

# IG-01

EXTINGUISHING  
USING  
INERT  
AGENTS

WITH CONSTANT  
PRESSURE VALVES



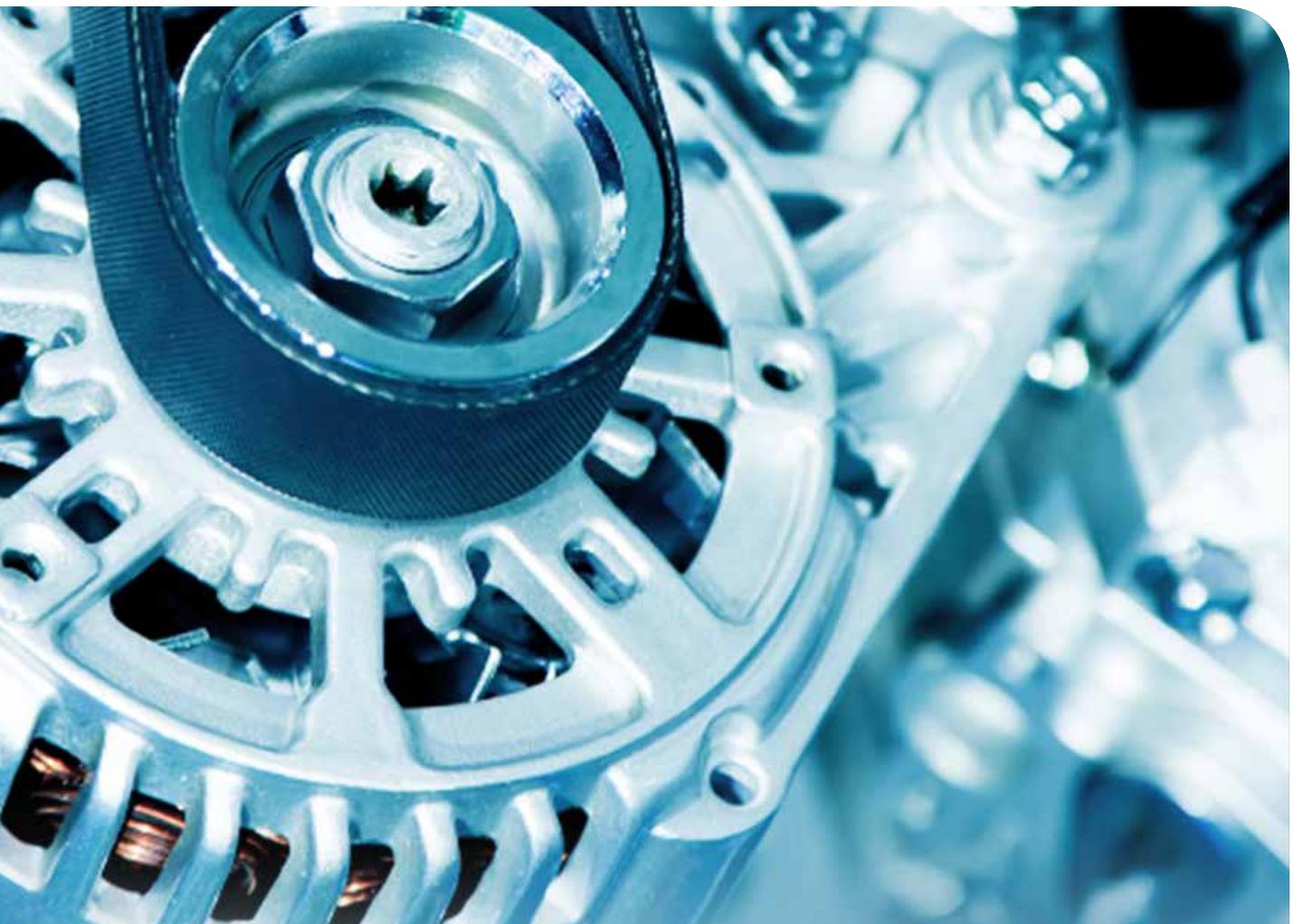
RG SYSTEMS™ GREEN FLOW – IG-01 (Ar) at 2900 & 4350 PSI (200 & 300 BAR) –  
CONSTANT & CONTROLLED FLOW TECHNOLOGY – COMBI MANIFOLD SYSTEMS (CMS)

# THE MOST DEMANDING AND SENSITIVE PROTECTION

Nowadays the venues protected against fire have goods with high added value kept in them, which is mainly due the cost of the objects and, increasingly, in the role they have or the contents have. Thus, damage to critical equipment can lead to disruption, delays, loss of data, legal problems and, in short, difficulties and obstacles causing a cessation of activity.

