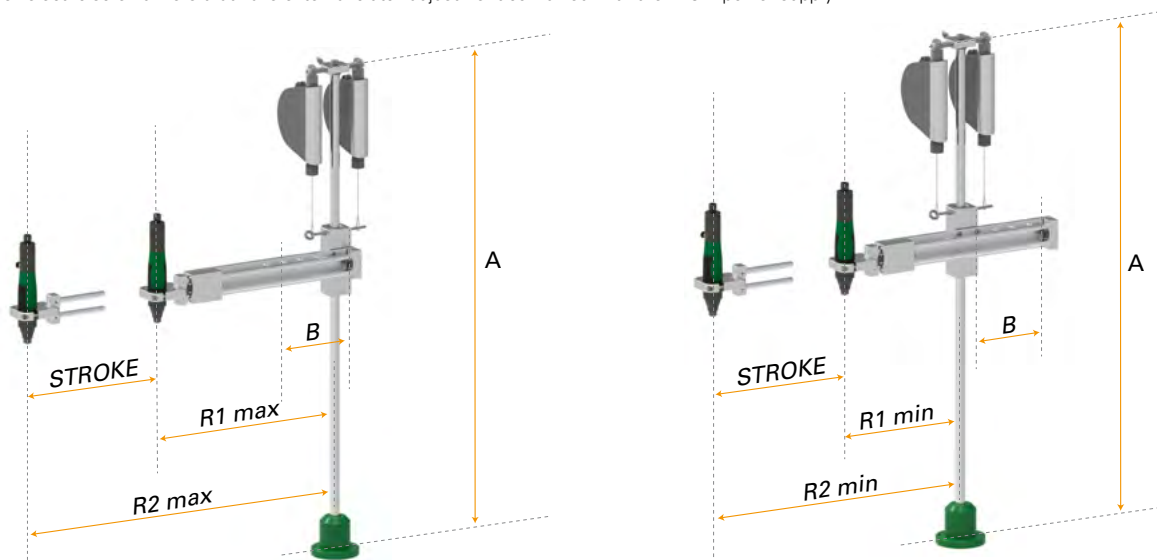


## For air and electric screwdrivers with lever start

For safety reasons, the arms can only be used with models of eTensil screwdrivers that have external clutch adjustment with only lever tightening.

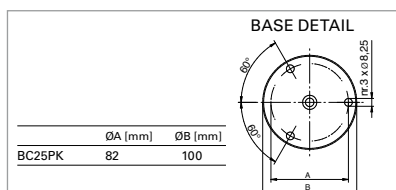
### Lateral extension up to 760 mm

**The arm works with 1 pneumatic signal output:** so it can be used with pneumatic screwdrivers that have a pneumatic signal output and with eTensil electric screwdrivers that have external clutch adjustment combined with the TPU 2 power supply.



The horizontal bar **can be fixed in different positions** (on the internal or most external screws) to allow to reach wider working area while occupying minimum space (R1 - R2).

Description	Code	Max torque		Max load	Max tool diameter	Arm dimension A	Arm regulation B	R1 min-max	R2 min-max
		Nm	in lb	kg	mm	mm	mm	mm	mm
BC25PK Cartesian Arm	692031054	25	221,25	4	32 ÷ 50	1041	160	285-445	590-750



