

# AIR CONTROLS

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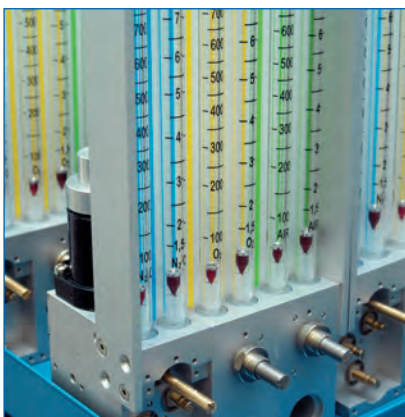
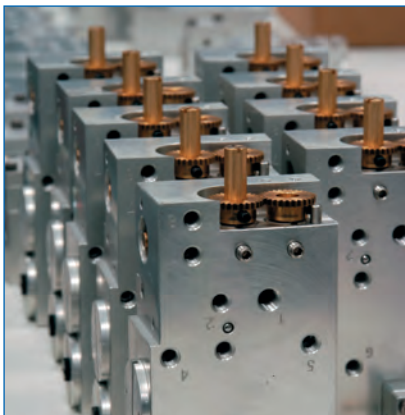
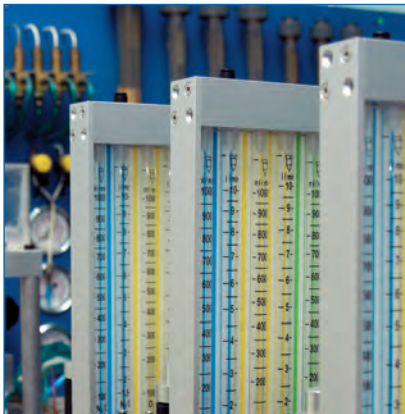


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**Innovative Pneumatic Control Circuits  
for Medical Applications**



# About us



AC Aircontrols GmbH was founded in 2002 to support the medical industry as a provider of design and manufacturing services of innovative pneumatic control circuits used in medical applications, especially in anesthesia and ventilation systems. The company's specialized mission is supported by a unique skill set embodied by its employees and management who, in the aggregate, represent many years of experience in the fields of pneumatic controls and the design of miniature pneumatic circuits for use in medical and industrial applications. This unique talent, found under one roof, is complemented with capabilities in project management, prototype development, and manufacturing logistics.

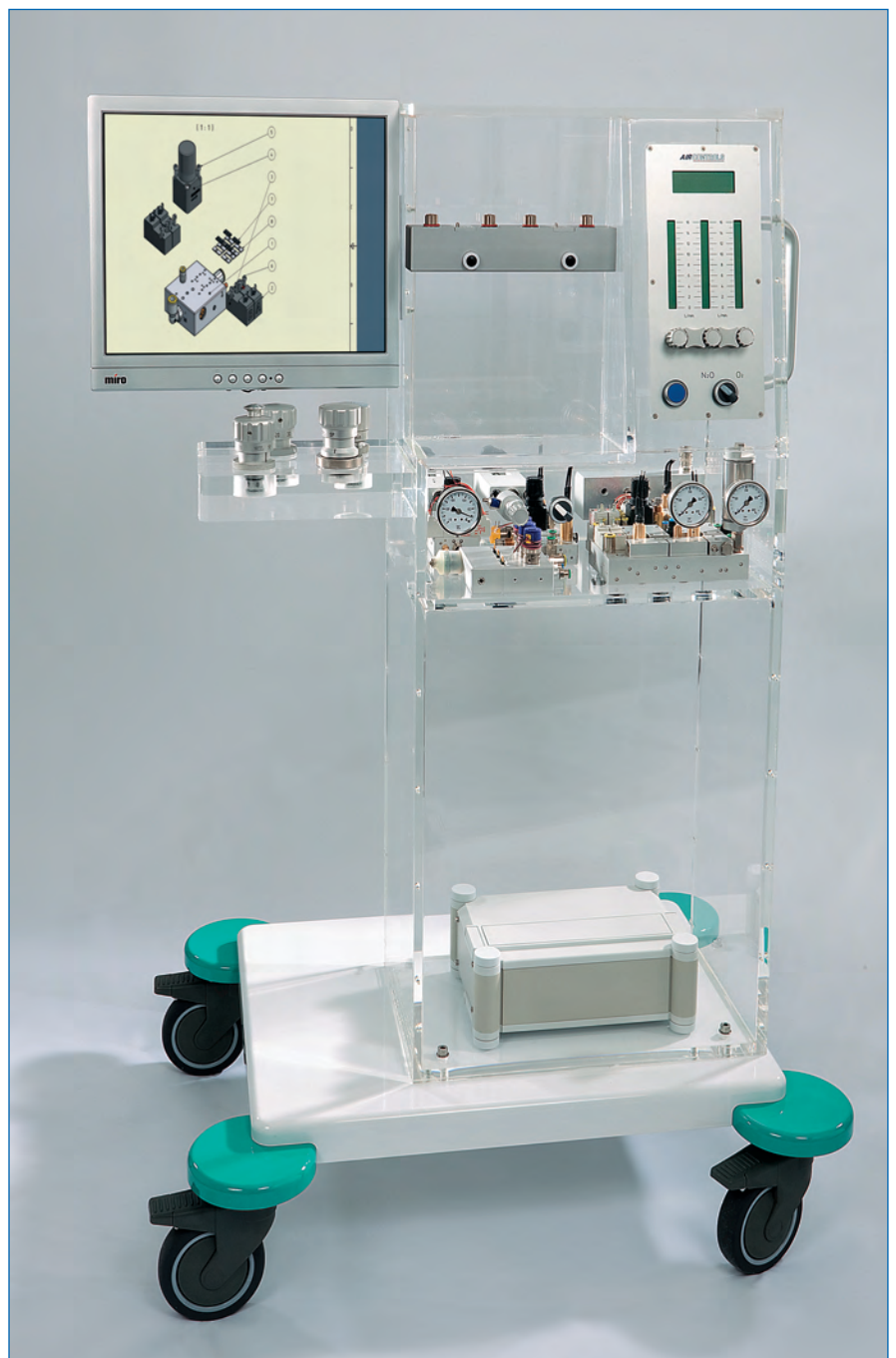
AC Aircontrols leads the field in the development and production of manual and electronically regulated control systems for anesthesia ventilators, anesthesia gas delivery, and emergency ventilators. The company has unmatched expertise in the design of highly integrated, yet compact, pneumatic circuits and controllers, which can also embody electronic sensors and electro-pneumatic actuators. In addition, AC Aircontrols is also highly experienced in creating custom designs of specialized pneumatic components such as APL valves, gas drivers, and integrating pneumatic functions and circuits into compact manifolds.

