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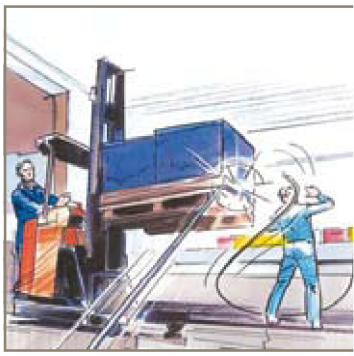
Moduflex AirGuard Protection System

Airfuse - protection of personnel, machinery and equipment

Catalogue PDE2604TCUK-ca. October 2008



Parker

ENGINEERING YOUR SUCCESS.

Moduflex AirGuard Protection System

Protect your most important assets: your employees and their equipment!

The AirGuard offers simple but efficient protection to pneumatic systems in the event of a broken compressed-air hose or pipe. The air supply is immediately shut off by the AirGuard, should the volume of air exceed a set value. This "value" is factory preset and is set to allow normal air consumption when using air tools.

Should the air consumption exceeds the set value, e.g. the air line is severed, then the internal piston instantly shuts off the main flow. An integral bleed hole allows some air to flow though. This enables the line pressure to automatically reset the AirGuard once the main line break is repaired.

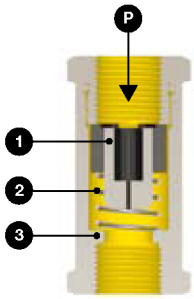
Management Responsibility:
It is the duty of management to ensure a safe working environment for their employees and that the equipment complies with the **Machinery Directive EN983** or **"PUWER"** (the Provision and Use of Work Equipment Regulations)

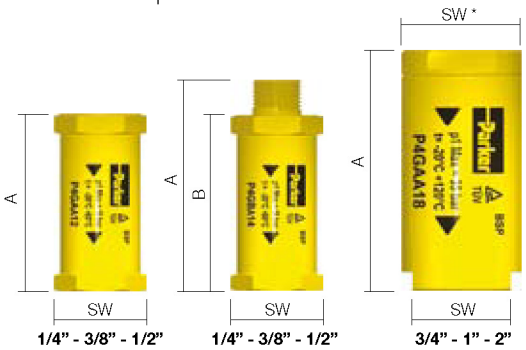
EU Standard EN983-1996 (5.3.4.3.2) currently states:
"Failure of flexible hose assemblies and plastic piping:
If the failure of a flexible hose assembly constitutes a whiplash hazard or a fluid ejection hazard, it shall be restrained or shielded".

Complies with the 2009 ISO4414 (5.4.5.11.1)
"When failure of a hose assembly of plastic piping constitutes a whiplash hazard, it shall be restrained or shielded by suitable means and/or an air fuse for compressed air shall be mounted".

Function:

(P) is the inlet. Air passes the piston (1) and continues through the seat (3). The air flow, passing the piston, is slowed down by means of length wise grooves on the outer side of the piston. If the flow is too high, the air cannot pass the piston quickly enough, and the piston is forced against the spring (2) and towards the seat. The maximum flow is shown in the graph. If the value indicated is exceeded e.g. if the hose suddenly breaks - the air supply is automatically shut off. An integral bleed hole allows some air to flow though. This enables the line pressure to automatically reset the AirGuard once the main line break is repaired.





Special Applications

Stainless Steel AirGuard available in 1/2" size

Some branches of industry with a high hazard potential, such as chemical and pharmaceutical as well as clean room and offshore technologies place extremely high demands on both the safety of their employees and the protection of their facilities. Compressed air is typically used as an energy transfer medium in these industries and is no means without its dangers: compressed air hoses can rupture or burst, as can fixed pipes. This may expose personnel working in such areas to extreme hazards as well as potential damage to expensive facilities and costly production downtime.