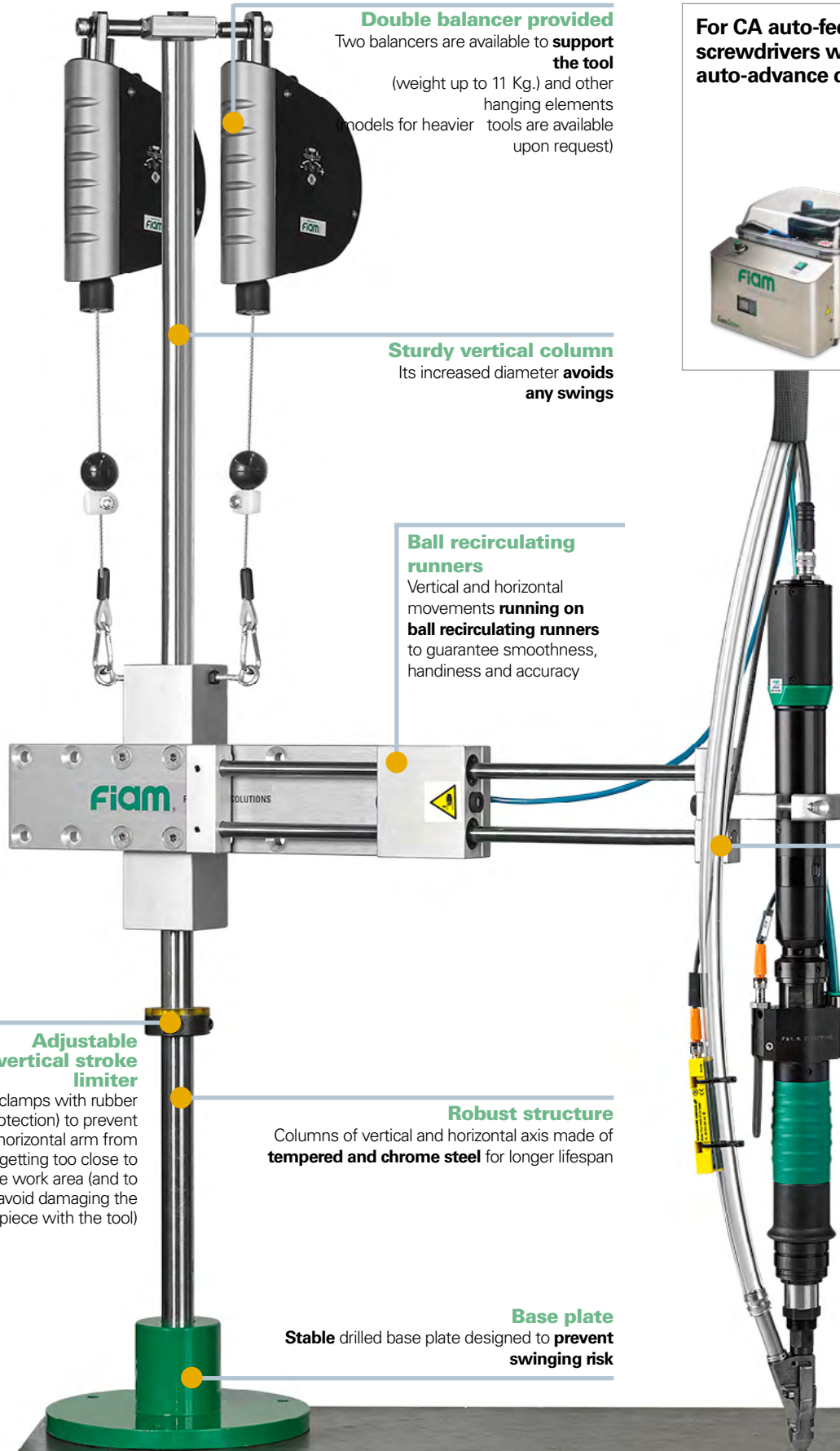
### Standard equipment

- Clamp • Adjustable vertical stroke limiter • Connection Cable for eTensil electric screwdrivers
- 2 balancers • Instructions for assembly and use • Eco-friendly packaging

### Accessories available upon request

- Models for tools weighing more than 4 Kg • Arm anti-rotation device (see pages 20)

## BC40LK ASSISTED CARTESIAN ARMS - WITH PNEUMATIC LOCKING DEVICE



### Double balancer provided

Two balancers are available to **support the tool** (weight up to 11 Kg.) and other hanging elements (models for heavier tools are available upon request)

### Sturdy vertical column

Its increased diameter **avoids any swings**

### Ball recirculating runners

Vertical and horizontal movements **running on ball recirculating runners** to guarantee smoothness, handiness and accuracy

### Adjustable vertical stroke limiter

(clamps with rubber protection) to prevent the horizontal arm from getting too close to the work area (and to avoid damaging the workpiece with the tool)

### Robust structure

Columns of vertical and horizontal axis made of **tempered and chrome steel** for longer lifespan

