AIRPISTON

The AIRPISTON piston pumps family addresses the problems inherent to dosing products with high viscosity up to 1.000.000 cPs.
These pumps are **made combining synthetic material for the body with stainless steel AISI 316** for most of the wet parts.
AIRPISTON range, complies with **the requirement of ATEX** Class 3: Zone 2 (Serie II 3/3GD IIB T 135°C)
AIRPISTON pumps are offered in inline or submerged version:

- **In line pumps,** meant for "pass through" installation with suction pipe and delivery pipe connected to the system.
- **Submerged pumps,** with casing submerged in the liquid and delivery pipe connected to the system.

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MAIN APPLICATIONS

- **Mechanics: Lubricants and lubro-refrigerants**
- **Energy: Gas odorization**
- **Ecology: Coagulant, flocculent, deodorization**
- **Surface Treatment: Colorant liquids, varnish**
- **Cosmetics: Essences, pastes, lotions, soaps, shampoos**
- **Textile: Basic resins preparation and mix of addictive.**

AIRPISTON

Both versions share the pneumatic motor which is the most sophisticate and important part of the device and is responsible for:

- **Actuate the piston to the required stroke length;** adjustable by ergonomic handle command from 0 to 100%
- **control the piston speed** movement as well as the frequency drive **from a minimum of 3 pumping per minute to 100 pumping per minute;**
- regulate one of the two lengths without affecting the other (frequency/cycles);
- **accept external inputs** to execute single stroke dosing or **batch dosing;**
- generate outputs to **command external devices f**or a total dosing control.

Motor is provided with control connexion.
Addition of add external pneumatic devices (e.s. pilot-operated valve), does not require additional piping.

APL IN-LINE PUMPS - HIGH VISCOSITY

APL pumps operate with viscosity up to **1.000.000 cPs.**
The volume of liquid delivered by each single pump stroke and its **frequency per minute** are controlled.
The pump **generates a signal** at the end of the **dosing cycle** as integrated characteristic.
The frequency is controlled by **pneumatically operated unstable oscillator** or external pneumatic or electric devices **(remote control),**

APL

APS S UBMERGED PUMPS - VERY HIGH VISCOSITY

This version is deployed to pump liquids of high-level of viscosity.
The casing is immersed in the fluid to minimise risks of cavitation and consequent erosion and premature wear of parts which is the main cause of failure of pumps to address this service
Il gruppo pompante è di costruzione ingegnosamente semplice e composto di pochissimi particolari:

- Corpo pompante con valvola di aspirazione integrata.
- Pistone pompante con valvola di mandata integrata.
- Tenuta sul pistone pompante.
- 2 sfere facenti parte delle valvole.

Il pistone si muove tramite uno stelo metallico azionato dal motore pneumatico. Per collegare la pompa alla motorizzazione è presente una tubazione metallica (o sintetica) con la doppia funzionalità di collegamento meccanico e idraulico.
Su richiesta è possibile personalizzare la profondità d'immersione della pompa.

APS

ACL

POMPE BASE AUSILIARIE DOSATRICI "IN LINEA" O "IMMERSE" PER FLUIDI AD ALTA ED ALTISSIMA VISCOSITÀ (ABL-ABS-ACL)

Pompe dosatrici ausiliarie con **regolazione del volume del liquido integrata e comando per il dosaggio da unità esterna.**

ABL-ABS- Realizzate in due tipologie, ovvero ABL **"IN LINEA"** oppure ABS **"IMMERSE"**.

ACL- The ACL realised **"in-line"** are ideal for dosing high-viscosity fluids (<3000 cPs). Control devices can be assembled on to the ACL pump on pre set positions thanks to its parallelepiped shape.
Liquid connections can be oriented in many positions.

All the BASE pumps models are in fact dosing pumps that can regulate the dosed fluid volume.
Though, they are not equipped with an autonomous control as the dosing command is provided by an external unit (on ACL model, a working frequency control can be added for example).
Pumps can be deployed in batteries (of 2 or more units) and a be run simultaneously with single command.

ABS

ACL

COMMAND DEVICES

- "Master" APS or APL piston dosing pumps
- Frequency generator with pneumatic output
- Transducer with pneumatic output operated by the system cycle (where the pump is installed).

In **CDS system,** pumps have a flow rate equal or inferior to the master pump's one.

CDS COMBINED DOSING SYSTEM

Smartly combines one main Master dosing pump with one Slave minor dosing pump to deliver a single modular device to precisely mix two products of different physical characteristics.
It is a standard feature of MASTER main pump models APL and APS 2.

SPECIFIC APPLICATIONS:
MECHANICS:
Lubro-refrigerants dosing
Automatic refill with lubro-refrigerants
ECOLOGY AND ENVIRONMENT:
Dilution and dosage of flocculent liquids, dilution and dosage of deodorizers.

Requires the addition of of static auto-lube system **SMX** if the products have various viscosity.

SMX STATIC BLENDER

These device is built in 2 lengths and is used for blending two products with different physical characteristics to obtain one homogeneous compound.
The cylindrical construction made with synthetic materials encases the calibrated internal casing of the blending element.
The two outputs are equipped with non return valves.