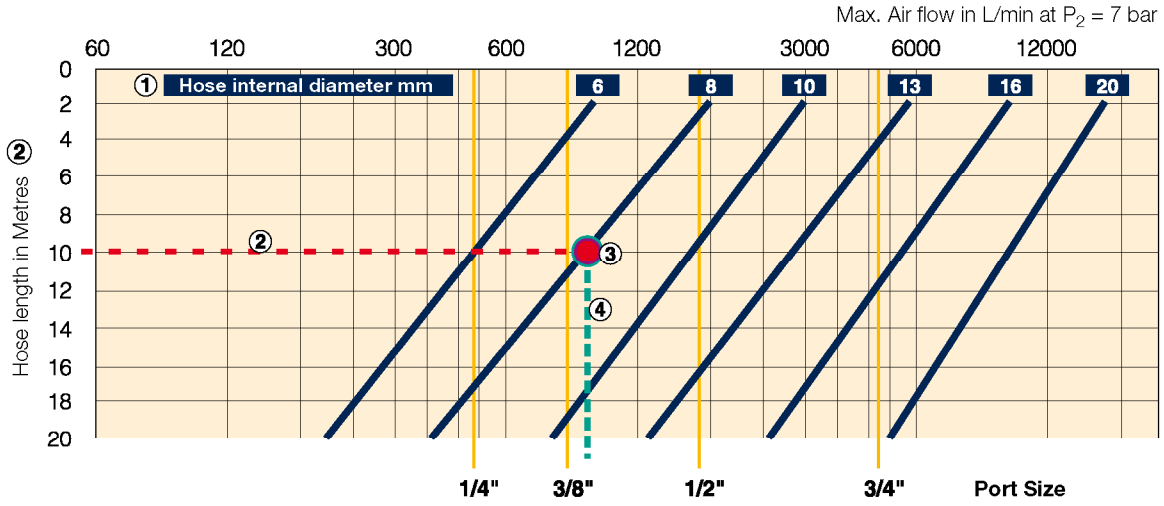
Technical Data and Ordering Information

Thread connection BSP	dimensions (mm)			Weight (g)	Maximum inlet pressure	Temperature range	Material	P1 inlet thread	P2 outlet thread	Order Code
	A	B	SW							
1/4"	48	-	22	30	18 bar (255 PSIG)	-20°C to 80°C (-4°F to 176°F)	Housing: aluminium Piston: polyoxy-methylene	female	female	P4GAA12
1/4"	58	49	22	36				male	female	P4GBA12
3/8"	59	-	27	58				female	female	P4GAA13
3/8"	71	59	27	62				male	female	P4GBA13
1/2"	65	-	30	78				female	female	P4GAA14
1/2"	80	65	30	85				male	female	P4GBA14
1/2"	62	-	28	132			Housing: stainless steel Piston: polyoxy methylene	female	female	P4GCA14
3/4"	76	-	30 / 36*	107		-20°C to 120°C (-4°F to 248°F)	Housing: aluminium Piston: aluminium	female	female	P4GAA16
1"	100	-	41 / 50*	300	35 bar (500 PSIG)			female	female	P4GAA18
2"	130	-	70 / 80*	775				female	female	P4GAA1C

Note: NPT version available on request - 1/4" high flow version available on request.

How to select the optimal size of an AirGuard

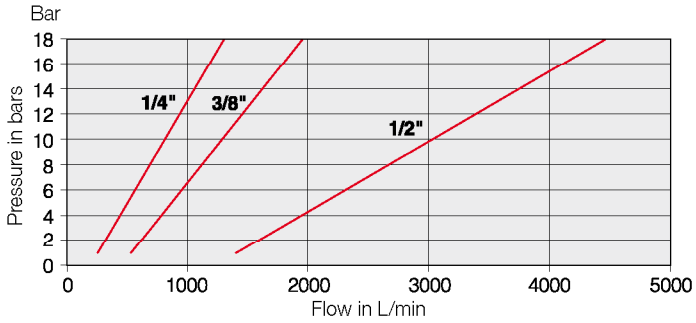
Information based on an inlet pressure of 7 bar



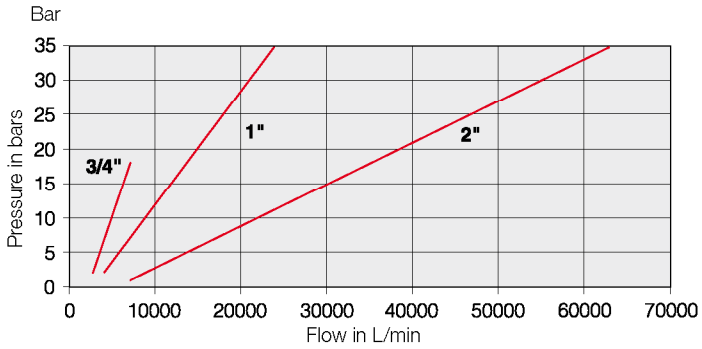
a. Determine the internal diameter of the hose, tube or pipe being used ① (see specification Hose-internal Diameter in blue box, blue diagonal line).
b. Determine the length of the hose, tube or pipe ② (Hose length in meters).
c. Define the intersection of point a and b, and mark a vertical line downwards. ③ - ④ (In the example the red/green dot and the green dashed line).
d. The next vertical yellow line, left of the intersection line ④ (example: green dashed) tells the correct Airguard size (in inches).
e. Important: Every flow value to the right of the respective vertical line (yellow) would activate the Airguard in case of a bursting hose, pipe or tube. All Airguard sizes right of the intersection line (green) are too big and will not close up.
f. Example: Which air fuse should be used for a hose, pipe or tube bearing 8 mm inner diameter and 10 meters of length - follow the 10 meter line (red ②) to the intersection point (red/green dot ③). Now the next left yellow line marks the correct size.
g. Result: The correct size in our example is the Airguard 3/8"

Closing Flow Graphs

1/4", 3/8" and 1/2" flow rates



3/4", 1" and 2" flow rates



Dimensioning of compressed air hoses and equipment

Connection Size	Hose length 0 to 10 meters			Hose length 10 to 20 meters		
	Inner diameter Minimum mm	Minimum pressure bar	Flow at 6 bar l/min	Inner diameter minimum	Minimum pressure bar	Flow at 6 bar l/min
1/4"	7	4	480	8	4	480
3/8"	10	4	1100	12	4	1100
1/2"	12	4	2000	14	4	2000
3/4"	18	4	3800	20	4	3800
1"	24	4	6500	26	4	6500
2"	45	4	16000	50	4	16000

If the pressure is lower than stated in the table, a hose with a larger internal diameter must be used.

To select the correct size AirGuard, the pneumatic tool or equipment must have a maximum flow requirement to the left of the red line.

e.g.: 15 bar @20000 L/m = 2" size AirGuard
8 bar @1000 L/m = 3/8" size AirGuard