### Base plate

**Stable** drilled base plate designed to **prevent swinging risk**

### For CA auto-feeding screwdrivers with auto-advance device

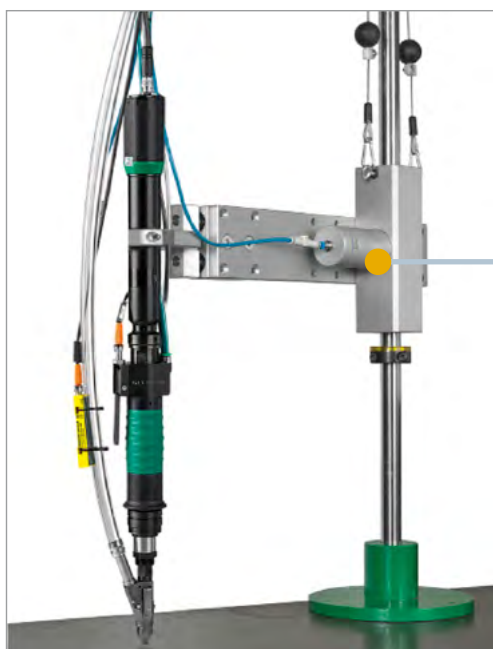


### The BC40 LK arm

is for use with auto-feed screwdrivers with automatic forward bit stroke, which provide an automatic pushing force on the workpiece to aid operators so that they do not have to apply force when tightening.

### Clamp

to be used with **every type of tool** with diameter up to 50 mm



## Pneumatic locking

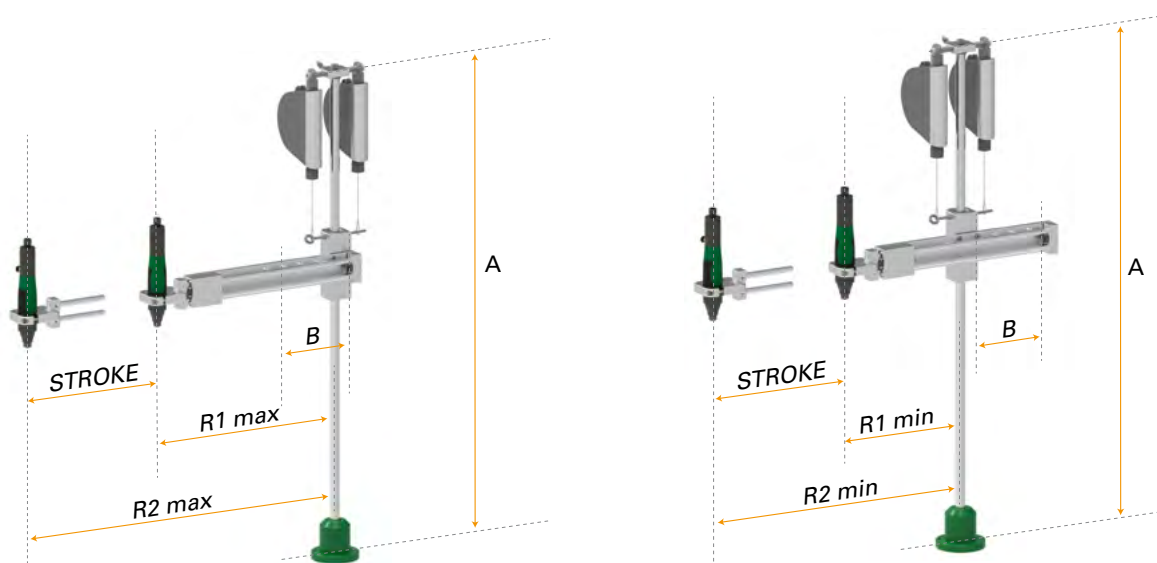
**Special device that counteracts the “recoil” caused by the tool bit during tightening** and redirects this force to the mechanical arm rather than that of the operator.

The pneumatic locking device is powered directly by the tightening system to which the arm is connected. It is sufficient to quickly connect the practical connection hose provided with the arm to the screwdriver.

## Safety locking system

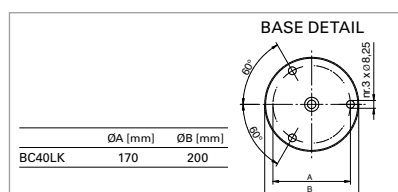
When there is no air or power supply, the system stops automatically to prevent the pneumatic device from slipping and avoid any risk of crushing and/or accidental movement.

Lateral extension up to 760 mm



The horizontal bar **can be fixed in different positions** (on the internal or most external screws) to allow to reach wider working area while occupying minimum space (R1 - R2).

