Accessories for ergonomic workplaces
FIAM ACCESSORIES.
A VALUABLE CHOICE

Fiam accessories represent a ‘valuable choice’ because they are designed and built to guarantee long life, great reliability and the best performances of the air and electric tools. These advantages result in less maintenance and repair costs and a considerable increase of the efficiency of the productive cycles.

Alike all Fiam solutions, accessories respect ergonomic criterias and maximum operator's safety; they are designed with great attention to environment safeguard. Available in customized version based on the customer’s requirements, they are able to satisfy every customer's need.

Selection of tool, accessory and compliance with correct way of use are the factors that highly contribute in warranting “job quality,” by means of an ergonomic workplace design: an essential base of worker health, productivity and finished product quality.

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 apply to Fiam Technical Consultancy Service.
Accessories for ergonomic workplaces

In order to improve productivity and product quality safeguarding operator health, it is strategically important to design the workplace in a ergonomic and rational way. To do that, parts to be assembled and tools to be used must be easy to collect and handle.

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

- **Using last generation tools** which phase out from the beginning operator’s risk factors. They have to be identified in accordance with junction type, fastener type, 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.

- **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, horizontal).

- **Check how tools and accessories are used by the operators.** Monitoring activities are often essential aiming to optimize productivity while avoiding risky situations for the operators.
BALANCER

This suspension device for air 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
- **keeping a good wrist position**

The system guarantees at the same time the **maximum care of the tool and higher productivity**

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**ERGONOMIC NOTE**

Due to its characteristics this suspension device optimizes workplace logistically, eliminating encumbrances of air hoses.

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**BALANCER WITH BUILT-IN SUPPLY**

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

The balancer is **provided with a hose that can be connected to the main air feed** so that the tool is directly supplied.

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**ERGONOMIC NOTE**

To improve balancers effectiveness it is wise to select them based on tools weight, furthermore their force has to be properly adjusted.

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**Tabel 1:**

<table>
<thead>
<tr>
<th>Capacity Kg</th>
<th>Cable length</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,4 ÷ 1</td>
<td>1600</td>
<td>690011160</td>
</tr>
<tr>
<td>1 ÷ 2</td>
<td>1600</td>
<td>690021160</td>
</tr>
<tr>
<td>2 ÷ 4</td>
<td>2000</td>
<td>690041200</td>
</tr>
<tr>
<td>4 ÷ 6</td>
<td>2000</td>
<td>690061200</td>
</tr>
<tr>
<td>6 ÷ 8</td>
<td>2000</td>
<td>690081200</td>
</tr>
<tr>
<td>8 ÷ 10</td>
<td>2500</td>
<td>690101250</td>
</tr>
</tbody>
</table>

**Tabel 2:**

<table>
<thead>
<tr>
<th>Capacity Kg</th>
<th>Cable length</th>
<th>Male coupling</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2 ÷ 2,5</td>
<td>1350</td>
<td>1/4” gas</td>
<td>691021202</td>
</tr>
</tbody>
</table>
**AUXILIARY GRIP**

When carrying out more than one assembly cycle or when the torques are higher than 4Nm (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 (EN 792-6 standard). For more information please contact Fiam Technical Consultancy Service.

![Image of auxiliary grip](image1.png)

**ERGONOMIC NOTE**

The reaction on operator's hand (torque reaction) causes:
- Rapid changes of wrist position
- Excessive force use
- Gesture quickness

These factors can generate overload muscles and tendons.

**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 life in time. 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.

![Image of tool holster](image2.png)

**ERGONOMIC NOTE**

The tool holster, fixed to the work bench, permits a fast and immediate tool's hold and avoids excessive movements of the arms reducing the fatigue. Moreover it avoids the curve of the supply hoses which could compromise the perfect tool's functionality.

![Image of tool holster attached](image3.png)

**ERGOTECH**

**For screwdriver series**

<table>
<thead>
<tr>
<th>ø internal (mm)</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>CSE...P, CDE...P 68101200</td>
</tr>
<tr>
<td>40</td>
<td>26C        68101230</td>
</tr>
<tr>
<td>43</td>
<td>CY...P     68101101</td>
</tr>
<tr>
<td>46</td>
<td>CY...      68101002</td>
</tr>
</tbody>
</table>

**Code**

For screw driver series

<table>
<thead>
<tr>
<th>Model</th>
<th>Ø tool - mm</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP-43-24</td>
<td>from 32 up to 42.5</td>
<td>68101000</td>
</tr>
</tbody>
</table>
BA15 BALANCING ARM – up to 15Nm

This balancing arm can be used with air and electric screwdrivers, drills, tappers, riveting machines, etc. with diameters varying from 25 to 50 mm and with a maximum of 15 Nm tightening torque.

The BA15 balancing arm ensures very high precision work since the tool is kept perfectly perpendicular to the piece being assembled; therefore it avoids any accidental damages to the materials for a higher quality of the finished product.