ACCESSORIES SHARED BY ALL AIRPISTON

AIRPISTON pumps share a list of accessories to match different scenarios and satisfy different requirements:

- External timer (to set time lapse between dosing cycles from 0 to many minutes).
- Cycle counter (pre-settable).
- Cycle counter (to actuate dosing batch).
- Solenoid valve (for remote electric command).
- Transducer (to convert the “end of cycle” signal from pneumatic to electric).
- Static blender (to instantly dose and blend dose products).
- Combined Dosing system kit consisting of: APL pump support, SMX static blender, water main supply adaptor, ABS pumps connexions.

AIRPISTON DOSING PUMPS MAIN CHARACTERISTICS

MODEL	FLOW RATE l/h min-max	MAX volume per cycle in CC	MAX frequency (cycle per min')	MAX delivery pressure (bar)
ABL/ABS/ACL 1	0,003 - 1	0,18	100	30
ABL/ABS /ACL 4,5	0,013 – 4,5	0,75	100	30
ABL/ABS/ACL 12 APL/APS 12	0,036 - 12	2	100	30
ABL/ABS 27 APL/APS 27	0,08 - 27	4,5	100	30
ABL/ABS 54 APL/APS 54	0,16 - 54	9	100	30
ABL/ABS 75 APL/APS 75	0,22 - 75	12,5	100	30
ABL/ABS 120 APL/APS 120	0,36 - 120	20	100	30
APL/APS 160	0,80 - 160	45	60	16
APL/APS 320	1,60 - 320	90	60	16
APL/APS 450	2,20 - 450	125	60	16

ADJUSTABLE CYCLE VOLUME: from 10 to 100%
ADJUSTABLE FREQUENCY: from 3 to 60/100 CYCLE per MIN'
PRESSIONE DI ALIMENTAZIONE: from 2 to 8 BAR

MATERIALS: MAIN CONFIGURATIONS (Custom layouts available on request).

VERSION	CASING	PUMPING PISTON	GASKET	DRUM/STEM
DL S N DL S D	POMc	AISI 316	NBR EPDM	AISI 316
WW U D WW U T	PP	CER	EPDM PTFE	PP/AISI 316
DF C V DF C T	PVDF	CER	FPM PTFE	PVDF/AISI 316
AL S V AL S T	ALU	AISI 316	FPM PTFE	AISI 316
SS S D SS S T	AISI 316	AISI 316	EPDM PTFE	AISI 316

WELL PUMPS
AIRDRAIN

AIRDRAIN series was designed to operate in wells. The main applications are reclaimed areas drainage, ground level control, supernatant and percolate from municipal solid waste collecting areas.
AIRDRAIN is composed of 4 models with different operating system:

- **SD** STATIC DRAIN
- **ASD** AUTOMATIC STATIC DRAIN
- **ADD** AUTOMATIC DIAPHRAGM DRAIN
- **ABD** AUTOMATIC BELLOW DRAIN

SD - STATIC DRAIN It is the most reliable pump of AIRDRAIN series. The pump casing consisting of a hollow vessel is fitted with one intake and one evacuation liquid valves. An airline a connects the pump casing with the pneumatic operating control unit located at the top of the well. Once submerged, the pump casing is flooded till filled up through the intake valve because of the liquid's hydrostatic pressure and the air contained inside is displaced through the airline connected to the control unit.

ASD - AUTOMATIC STATIC DRAIN It is similar in operating principle to SD pumps. ADS differ from SD pumps for an SD pumps do not require the external pneumatic operating control unit. The replenishment and the evacuation phases of the SD pumps are controlled by its internal air compressor control device assisted by a floating probe to detect the liquid level. ADS pumps evacuate exhausted air through a dedicated pipe. ADS pumps do not need the bathymetric probe to monitor the level of the liquid pumped for the function is delivered by the mentioned floating probe. SD and ASD pump comply with the requirement of ATEX Class 3.

ADD - AUTOMATIC DIAPHRAGM DRAIN These automatic pumps do not require external controls. ADD model delivers the pumping effect by a flexible diaphragm coupled to suction and delivery valves. It can be supplied with liquid level detection to stop once the liquid is missing. The pump does not fail if run dry. This design is advantageous for the pump that can operate properly till the liquid is completely run out even if the pump is not entirely submerged. As an additional bonus, these pumps are extremely short which reduces the risk for the pump to be abandoned inside the well if it deforms.

ABD - AUTOMATIC BELLOW DRAIN It is similar to ADD with the difference that the element responsible for delivering the liquid flow is not a flexible diaphragm but a bellow. Thanks to the reduced diameter of the bellow and the diameter of the diaphragm, the ABD pumps are compacter than ADD pumps hence easier to install into minor-size wells.

ADD and ABD pumps are special for they comply with the requirement of ATEX Class 2: zone 1, as such pumps can be safely operated into wells and ideal for extracting percolate from municipal solid waste collecting areas with biogas presence and consequent risk of explosion.

Options for all AIRDRAIN Pumps:
- Installation kit for wells (pressure reducer, suspension cable, air compressed and liquid pipes).
- Lamellar filter on the intake.
- Level control probe for liquid collection tanks, with min. max.
- Only for SD pumps: level control bathymetric probe
- Only for ADD and ABD pumps: level control device