Description	Code	Max torque		Max load	Max tool diameter	Arm dimension A	Arm regulation B	R1 min-max	R2 min-max
		Nm	in lb	kg	mm	mm	mm	mm	mm
BC40LK Cartesian Arm	692031055	40	354	4	32 ÷ 50	1041	160	274-450	564-740



## Standard equipment

- Clamp • Connection hose complete with pneumatic fittings for connecting the auto-feeding screwdriver
- Instructions for assembly and use • Eco-friendly packaging

## Accessories available upon request

- Models for tools weighing more than 4 Kg • Auxiliary grip for use with self-powered screwdrivers, arm anti-rotation device (see pages 20-21)

## MAGNESIUM TELESCOPIC ARM WITH POSITION MONITORING DEVICE

Magnesium telescopic arms can be fitted with a **position monitoring device** and, **combined with the TPM monitoring unit**, help make tightening systems very suitable for "Poka-Yoke" processes, while increasing the efficiency and speed of the production cycle.

Entirely designed and built by Fiam, they not only make work stations more ergonomic for the hand-arm system, but also more performant through man-machine collaboration, thereby fulfilling the needs of cognitive and organisational ergonomics. The system **supports operators and guides them through assembly operations and sequences, reducing mental fatigue** due to the continuous attention required to control such operations. A system, entirely designed and built by Fiam, to achieve the advantages of a Smart Factory where technology allows a better man-machine collaboration.



- The positioning system facilitates the operator who is guided in assembly operations
- Reduces the mental overload of the operator
- Reduces the fatigue due to the attention given by the continuous supervision of operations
- Ease of programming and immediate visual and sound feedback lead to ease of work
- They eliminate any counterblow to the operator's hands
- They eliminate vibrations
- Enable the operator to keep a good wrist position
- They assure a comfortable and immediate taking of the tool next to the point of work
- Fiam BT-MG arms absorb the reaction 30% more than the other arms on the marketplace



### The guided positioning system operates as follows:

- It locates the screwdriver position at the various tightening points and stores them (up to 35 positions/program and up to 8 programs)
- The screwdriver is enabled when it is at the first stored position (the TPM display shows POS-OK and the POS-OK LED on the telescopic arm lights)
- Each time a screw is tightened, the REMAIN display shows how many screws are left, indicating that it is ready to pass on to the next screw
- The END signal comes on when the stored cycle is complete, and gives the OK to proceed with a new work cycle
- The memorization process takes place by "self-learning": it is sufficient to carry out a work cycle and at each tightening the system stores the position realized and the number of screws
- During the memorization process, a precision tolerance can be programmed within the range: for example, for a length of 1 mm  $\pm$  10% approximately; for the angle 0.1 degrees (maximum tolerances)

*There are two models which can be paired with all Fiam air and electronic tightening solutions:*

- Arms with TPM-1: models with **single angle** movement detection;
- Arms with TPM-2: models with **angle and linear** movement detection.



Click [here](#) and discover in the video how the positioning system works

### Tightening systems with guided positioning

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#### Available for:

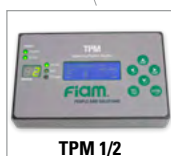
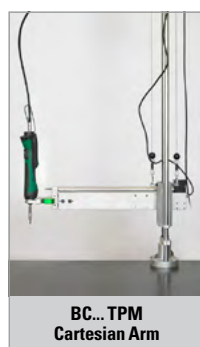
- ☒ BT  
Telescopic arms
- ☒ BC  
Cartesian arms
- ☒ BCA  
Articulated cartesian arms



## How to order?

The tightening system with a **position monitoring device**, consists of:

- Telescopic or cartesian arm complete with sensors for the position's detection (to choose in the chart at next page)
- TPM monitoring unit code 692078019 (features at the next page)
- Connecting cable to choose according to the configuration of use (see table chart at next page)



### MANUAL TIGHTENING SYSTEMS

Air Screwdriver	+	TOM Monitoring Unit code 685001062	+	Cable TPM/TOM code 692079181
eTensil electric screwdriver with mechanical clutch and automatic shut off	+	TPU 2 Power Supply Unit code 686200101	+	Cable TPM/TPU2 code 692079185
eTensil electric screwdriver with mechanical clutch and automatic shut off	+	TPU M1 Monitoring Unit code 686200109	+	Cable TPM/TPU M1 code 692079192
eTensil electric screwdriver with torque/angle current control	+	TPU C1 or TPU C3 Control unit code 686200105 code 686200107	+	Cable TPM/TPU C1 or TPU C3 code 692079192
X-PAQ hi-tech DC screwdriver With torque/angle control	+	CT2500 Feed and control unit code 686200341	+	Cable TPM/XPAQ code 692079182