Work can also be carried out horizontally or on two axes at the same time, simply by choosing the specific adapter. The arm with standard springs can support up to 1 kg. weight; to support a weight up to 2.5 kg., the standard springs must be replaced with the reinforced ones.

ERGONOMIC NOTE

These mechanical devices eliminate torque reaction on operator’s hand, eliminate the force required to support the tool, eliminate the vibrations, allow the maintenance of a good wrist position, permit to change the hold using both hands.

Technical features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. work range</td>
<td>850 mm</td>
</tr>
<tr>
<td>Min. work range</td>
<td>450 mm</td>
</tr>
<tr>
<td>Max. torque</td>
<td>15 Nm</td>
</tr>
<tr>
<td>Max. load (with standard springs)</td>
<td>1 kg</td>
</tr>
<tr>
<td>Max. load (with reinforced springs)</td>
<td>2.5 kg</td>
</tr>
<tr>
<td>Max. rotation angle</td>
<td>360°</td>
</tr>
<tr>
<td>Ø max. tool</td>
<td>from 25 to 50 mm</td>
</tr>
</tbody>
</table>

Standard equipment

- Reinforced spring code 692059010
- Bench base plate
- Eco-friendly packaging

Adapters for BA15 available upon request (to be ordered separately)

- **Adapters to work on the vertical axis**

<table>
<thead>
<tr>
<th>Adapter</th>
<th>Code</th>
<th>Ø internal adjustable mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD 25/40</td>
<td>692059008</td>
<td>25-40</td>
</tr>
<tr>
<td>AD 30/50</td>
<td>692059009</td>
<td>30-50</td>
</tr>
</tbody>
</table>

- **Adapter to work on the horizontal axis**

<table>
<thead>
<tr>
<th>Adapter</th>
<th>Code</th>
<th>Ø internal mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD 36</td>
<td>692059014</td>
<td>36</td>
</tr>
</tbody>
</table>

- **Adapter to work on two axis**

<table>
<thead>
<tr>
<th>Adapter</th>
<th>Code</th>
<th>Ø internal mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD 36/2AX</td>
<td>692059015</td>
<td>36</td>
</tr>
</tbody>
</table>

For adapters with different diameter, please contact Fiam Technical Consultancy Service.
This balancing arm can be used with screwdrivers (air and electric), drills, tappers, riveting machines, etc. with diameters varying from 25 to 50 mm and with a maximum of 15 Nm tightening torque. This system guarantees extreme working precision because the tool is kept perfectly perpendicular to the piece being assembled; therefore it avoids any accidental damages to the materials for a higher quality of the assembled product.

The BA50 balancing arm with standard springs can support from 0,7 to 2,25 kg weight; if it is necessary to fit a heavier tool (weighing up to a maximum of 4.5 Kg.) special reinforced springs are available upon request.

### Model | Code
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BA balancing arm | 692031008

Technical features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. work range</td>
<td>1000 mm</td>
</tr>
<tr>
<td>Min. work range</td>
<td>600 mm</td>
</tr>
<tr>
<td>Max. torque</td>
<td>50 Nm</td>
</tr>
<tr>
<td>Max. load (with standard springs)</td>
<td>2,25 kg</td>
</tr>
<tr>
<td>Max. load (with reinforced springs)</td>
<td>4,5 kg</td>
</tr>
<tr>
<td>Max. rotation angle</td>
<td>360°</td>
</tr>
<tr>
<td>Ø max. tool</td>
<td>50 mm</td>
</tr>
</tbody>
</table>

### Accessories available upon request

- To support tools of up to 4,5 Kg. max. it is necessary to order 2 reinforced springs (cod. 692059022)

For balancing arm that must support torque of more than 50 Nm or weights of more than 4.5 Kg., please contact Fiam Technical Consultancy Service.
BC 25 cartesian arms ensure extremely high precision operation because the tool is held perpendicular to the piece being worked on. Cartesian arms are characterised by extreme flexibility and practicality of use: besides extension over its entire height, the rotational extent of the arm on the abscissa allows up to 180° permitting a wide operating area.

Designed to house tools with a maximum diameter of 46 mm, they are equipped with a balancer and an adapter and can be used with a comfortable handgrip to hold the tool. Finally, they offer the possibility of using different compressed air inlets depending on how the workstations are arranged.

Various adapters are available on request allowing horizontal operation, or simultaneous operation on two axes.

For further information, contact the Fiam Technical Consultancy Service.