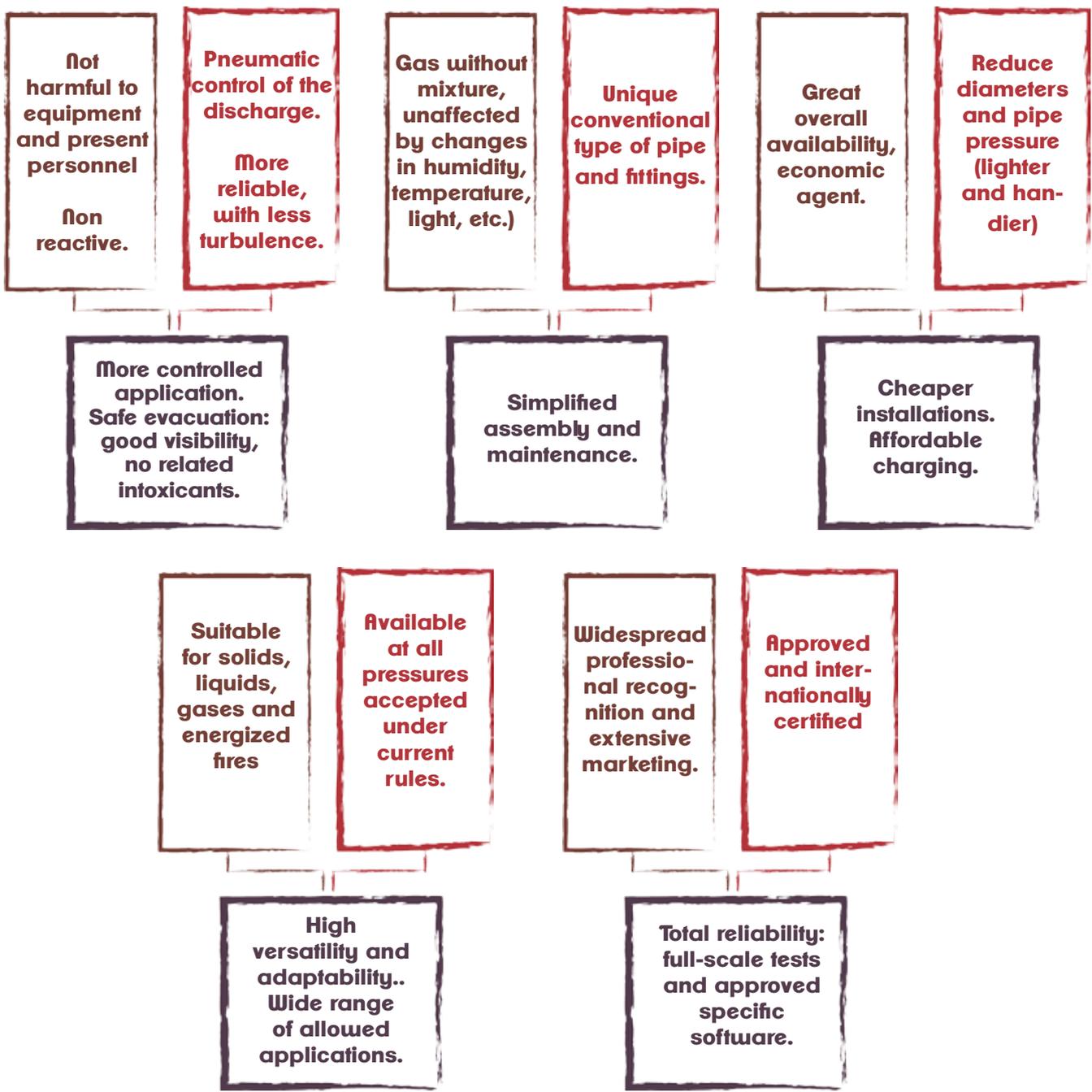
The RG SYSTEMS™ GREEN FLOW – IG-01 (Ar) at 2900 & 4350 PSI (200 & 300 BAR) – CONSTANT & CONTROLLED FLOW TECHNOLOGY – COMBI MANIFOLD SYSTEMS (CMS) neutralizes the source of fire but also does it quickly, without letting the appliances, machinery, staff, furniture or structure being damaged.

Argon is, in this sense, very suitable for hazards in sensitive or valuable components, because of its environmental, functional and safety features, at the same time is safe and sensitive towards equipment and atmosphere.



