Air motors: solutions for every sector.

- Learn about all the advantages of air-powered technology
- Is Fiam your future Partner? Reasons to choose us
- Case history for each sector
The advantages of the air motor

- Compact and light
- Rugged
- Suitable for sterilizing
- Cost effective
- Heat resistant
- Resistant to humidity and drops of water
- Simple, low maintenance
- Suitable for frequent Starting and Stopping

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Reasons to choose us as your Partner

**Range**

- Over 1000 off-the-shelf catalogue items to choose from
- One million machines built and operating around the globe, and more than 70 years’ experience
- 100% designed and made in Italy
- Solutions tested and inspected by our in-house certified laboratories
- Use of environmentally compatible packaging, with specific packaging made to order

**Service**

- Co-engineering: Fiam can simulate the motor’s integration into the target application
- Ample scope for customizing the motor, even for small runs
- Special area for producing small runs and prototyping
- Distributors located all over the world, which helps when it comes to managing maintenance work and getting original spare parts quickly and at controlled prices
- Extremely flexible organizational structure to cater to different requirements: design/prototyping/customized deliveries/customized packaging/installation/maintenance plans, etc.

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Target sectors

Can’t see your industry listed? Write to us! We can work with you to address your needs.

- Manual tools
- Food
- Medical
- Machining
- Packaging
- Paper industry
- Construction
- Textile

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Case history for each sector

Vicenza - Italy
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Manual tools

Features of motors for this sector:

- Custom design to build the motor into the tool.
- **Special galvanic treatment** on inner workings to increase **corrosion resistance** where the use of lubricated compressed air is not an option.
- Power range: **120 to 800 W**
  - No-load speed: **from 1,000 to 12,000 rpm**
  - Torque values: **from 0.7 to 50 Nm**

**Case study**

Manufacture of **pneumatic strapping tools**, where the motors incorporated into the tool have to be:
- air-powered, to enable them to work even in places affected by electromagnetic interference
- designed with customized and extremely compact geometries to fit inside the tool and its various versions
- made from light yet strong materials to ensure ergonomically correct use.

**Our solution**

Fully customized 200W motors: the high rpm demanded by the application entailed painstaking design of suitable gearing to be inserted in motors with very tight spaces.

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Features of motors for this sector:

- Option of external parts made from plastic.
- **Stainless steel** construction assembled with Domsel double-lip seals and featuring special sealants between the threaded connections. To ensure a high degree of protection from external factors.
- **Special galvanic treatment** on inner workings to increase corrosion resistance where the use of lubricated compressed air is not an option.
- Power range: **150 to 800 W**
  - No-load speed: **from 40 to 15,000 rpm**
  - Torque values: **from 1 to 50 Nm**

**Case study**

Manufacture of **sausage casing clippers** using air motors that have to be:
- built to fully withstand frequent machine washing with water and detergents;
- suitable for contact with food;
- stainless steel to deliver a high level of hygiene.

**Our solution**

Stainless steel water-resistant 150W motor. Guaranteed to meet the highest standards of hygiene for food contact in accordance with current regulations.

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Case history for each sector
Medical

Features of motors for this sector:

**Stainless steel** construction assembled with Domsel double-lip seals and featuring special sealants between the threaded connections. To ensure a high degree of protection from external factors.

**Special galvanic treatment** on inner workings to increase **corrosion resistance** where the use of lubricated compressed air is not an option.

Power range: **150 to 800 W**
No-load speed: **from 40 to 15,000 rpm**
Torque values: **from 1 to 90 Nm**

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**Case study**

Manufacture of autoclaves for sterilizing hospital instruments. The machine’s door opening and closing motors have to be:
- heat resistant (130°C)
- resistant to high humidity
- suitable for frequent operating cycles.

**Our solution**

28M-series motors, with a power rating of 280 W, made from stainless steel for water and heat resistance. The motors undergo a special galvanic treatment applied to the inner workings, improving corrosion resistance for use in the absence of lubricated air.

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**Learn about all the advantages of air-powered technology**

**Is Fiam your future Partner? Reasons to choose us**

**Case history** for each sector
Machining

Features of motors for this sector:

- Compact motors, built from high-strength steel and with manual starting devices.

- Power range: 150 to 800 W
- No-load speed: from 40 to 15,000 rpm
- Torque values: from 1 to 50 Nm

Our solution

Motors with power ranging from 300 to 600 W, made to suit the size of the machines they are due to be fitted inside. Designed with housings featuring a manual start lever. Inner workings to suit the different torque/speed ratios required.