<table>
<thead>
<tr>
<th>Technical features</th>
<th>Model</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. working radius 710 mm</td>
<td>BC 25/2</td>
<td>692031016</td>
</tr>
<tr>
<td>Min. working radius 225,5 mm</td>
<td>BC 25/4</td>
<td>692031017</td>
</tr>
<tr>
<td>Max. torque 25 Nm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. load 2 - 4 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. angle of rotation 180°</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. tool diameter 46 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical stroke 660 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horizontal stroke 314 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. height 1235 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. width 770 mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Adapters for working in various axis

Standard equipment (supplied with the arm)
- Balancer
- Handgrip
- Adapter for vertical operation
- Instructions for assembly and use
- Eco-friendly packaging

Accessories available upon request
- Adapters for working in various axis
- BC 25/4 arms with omnidirectional coupling (cod. 692031018): to make easier the tightening operations with AF angle nutrunners with flat head drive. This agile and flexible device actually allows the tool to be rotated freely around its axis while also allowing its X-axis (horizontal plane) to move by +/- 15°.

Cartesian arm for weights over 4 Kg. please contact Fiam Technical Consultancy Service.
ERGONOMIC NOTE

These new efficacious mechanical devices permit operations requiring the use of screwdrivers, tappers and drills to be ergonomic thus significantly reducing operator effort since:

- 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.
The Fiam “selfworker” Cartesian arm guarantees improved general safety for tightening activities, better working conditions for the operator and a high quality finished product.

**Productivity**
- The arm contributes towards greater productivity thanks to quicker, more practical and above all, safer tightening operations.
- Thanks to the thrust device which avoids bit jolting, damages to the elements to be tightened and to the screw heads are prevented resulting in better finished product quality and savings in bit wearing.

**Safety**
The machine design, with CE mark, was obtained by adopting a large number of safety features that make this arm unique and among the most competitive on the market.

**Use**
- On self-threading, self-tapping, and three-lobe screws, and anywhere strong thrust intervention is required by the operator
- With straight manual screwdrivers, whether produced by Fiam or not (between 2 and 4 Kg weight) with lever start set to pick up pneumatic signal
- With Fiam NCA autofeed screwdrivers with lever start set to pick up pneumatic signal

**Wide working area**
- Horizontal stroke: up to 314 mm
- Vertical stroke: up to 660 mm
- Max. rotation angle: up to 180°

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**Technical features**
- Max. working radius: 710 mm
- Min. working radius: 225.5 mm
- Max. torque: 25 Nm
- Max. load: 2 - 4 kg
- Max. angle of rotation: 180°
- Max. tool diameter: 46 mm
- Vertical stroke: 660 mm
- Horizontal stroke: 314 mm
- Max. height: 1235 mm
- Max. width: 770 mm
- Weight (tool not included): 11 Kg
- Max. thrust at 5 bar: 14 Kg
- Max. thrust at 6 bar: 17 Kg

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**Ergonomic Note**
It permits more ergonomic working positions during assembly jobs thus reducing muscular-skeletal pathologies in operators’ hands and arms due to:
- Drastically reducing vibration effects
- Eliminating torque reaction on operator’s hand
- Maintaining correct wrist position
- Making it necessary to distribute the work load on both hands
- Eliminating the force required to support the tool
- Performing automatic pneumatic thrust on the workpiece, so that the operator does not need to exercise strong force during fastening operations (‘selfworker’ device)
- Guaranteeing maximum operator safety for all operations

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**Cartesian arm for tools weighing more than 4 Kg:** Please contact *Fiam Technical Consultancy Service*
**Bimanual operate pneumatic logic system**
It acts on the push cylinder feeding device when the two pneumatic signals arrive at the same time from the start levers.

**“Selfworker” air thrust device**
The system prevents the screwdriver from jumping on the bit and screw head, preserving components and workpiece surface.

The NCA autofeed screwdriver version, has a stroke of 80 mm.

The manual screwdriver version, has a stroke of 50 mm.

**“Selfworker” air thrust device**
Thrust capacity equal to 17 kg at 6 Bar (intended as power supply to the pneumatic cylinder).
After tightening has been performed, just release the lever and the thrust device returns to its original position.

**Robust structure**
Additional reinforcement plate.

**Balancer provided**
Necessary to support the tool and other hanging elements.

**Pressure regulator**
Allows thrust capacity adjustment up to 17 Kg (available on request).

**Fast air exhaust valve**
Permits to exploit completely the pneumatic cylinder stroke.

**Safety shut-off system**
Whenever the air supply is shut off, the system stops automatically in order to prevent sliding of the thrust device and all risks of crushing and/or accidental movement.

**Start-up system**
The thrust device can be started only with the simultaneous use of two levers: the one on the auxiliary grip and the one on the tool. This measure absolutely eliminates the risk of crushing hands or fingers.

**Safe and compact auxiliary handgrip**
Auxiliary handgrip protection structure expressly designed to prevent the two start-up levers from being started with one hand only. The grip can be positioned on the right or left for lefthanded operators.

**For lever start screwdrivers**
Intended exclusively for screwdrivers lever start (Ø 46 mm) with pneumatic pick-up signal.