### AUTOMATIC SCREW FEEDING SYSTEM

Air auto feed screwdriver	+	TOM Monitoring Unit code 685001062	+	Cable TPM/TOM code 692079181
eTensil electric auto feed screwdriver with mechanical clutch and automatic shut off	+	TPU 2 Power Supply Unit code 686200101 TOM Monitoring Unit code 685001062	+	Cable TPM/TOM code 692079181
eTensil electric auto feed screwdriver with mechanical clutch and automatic shut off	+	TPU M1 Monitoring Unit code 686200109	+	Cable TPM/TPU M1 code 692079192 * Multiple connector for I/O required
eTensil electric auto feed screwdriver with torque/angle current control	+	TPU C1 or TPU C3 Control unit code 686200105 code 686200107	+	Cable TPM/TPU C1 or TPU C3 code 692079192 * Multiple connector for I/O required
X-PAQ hi-tech DC auto feed screwdriver with torque/angle control	+	CT2500A Feed and control unit code 686200345	+	Cable TPM/CT2500A code 692079183

To connect the devices together,  
refer to product catalogs or contact  
the Fiam Technical Advice service.



#### \* Multiple connector for I/O code 692079193

To be connected to the 25-pole I / O ports of Fiam TPU units. It allows to make the I/O signals available on 3 connectors and therefore the connection with 3 devices in parallel. Equipped with connection cable between unit and multiple connector and relative power supply, it has 8 status LEDs for Outputs and 8 test buttons for Input signals.

## TPM - Tightening Position Monitor

Model	Code	Dimensions (mm)	Feed	Technical features: TPM - Tightening Position Monitor
TPM - Monitoring Unit	692078019	208 x128 x 42	24 V, 110/230V - 50/60 Hz	<ul style="list-style-type: none"> <li>• Length accuracy (mm): <math>1 \pm 10\%</math></li> <li>• Angle accuracy (degrees): <math>0,1^\circ</math></li> <li>• Maximum number of screws per program: 35</li> <li>• Number of programs: 8</li> <li>• Total number of screws: 280 (35 per program, 8 programs)</li> </ul>

		Model	Code	Max torque		Min work range (mm)	Max work range (mm)
				(Nm)	in lb		
MODELS WITH SINGLE ANGLE MOVEMENT DETECTION	TELESCOPIC	BT-MG 15 800 - TPM1	692071425	15	132.70	630	985
		BT-MG 15 1000 - TPM1	692071426	15	132.70	700	1195
		BT-MG 15 1500 - TPM1	692071427	15	132.70	870	1705
		BT-MG 40 800 - TPM1	692071428	40	354	630	985
		BT-MG 40 1000 - TPM1	692071429	40	354	700	1195
		BT-MG 40 1500 - TPM1	692071430	40	354	870	1705
		BT-MG 40 2000 - TPM1	692071431	40	354	1050	2245
		BT-MG 70 800 - TPM1	692071432	70	619.50	630	985
		BT-MG 70 1000 - TPM1	692071433	70	619.50	700	1195
		BT-MG 70 1500 - TPM1	692071434	70	619.50	870	1705
		BT-MG 70 2000 - TPM1	692071435	70	619.50	1050	2245
	BC	BC 5 - TPM1	692031046	5	44.25	445 min - 285 max	600 min - 760 max
		BC 12 - TPM1	692031047	12	106.25	445 min - 285 max	600 min - 760 max
		BC 25 - TPM1	692031048	25	221.25	445 min - 285 max	590 min - 750 max
		BC 40 - TPM1	692031049	40	354	450 min - 274 max	564 min - 740 max
MODELS WITH ANGLE AND LINEAR MOVEMENT DETECTION	TELESCOPIC	BT-MG 15 800 - TPM2	692071422	15	132.70	630	985
		BT-MG 15 1000 - TPM2	692071412	15	132.70	700	1195
		BT-MG 15 1500 - TPM2	692071415	15	132.70	870	1705
		BT-MG 40 800 - TPM2	692071423	40	354	630	985
		BT-MG 40 1000 - TPM2	692071413	40	354	700	1195
		BT-MG 40 1500 - TPM2	692071416	40	354	870	1705
		BT-MG 40 2000 - TPM2	692071418	40	354	1050	2245
		BT-MG 70 800 - TPM2	692071424	70	619.50	630	985
		BT-MG 70 1000 - TPM2	692071414	70	619.50	700	1195
		BT-MG 70 1500 - TPM2	692071417	70	619.50	870	1705
		BT-MG 70 2000 - TPM2	692071419	70	619.50	1050	2245
	BC	BC 5 - TPM2	692031042	5	44.25	445 min - 285 max	600 min - 760 max
		BC 12 - TPM2	692031043	12	106.25	445 min - 285 max	600 min - 760 max
		BC 25 - TPM2	692031044	25	221.25	445 min - 285 max	590 min - 750 max
		BC 40 - TPM2	692031045	40	354	450 min - 274 max	564 min - 740 max
	BCA	BCA 5 - TPM2	692031050	5	44.25	110 min - 260 max	600 min - 760 max
		BCA 12 - TPM2	692031051	12	106.25	110 min - 260 max	600 min - 760 max
		BCA 25 - TPM2	692031052	25	221.25	110 min - 260 max	590 min - 750 max
		BCA 40 - TPM2	692031053	40	354	110 min - 260 max	564 min - 740 max