Case study

Manufacture of machining arms incorporating motors designed to handle various different machining processes, including tapping. Motors have to:
- be able to handle high torque levels
- feature great power and strength, making them suitable for heavy-duty work
- have a grip for manual lever starting.

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Features of motors for this sector:

**Stainless steel** construction assembled with Domsel double-lip seals and featuring special sealants between the threaded connections. To ensure a high degree of protection from external factors.

**Special galvanic treatment** on inner workings to increase corrosion resistance where the use of lubricated compressed air is not an option.

Power range: **150 to 800 W**  
No-load speed: **from 40 to 15,000 rpm**  
Torque values: **from 1 to 50 Nm**

**Case study**

Manufacture of **liquid filling and bottling machines and lines**, where the process of screwing on the container caps is performed by motors required to have the following features:

- no electricity, which is essential when bottling flammable substances
- resistance to corrosive liquids, such as sulphuric acids and ammonia
- produced with output shaft customized to suit the accessory used to screw on the cap.

**Our solution**

15-, 20- and 28M-series motors with power ranging from 150 to 300 W, made with special seals capable of withstanding the most corrosive liquids. On request - and where suitably customized - they can be produced with a high protection rating; the motor is designed with a smooth output shaft for using any number of necessary accessories. The capping stage is performed by exploiting the air motor's natural stall condition.

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Case history for each sector
Paper industry

Features of motors for this sector:

A key, essential requirement is the absence of electricity as a power source to prevent the risk of fire. ATEX certification on request.

Special galvanic treatment on inner workings to increase corrosion resistance where the use of lubricated compressed air is not an option.

Power range: 150 to 800 W
No-load speed: from 40 to 15,000 rpm
Torque values: from 1 to 90 Nm

Case study

Manufacture of paper-making machinery incorporating air motors required to drive the cleaning rollers whose job is to remove ink: the motors are required to have the following features:

- compressed air supply as electric motors heat up, increasing the risk factors for manufacturing environments (such as the hazard constituted by electric cables)
- must drive heavy rollers and cope with particularly heavy-duty work given the repeated starting and stopping over the course of various work shifts
- different sizes to suit the different rollers to be driven, which are often small.

Our solution

28M motors, with a power rating of 280 W, designed with plenty of scope for customizing in terms of size, with a great ability to withstand locked-rotor torque to provide continuous service when starting under load, and suitable for frequent use in start and stop mode.

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Features of motors for this sector:

- Plenty of scope for customizing in terms of size.
- Compact motors with lever start, made from high-strength steel.
- Special galvanic treatment on inner workings to increase corrosion resistance where the use of lubricated compressed air is not an option.
- Power range: 150 to 800 W
  No-load speed: from 40 to 15,000 rpm
  Torque values: from 1 to 90 Nm

Case study

Manufacture of power floats and equipment for finishing concrete panels. The air motor is to be applied to a float for smoothing concrete on building sites. The motor has to be:
- Rugged and able to withstand frequent stress, such as repeated starts
- Impact resistant
- Able to handle water, dust and residues.

Our solution

MO motor, with power ranging from 600 to 800 W, featuring custom-designed geometries to fit into the customer’s floats. The seals required special attention to ensure the inner workings were protected from dust and external factors.

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Features of motors for this sector:

- Plenty of scope for **customizing in terms of size**.
- A key, essential requirement is the absence of electricity as a power source to prevent the risk of fire. **ATEX certification on request**.
- Special **galvanic treatment** on inner workings to increase **corrosion resistance** where the use of lubricated compressed air is not an option.
- Power range: **150 to 800 W**
  - No-load speed: **from 40 to 15,000 rpm**
  - Torque values: **from 1 to 90 Nm**

**Case study**

Manufacture of **fabric finishing machinery** with high-speed motors built in to drive a fan used in processing the fabric. The motors to be built in have to:
- work in high moisture conditions as the fabric to be prepared is still in its raw state
- meet safety conditions in wet areas (electric motors and relevant cables constitute a hazard for wet manufacturing environments)
- must drive heavy rollers and cope with particularly heavy-duty work given the repeated starting and stopping over the course of various work shifts.

**Our solution**

Rugged 15-, 20- and 28M-series motors with power ranging from 150 to 300 W. The motors provide a high rpm and have a great ability to withstand locked-rotor torque to provide continuous service when starting under load.

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