Technical Specification

Working Temperatures and Pressures

John Guest Cartridges and Half Cartridges are suitable for the following pressures and temperatures.

Acetal Cartridges

Those Plastic Cartridges which have the prefix PI,PM,CI,CM,PCI PCM or ECI.

Temperature	Pressure	
	5/32" - 5/16" 4mm - 8mm	3/8" - 5/8" 10mm - 22mm
Air*		
-20°C	16 Bar	10 Bar
Potable Liquids and Air*		
+1°C	16 Bar	10 Bar
+23°C	16 Bar	10 Bar
+65°C	10 Bar	7 Bar

*Only cartridges with a Nitrile rubber 'O' ring should be used for air, these can be identified by part numbers with prefix PI or PM.

Polypropylene Cartridges

Those Plastic Cartridges which have the prefix PP.

Temperature	Pressure	
	1/4" - 3/8"	
Potable Liquids		
+1°C	10 Bar	(150psi at 35°F)
+20°C	10 Bar	(150psi at 70°F)
+60°C	4 Bar	(60psi at 140°F)

Metal Cartridges

Those Metal Cartridges which have the prefix MM, MI, CM, CI, or LM.

Temperature	Pressure	
	5/32" - 5/16" 4mm - 8mm	3/8" - 5/8" 10mm - 22mm
Air*		
-20°C	16 Bar	10 Bar
+23°C	16 Bar	10 Bar
+70°C	10 Bar	7 Bar

* The above ratings are for air. For use with other fluids or at other temperatures and pressures, please consult our Customer Services Department.

The maximum operating temperatures and pressures are dependent on the housing material, wall thickness, vibration and pulsation, tube type and general operating conditions.

Customers are advised to carry out appropriate testing to ensure cartridges are suitable for their application.

Housing Materials

Plastic Half Cartridges are only recommended for use with plastic and soft metal housing materials. Avoid any form of housing finish, such as chromium plating or annodising, which significantly increases surface hardness

Tube Types

Plastic Tube - Polyethylene, nylon and polyurethane conforming to the tolerances shown below. For soft or thin walled tube we recommend the use of tube inserts.

Metal Tube (soft) - Brass, copper or mild steel conforming to the tolerances shown below.

Metal Tube (hard) - We do not recommend our cartridges for hard metal tubes.

It is essential that the outside diameter is free from score marks and that the tube be deburred before inserting into the cartridge.

Tube Tolerances

Cartridges are offered for tubes with outside diameters to the following tolerances.

Size (inches)	5/32 - 3/16	1/4 - 5/8
Tolerance (inches)	+0.001/-0.003	+0.001/-0.004
Size (mm)	4mm - 5mm	6mm - 22mm
Tolerance (mm)	+0.05/-0.07	+0.05/-0.10

Installation and System Testing

Products should be kept clean and undamaged before use.

All installations must be pressure tested after installation to ensure system integrity before handing over to the final user. See also "Making a connection".

Cleaners and Sanitising of Acetal Fittings

The external surfaces of John Guest products must not come into contact with oxidising or acidic cleaners and sanitising agents, for example (but not limited to) those below pH 4, high in sodium hypochlorite level (bleach) or containing hydrogen peroxide. Our plastic material suppliers recommend ECOLAB Oasis 133 as a suitable cleaner for the external surfaces of acetal products manufactured by John Guest.

Several different methods exist for sanitising the internal surfaces of fluid systems, including sodium hypochlorite, hydrogen peroxide, chlorine dioxide or ozone. It is entirely the responsibility of the end user to determine if the chosen method is suitable for use with John Guest products over the planned working life of the system. However, to avoid unnecessary early failure, John Guest requires that the disinfection solution must be immediately flushed out at all draw off points with fresh, wholesome water at the end of the disinfection period. **The solution must not be left in the system**. Disinfection solutions must only come into contact with the internal (fluid carrying) surfaces of the system. If any other surfaces of a fitting come into contact with disinfection solution **the whole fitting must be replaced immediately.**Details of which products are made from Acetal are shown in our catalogues but generally John Guest products incorporating Acetal are designated by the part number prefix PI, PM, CI, CM and RM. Polypropylene fittings offer greater resistance to aggressive chemicals than Acetal fittings. Polypropylene does not have the same mechanical properties as Acetal and John Guest polypropylene fittings are generally designated by the part number prefix PP or PPM.

Product Design

John Guest has a policy of continuous research and development and reserves the right to amend without notice the specification and design of all products. Product descriptions and sizes are approximate and John Guest reserves the right to supply products which may have minor and negligible deviations from that printed in catalogues etc. (or from products previously supplied).

Warranty

Whilst we give a warranty against defects in manufacture or materials, it is the responsibility of the specifier to ensure that fittings and related products are suitable for their application. The installation must be carried out correctly in accordance with our recommendations, complying with recognised codes of practice and relevant national standards, and be properly maintained. Please refer to our terms and conditions of sale.

Product Selection

Due to the wide variety of operating conditions, applications and uses of our products, it is the user's / specifiers responsibility, through their own testing analysis, to ensure correct product selection for their applications.

Installers of John Guest Cartridges are fully responsible for the final product assembly, testing, quality and application.

Side Loads

John Guest products are not designed to be used under side load as this may adversely affect their ability to function long-term. Always ensure tubes have good alignment with the fitting. They must also not be subjected to any form of impact or other damage, such as being hit or dropped, even accidently. If fittings have damaged or suffered an impact, they should be replaced immediately. John Guest warranty does not cover loss caused by any form of damage.