### Standard equipment

- Clamp
- 2 balancers
- Instructions for assembly and use
- Eco-friendly packaging

The BCA Cartesian arms are arranged only with the TPM2 device being configured to monitoring the angular and linear positions. BC-BCA 40/7 and BC-BCA 40/11 models with position monitoring device are available only on request.

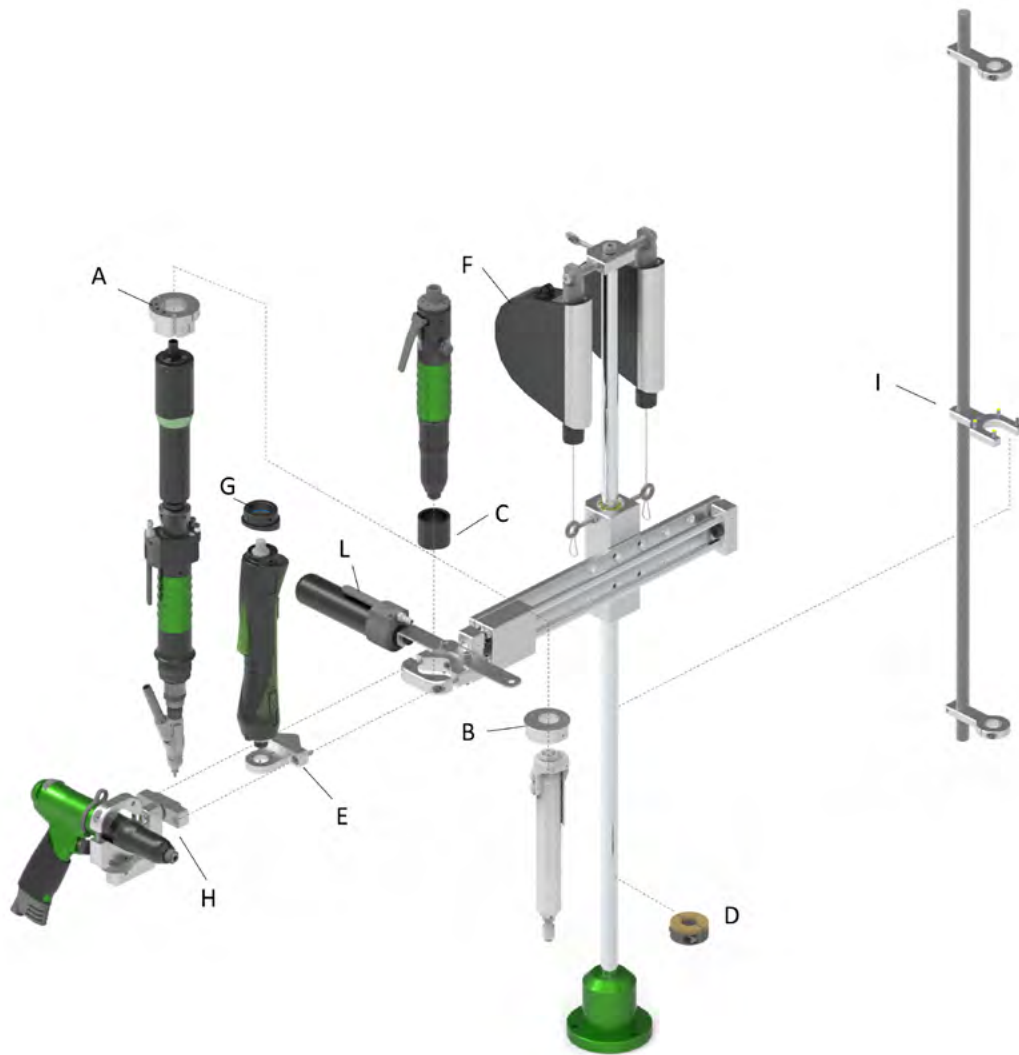
## ACCESSORIES AVAILABLE UPON REQUEST

There are numerous accessories that allow to use all Cartesian Arms with Fiam tools.

They are all entirely designed and manufactured by Fiam for:

- **correctly bracket the tool** without damaging them and therefore compromising their functionality
- always ensure the **maximum Arm performance** with any tool you use

Also available adjustable vertical travel limiters (clamps with rubber protection).



	Model	Code
A	Collar bracket Ø 32 for auto feed screwdrivers on BC and BCA models	692039195
A	Collar bracket Ø 36 for auto feed screwdrivers on BC and BCA models	692039196
B	Collar bracket for SD electronic XPAQ screwdrivers on BC and BCA models	692039099
C	Collar bracket for 15C and 26C 4/5 screwdrivers on BC and BCA models	692039006
C	Collar bracket for 26C 8/10/12 screwdrivers on BC and BCA models	692039007
D	Vertical stroke limiter ring for BC and BCA 12 /25 models	692039088
D	Vertical stroke limiter ring for BC and BCA 40 models	692039089
D	Vertical stroke limiter ring for BC and BCA 5 models	692039109
E	Collar bracket for eTensil screwdrivers on BC and BCA models	692039108
F	Increased balancer	upon request
G	Upper collar for clamping eTensil screwdrivers to BC and BCA arms	681041034
H	Universal clamp for BC/BCA arms	692039233
I	Anti-rotation device for BC/BCA 5 arms	692031071
I	Anti-rotation device for BC/BCA 12 and 25 arms	692031072