AC Aircontrols is proud of its close and attentive working relationships with its customers. This interactive process starts with the development of design specifications based on the

customer's requirements, and continues with AC Aircontrols' Quality Management System which supports the design and manufacturing process. The company adheres to the ISO and ASTM standards, and is GMP compliant. AC Aircontrols' comprehensive services include a state-of-the-art CAD system which can import and export to all standard file system and render 2D and 3D views. In-house facilities are available for prototype fabrication and testing. Finished units can be manufactured by the company in an ISO-certified environment, and logistically supported by a committed family of regional suppliers. Design and manufacturing are controlled by the company's Quality Management System.

AC Aircontrols is your ideal partner as a design and manufacturing resource to develop your medical product's pneumatic control modules and special components, and intends to achieve this goal by earning your trust and confidence.

## Key OEM components for life supporting devices



**Custom Engineering**  
**OEM Component Design**  
**Prototype Development**  
**Verification & Validation**  
**ISO-Certified Manufacturing**



# Pneumatic controlled circuits for anesthesia systems



Freshgas Dosing Module



Electronic Freshgas Dosing Module

The following examples illustrate AC Aircontrols areas of expertise when applied to the design of pneumatic control modules and components for anesthesia system applications.

The traditional *Freshgas Dosing Module* with integrated flowmeters and ratio system is a compact assembly, modular in nature, comprised of a multigas, precision flowmeter bank, precision control valves, and a ratio controller, which is required when oxygen and nitrous oxide are used together.



Supply Gas Control Module



Anesthesia Ventilator Control Module

The *Electronic Freshgas Dosing Module* achieves precision multigas freshgas under computer control without the sacrifice of long term reliability.



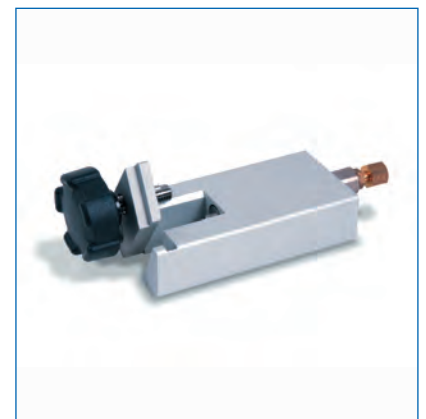
Impressive in its sophistication and reliability achieved in a compact form-factor, the *Supply Gas Control Module* is the interface to the high pressure input gases (Oxygen, Nitrous Oxide, Air) from the hospital pipeline circuits and reserve cylinder connections, switching from one to the other when necessary.

