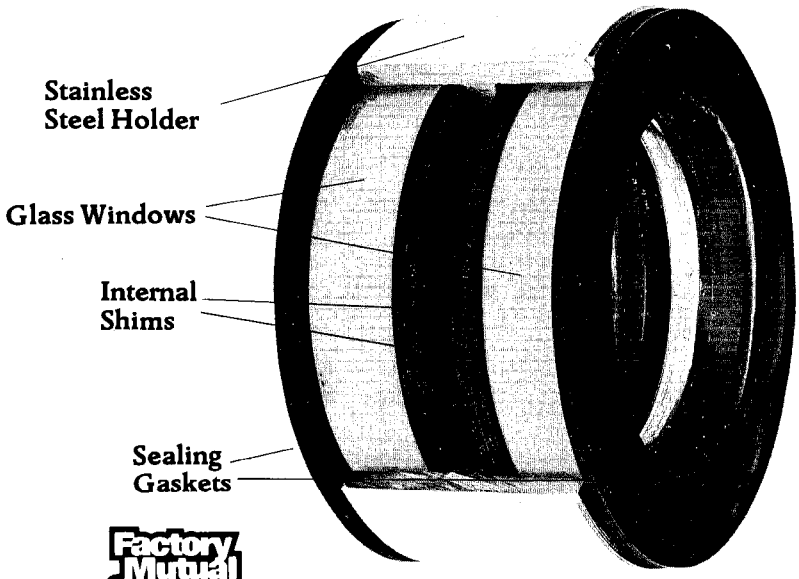
THE FULL-VIEW DUAL WINDOW



Factory Mutual System Approved

Cross Section of Dual Window

Dual Glass Window

Patented dual windows are available to fit all flat glass type sight flow indicators and sight windows. The glass is encased in a metal cartridge. Compressive forces caused by bolting are spread evenly over the glass surface, reducing stress concentrations. The forces are largely taken by the cartridge rather than the glass, and gasket sealing is improved with higher unit load per area with lower bolting forces.

With two glass discs separated by an air space, the effects of thermal shock are reduced to 60%. Should either the inner or outer glass break due to erosion, corrosion, or mechanical forces, the remaining window will sustain the pressure.

If, for any reason the inside glass should fail, the outside glass will hold until the unit can be taken down and repaired. Care must be taken at time of window replacement. Be certain to follow all instructions in "Storage, Installation, Operation, Maintenance and Service of Jacoby-Tarbox Sight Flow Indicators and Sight Windows."

Wherever there is need for extra precaution, it is both simple and economical to replace single glasses with dual windows by using longer bolts.

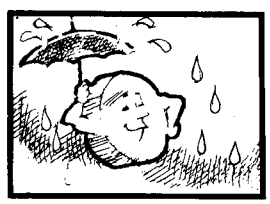
PROTECTION AGAINST THE FIVE MAJOR CAUSES OF SIGHT GLASS FAILURE:

Stress Concentration

Caused by uneven or excess tightening of the retainer. The internal shims will compress enough to cause the SS cartridge to absorb the excess forces, limiting the clamping force on the glass to only that amount required for sealing. This has been confirmed by factory tests.

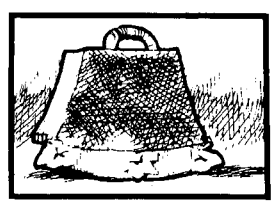
Thermal Shock

In hot applications the double windows not only reduce the thermal gradient across each glass, but the outer glass also protects the inner one from cold splashes or blasts of air. (In cold applications, the outer window reduces the possibility of frosting).



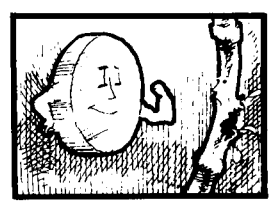
Corrosion and/or Erosion

If the inner glass is sufficiently weakened so that it breaks under pressure, the outer glass, having never been exposed to the medium, will still be in good condition and will retain the fluid until it is convenient to replace the inner one.



External Mechanical Force

By separating the two windows, any rupturing force breaking the external window would not likely be transmitted to the inner window. This was confirmed by Factory Mutual System tests and referred to in paragraph 4.4 of report serial No. 21874.