I	Anti-rotation device for BC/BCA 40 arms	692031073
L	Auxiliary grip for BC/BCA arms	692039237



## UNIVERSAL CLAMP FOR BC AND BCA ARMS

Suitable for working **on work points on vertical or inclined surfaces** using 32–50 mm diameter tools with pistol grips, angled heads or open heads.  
The clamp facilitates a large

operating range and promotes a good hand-arm system position by rotating around two axes.  
It cannot be used with BC25PK models (with pneumatic pushing device) or BC40LK models (with

pneumatic locking device).



Model	Code
Universal Clamp	692039233

## AUXILIARY GRIP

When carrying out **more than one assembly cycle** or when the **torques are higher than 4 Nm** (straight tools) or **than 10 Nm** (pistol tools), it is recommended to use an auxiliary grip which permits a reduction of the **torque reaction dividing work load on both hands** (ISO 11148-6 standard).

For more information please contact Fiam Technical Advice service.



- They eliminate any counterblow on the operator's hands
- They allow hand-arm reaction to be released on two hands
- They drastically reduce or eliminate vibrations

ø internal (mm)	For screwdriver series	Code
36	CSE...P, CDE...P	681041200
38	15C, 26C (mod. 4 and 5)	681041205
40	26C (mod. 8, 10 and 12)	681041240
43	CY...P	681041011
46	CY...	681041002



For 15C and 26C straight models, it is recommended to use the collar bracket for arm stands and auxiliary grips  
Code 692039006 for 15C (all models) and 26C (mod. 4, 5)  
Code 692039007 for 26C (mod. 8, 10, 12)



## GRIP FOR AUTO-FEEDING SCREWDRIVERS

For use with screwdrivers with automatic screw feed installed on BC and BCA Cartesian Arms.

**They allow correct gripping at any point** in which the arm can operate, preventing incongruous hand-arm system positions.