The combined action of the special RG valve, unique in the market due to its pneumatic control coupled with the high efficiency of the inert gas IG-01:

Advantages Gas + Pressure control advantages = RG-Systems GREEN FLOW-01

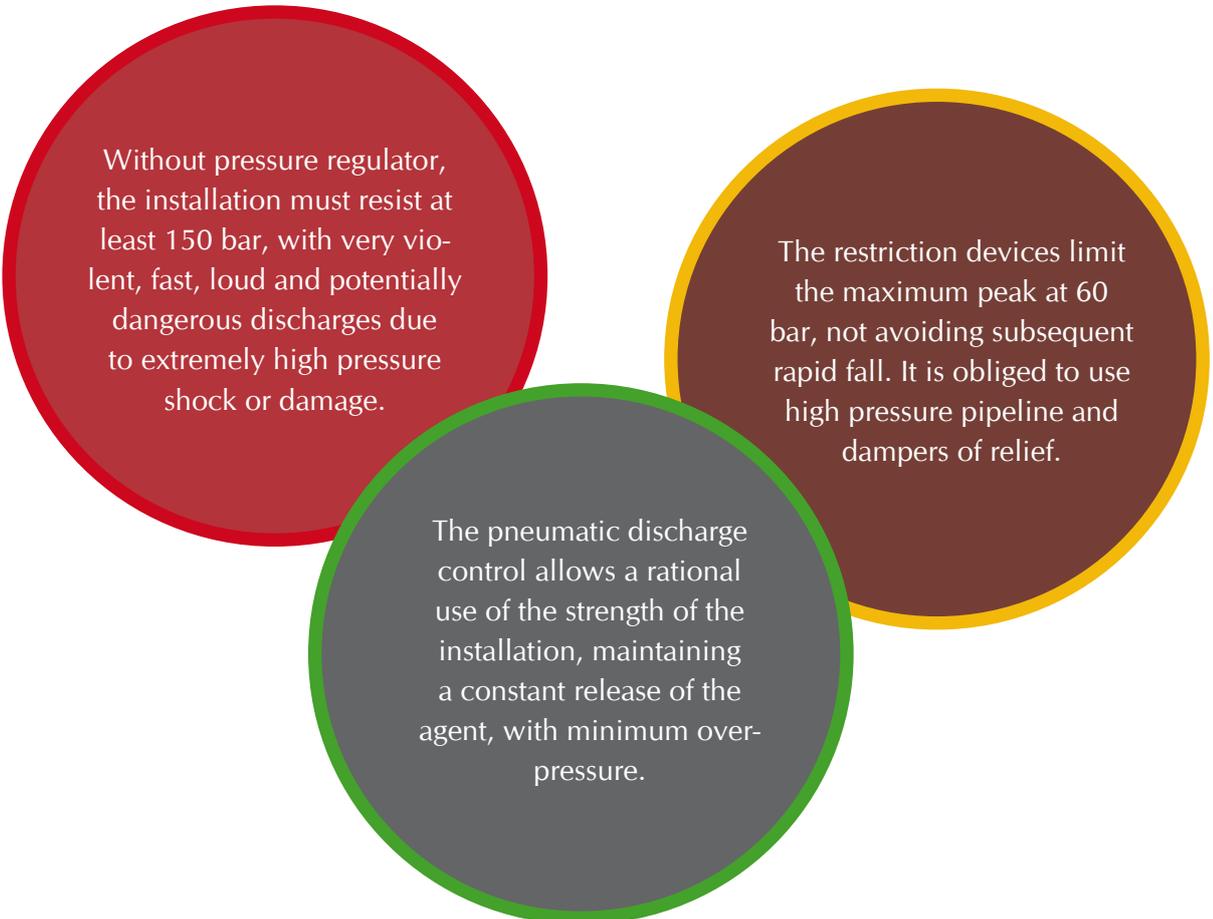


RG SYSTEMS GREEN FLOW:

# TOTAL CONTROL OF DISCHARGE

The reliability and efficacy of teams using IG-01 is indisputable and widely recognized within the PCI sector. Being naturally occurring agents such as gases in the atmosphere, its preparation is simple (distillation of air) and storage is made in solder less cylinder with the gas pressurized up to 150, 200 or 300 bar. Traditionally, the storage pressure is transmitted during unloading heavy and expensive to

very high pressure components (collectors, accessories). Only after the calibrated restrictor, it is reduced to the high pressure (about 60 bar). With advanced technology pneumatic control RGS-MAM-DR valves enable relieving the pressure right from the outlet itself, contributing so that the components, pipes and fittings are lighter, economic, manageable and of a unique kind, simplifying stockpiles and assemblies.