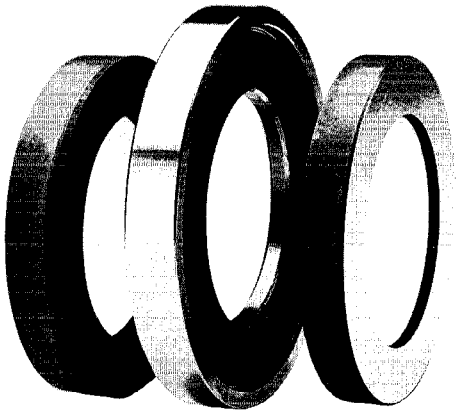
Overpressure

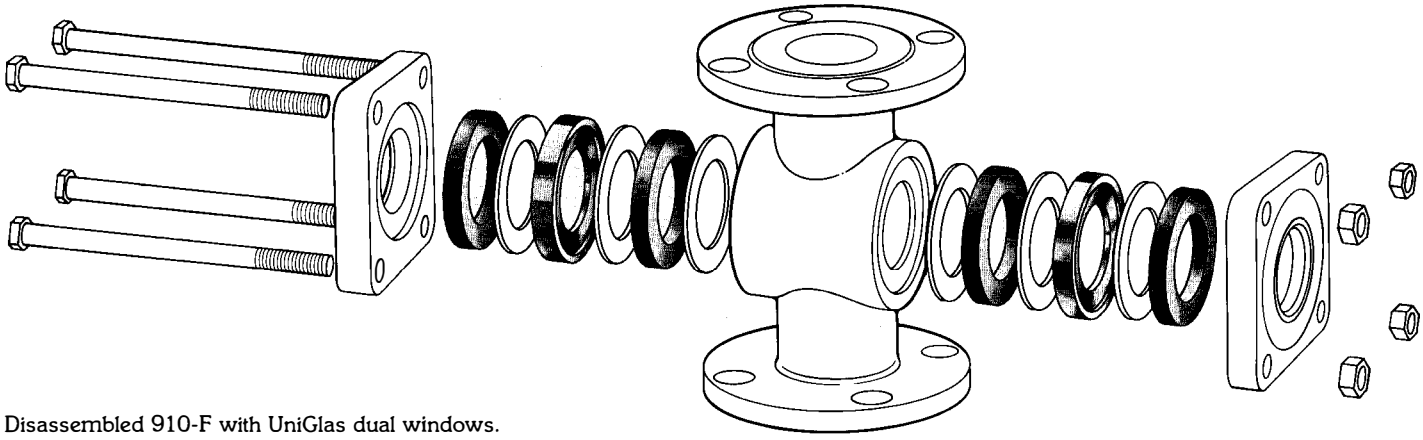
Due to a substantial factor of safety for a properly installed sight glass, it is more likely that some other component in an overpressurized system will fail first.

UNIGLAS™ DUAL WINDOWS

Dual UniGlas Window

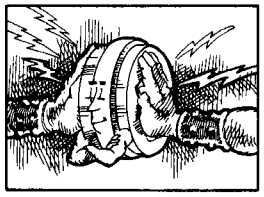
All the safety, reliability and redundancy advantages of standard UniGlas sight windows—but with double the process protection.





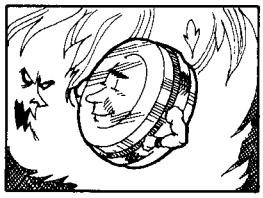
Disassembled 910-F with UniGlas dual windows.

WHY SIGHT WINDOWS FAIL



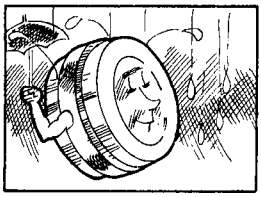
Stress Concentration

This is caused by uneven or excessive tightening of the retainer. The configuration and sealing method of UniGlas cause most of the excess forces to be absorbed by the metal compression ring.



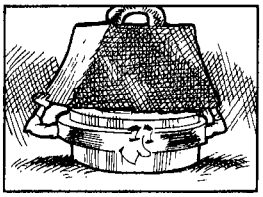
Thermal Shock

Thermal shock causes failure by inducing tensile stress on *one* side of the window glass. With UniGlas, though, sudden cooling on one side must first overcome the inherent compressive stresses in the glass making its resistance to shock much higher.



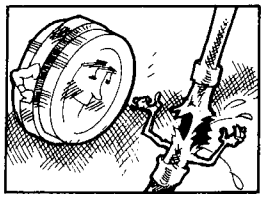
Corrosion and/or Erosion

Because UniGlas is annealed and not tempered glass, it is less subject to weakening by attack of its surfaces.



External Mechanical Force

The strength of UniGlas makes it resist mechanical failure. Even when subjected to extreme, uncommon conditions, such as described in the drop test section, it remains basically cohesive.



Overpressure

Glass in compression is inherently stronger than plain glass. This coupled with a high factor of safety in design makes it more likely that some other component in an over pressurized system will fail first.

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