The grip can be installed on the right

or left of the boom, with vertical or horizontal gripping.

In all these positions, **the grip turns around its axis or can be locked, depending on how it needs to be used.**

It has a housing for the screwdriver connector as well as a lever to

load and shoot screws. It cannot be used with BC25PK Cartesian Arms equipped with pneumatic pushing.

Model	Code
Grip for auto-feeding screwdrivers	692039237



## BALANCER

This suspension device for tools allows the operators:

- **working safely** (tools and accessories suspended in a bad way may hit the operator) **and comfortably**, eliminating any effort to lift the tool
- **to keep a wrist in ergonomic position allowing** the immediate grip of a tool, since the cable with long stroke, positions the tool back to its initial position.



Capacity Kg	Cable length	
min - max	mm	Code
0,3 ÷ 1,5	1600	690011200
1,2 ÷ 2,5	1600	690011201
1,5 ÷ 3	2500	690011202
3 ÷ 5,5	1400	690011203

## Balancer with built-in supply

Indicated to **support and to feed at the same time** air tools.

This balancer, in addition to illustrated features, is **equipped with a highly**

**resistant flexible hose to be connected to the main air feed,**

so that the tool is directly supplied. Included built-in safety chain.



- They eliminate the need for force in holding the tool
- The tool by remaining always in the set position, ensures an easy and safe grip



Capacity Kg	Cable length	Female coupling	
min - max	mm	Type	Code
1,2 ÷ 2,2	800	1/4" gas	690011240

## TOOL HOLSTER

Practical holster **to be fixed to the work bench** in order to house **pistol tools**.

This indispensable adjustable accessory **manufactured in a sturdy resin**, avoids damage to the tools by guaranteeing a **longer lifespan**.

The holster is also **extremely versatile** since inside it has a removable adapter so that it can be used for a large number of tools.



- Properly replaced tools are not dangerous for operators

Model	Ø tool - mm	Code
FP-43-24	from 32 up to 42,5	681010100

## BALANCING ARMS

These practical **bench** suspension devices can support **various tools**, such as pneumatic and electric screwdrivers, drills, tapping machines, riveting machines, etc. **with diameters ranging from 25 to 50 mm and a maximum torque of 20 or 75 Nm.**

They ensure **extremely high working accuracy** since the tool is held perfectly perpendicular to the workpiece being assembled. This **prevents accidental damage** to the materials and **improves finished product quality.**

Work can also be carried out horizontally or on two axes at the same time, simply by choosing the specific adapter.



BA20 Balancing arm



BA75 Balancing arm

Model	Code
BA20 Balancing arm	692031009
BA75 Balancing arm	692031008

### Standard equipment

- Adjustable adapter (for the BA75 model)
- Bench base plate
- Eco-friendly packaging

### Accessories available upon request

#### BA20

- To support tools of up to 2,5 Kg. max. it is necessary to order 2 reinforced springs (code 692059010)

#### BA75

- To support tools of up to 4 Kg. max. it is necessary to order 2 reinforced springs (code 692059022)

Technical features	BA20	BA75
Max. work range	850 mm	950 mm
Min. work range	520 mm	550 mm
Max. torque	20 Nm	75 Nm
Max. load (with standard springs)	2 kg	2 kg
Max. load (with reinforced springs)	2,5 kg	4 kg
Max. rotation angle	360°	360°
Ø max. tool	from 25 to 50 mm	50 mm

For balancing arms that must support torque of more than 75 Nm or weights of more than 4 Kg., please contact **Fiam Technical Advice service.**



- They eliminate any counterblow action on the operators hands
- They eliminate the need for force in holding the tool
- They drastically reduce or eliminate vibrations
- They allow the maintenance of a good wrist position
- They maintain the perpendicularity of the tool at the point of work

## Adapters for BA20 available upon request (to be ordered separately)

### • Adapters to work on the vertical axis

Adapter	Code	Ø internal adjustable mm
AD 25/40	692059008	25÷40
AD 40/50	692059009	40÷50



### • Adapter to work on the horizontal axis

Adapter	Code	Ø internal mm
AD 36	692059014	36



### • Adapter to work on two axis

Adapter	Code	Ø internal mm
AD 36/2AX	692059015	36



For adapters with different diameter, please contact **Fiam Technical Advice service.**



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