Without pressure regulator, the installation must resist at least 150 bar, with very violent, fast, loud and potentially dangerous discharges due to extremely high pressure shock or damage.

The restriction devices limit the maximum peak at 60 bar, not avoiding subsequent rapid fall. It is obliged to use high pressure pipeline and dampers of relief.

The pneumatic discharge control allows a rational use of the strength of the installation, maintaining a constant release of the agent, with minimum over-pressure.

PRESSURE

150 bar

60 bar



60 seg.

TIME



*PRESSURE PROFILES ILLUSTRATE THE DIFFERENCES IN THE DISCHARGE. THE GAS BEING RELEASED PROPORTIONAL TO THE AREA UNDER EACH GRAPH.*

# ADVANTAGES

RG SYSTEMS valve: the only adjustable product in the market, it adjusts to the outlet pressure required for each project.

## AT THE INSTALLATION:

The global costs are reduced

Smaller diameters and weights: expedites work

Possibility of low pressure pipe

Optimal for replacement of obsolete agents

## DURING THE MAINTENANCE:

It facilitates the tasks and handling

Agent economical and easy to obtain

Without residues immediate resumption after ventilation

Without cleaning jobs.

## IN THE FUTURE:

Totally ecological and effective agent: the definitive solution.

More reliable and durable pneumatic valve than the mechanical devices: less number of errors and better aging.

# APPLICATIONS



ELECTRICAL CABINETS AND SUBSTATIONS

LABORATORIES

RAISED FLOORS AND CEILINGS

HOSPITALS

TELECOMMUNICATIONS

ARCHIVES AND LIBRARIES

MUSEUMS AND ART GALLERIES

CONTROL ROOMS

PETROCHEMICAL INSTALLATIONS

COMPUTER ROOMS

# COMPONENTS

## VALVE

The approved valve model RGS-MAM-RD controls and regulates the discharge at the most appropriate pressure required at each facility. Its pneumatic operation ensures long, reliable life without disruptions, with minimal maintenance and effective working.

It is the safest and most robust in the market, specifically tested to ensure its proper functioning in harsh conditions and after long periods of non use. It's not based upon springs or mechanical procedures of adjustment or may seize over time, so it's completely reliable. It also includes safety devices and pressure control to prevent leakage or accidental shooting.

Exceeds the use of restrictors or other flow control mechanisms - valid but less effective. All required tubing and fittings are of the same type and of smaller diameter, facilitating the assembly work.

## CYLINDERS

They can be configured individually or in batteries, at different storage pressures in order to accommodate the size of the venue to be protected.

They are solder less carbon steel, 40, 67, 80 and 140 L capacity, which can be loaded at 150, 200 or 300 bar in order to optimize the storage space

The pressures of 150 and 200 bar are the most widely used globally and ensure compatibility with the facilities and maintenance or recharging equipment of any country. For the working pressure of 300 bar, the filling density of argon is maximum for each cylinder and as a result the equipment is more compact and economical.



# NOZZLES

Responsible for releasing the extinguishing gas and distribute evenly in the area to be protected, the nozzles are used for complete inundation of the room.

They are placed upright with threaded pipe. They can cover 360 if they are centrally placed in the room for discharges according to a complete sectional circle, either be 180 ° for its separate placement next to wall and discharge in direction contrary the same.

The hydraulic calculation determines its size, ensuring the correct amount of pressure and agent due to calibration of plates and complete study of the installed network. Available sizes range from 3/8 " to 2 ".

Consisting of holes on two levels and total quality control: they are tested to function properly at extreme temperatures between -20 and 600 ° C and pressures of 120% the nominal for storage of cylinders.

They are produced in different materials, according to aesthetic or functional requirements of protection against corrosion, strength, etc., which may be stainless steel, chrome steel, aluminium or brass.

## 7. THE AGENT IG-01, how it acts

A close-up photograph of a metallic nozzle, showing its cylindrical body with several small circular holes along its length, set against a dark background.

The argon gas provides adaptability, environmental friendly and by being unmixed agent brings benefits in recharging and maintenance at any location

Being extinguishing agent it is harmless to humans and suitable for areas occupied in the usual concentrations, since it is neither toxic nor hampers the visibility, allowing safe evacuation of the room and maintaining the concentration of oxygen at adequate levels.

It is a much appreciated ECOLOGICAL agent which neither the ozone layer (ODP) nor does produce greenhouse gas (GWP).