Electronic sensors are integrated in the module to provide operational feedback to a system's onboard computer. Likewise, the *Anesthesia Ventilator Control Module* provides complete precision control and sensing capability for a bellows-type ventilator.

Other examples include custom designs of components such as *APL Valves*, *Pin Index Yokes* for reserve cylinders, and *Vaporizer Manifolds*.



APL Valves



Pin Index Yoke



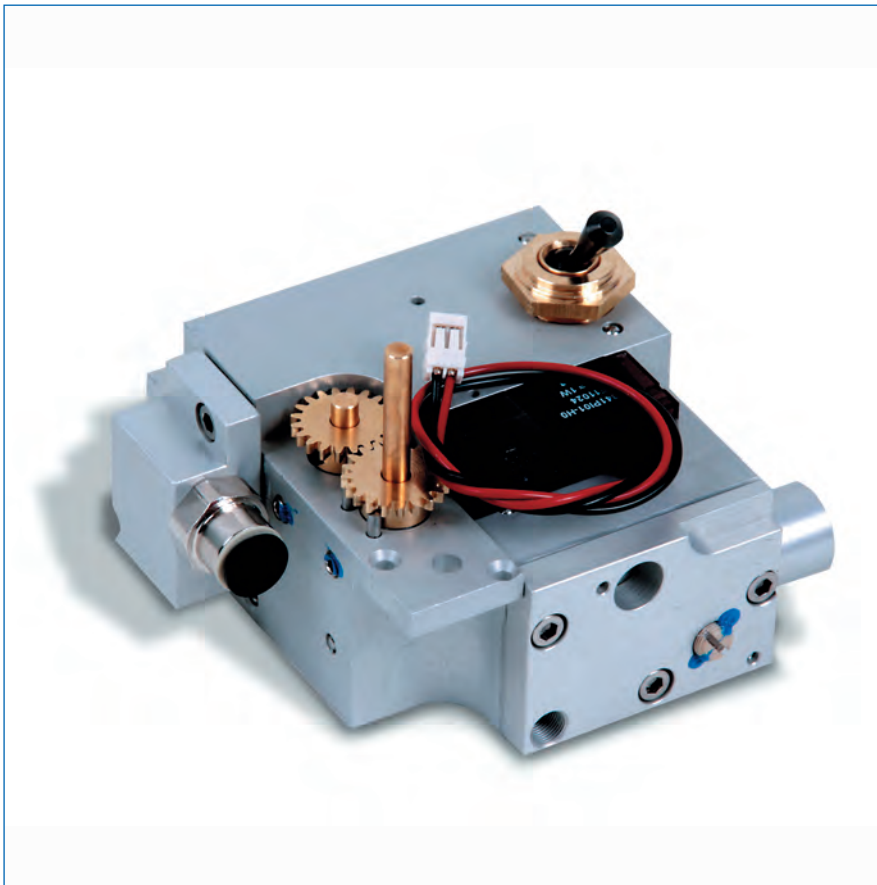
Drive Gas Module



Vaporizer Manifold

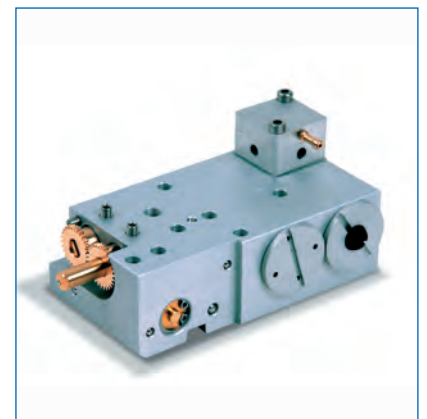


# Pneumatic controlled circuits for emergency ventilators



AC Aircontrols' technical and application expertise extend into areas such as emergency ventilator controls. Examples shown include both an *Electronically Controlled Emergency Ventilator Control Module* and a *Pneumatic Emergency Ventilator Control Module* – sophisticated yet compact in their implementation.

These are just a few examples of the many successful projects completed by the company.



Pneumatic Emergency Ventilator Control Module

Electronically Controlled Emergency Ventilator Control Module

## Pneumatic controlled circuits for surgical instruments



AC Aircontrols can design your pneumatically driven surgical instrument to comply with your stringent requirements.

The Bone punch, shown in the photograph, designed by AC Aircontrols, is comfortable to use and is a highly reliable instrument.



Pneumatic Drive



Bone Punch



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