CLEAN, does not damage electronic equipment for not conducting electricity and is chemically neutral. Similarly, argon gas does not generate particles or debris deposited in the room and causes any harm.

When acting as a simple smothering gas, IG-01 provides GLOBAL AVAILABILITY without restriction of brand. Since it's extracted naturally from the atmospheric air, it is accessible for recharging in any part of the world.

# COMPARATIVE

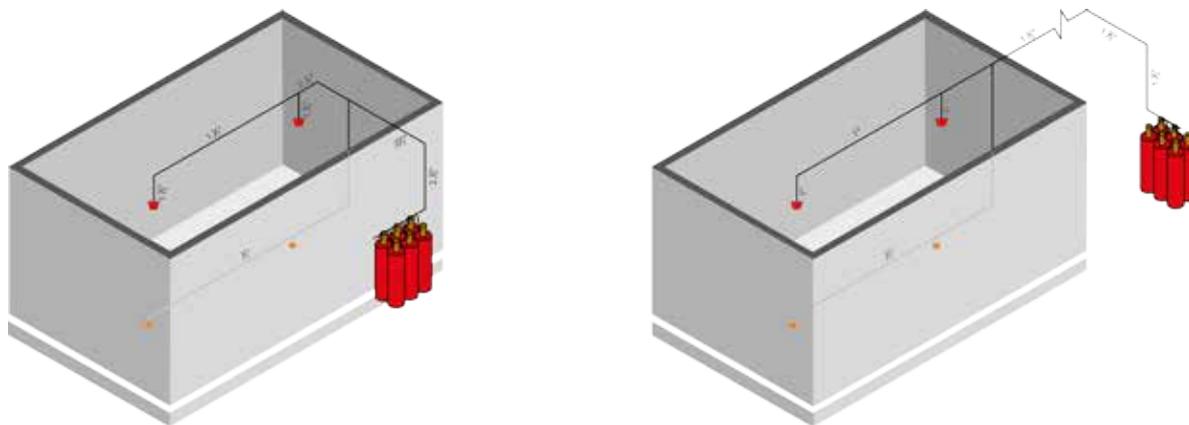
## PRACTICAL EXAMPLE: REDUCTION OF DIAMETERS IN A MEDIUM-SIZED ROOM

This case study examines protecting a paper-based filing system by employing argon, owing to the excellent ability of this gas to extend protection to the lowest levels of the enclosure (extending to false floors), as well as its easy supply sourcing due to the fact that it requires no mixing.

Thanks to RG SYSTEMS™ GREEN FLOW Constant & Controlled Flow Technology, in this case either

pipng can be reduced by two diameters, or the installation cabinet can be located even farther away. The Combi Manifold System (CMS), with a die-cast manifold, is much shorter and more manageable, weighs less and performs better.

**The RG Green Flow solution provides significant savings in pipe runs, fittings and labor costs over traditional systems using restrictors.**



FACILITY: paper file

HAZARD CLASS: Class A solid fire

DIMENSIONS: 14.0 x 10.0 m.

FILE: H = 3,00 m; FALSE FLOOR: H = 0,50 m

DESIGN CONCENTRATION: 37,97%\*

AGENT IG-01 REQUIRED: 234,22 m<sup>3</sup>

*\*RG GREEN SYSTEMS design concentration as per NFPA, according to UL / FM approvals*



	IG-01 with restrictor	RG SYSTEMS™ GREEN FLOW IG-01
Agent loading	250,2 m <sup>3</sup>	250,2 m <sup>3</sup>
Equipment	6 Cyl. battery, 140L, 300 bar	6 Cyl. battery, 140L, 300 bar
Pipe used	SCH 80 Accessories 3,000 lbs.	SCH 40 Accessories 600 lbs.
Maximum diameter	Ø 2 1/2"	Ø 1 1/2"
Manifold	1.940 mm	CMS: 300 mm
P <sub>max</sub> pipe network	60 bar	38 bar
GWP	0 PCA/m <sup>3</sup>	0 PCA/m <sup>3</sup>

*At the same design concentration, the savings are easy to observe: the pipes are lighter with a smaller diameter, and are easier to manipulate, there by lowering labor costs during on-site installation.*

**RG Green Flow Constant and Controlled Flow Technology is the best solution to minimize noise and pressure surges within any enclosure.**

**Generally suitable for occupied rooms, sensitive equipment, load recharges, high locations, and solid, liquid, gas and energized fires.**

**Backed by the expertise, know-how and guarantees of RG Systems, and approved by international agencies and certification authorities.**



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