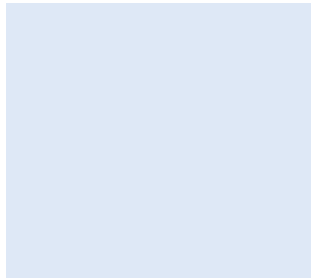
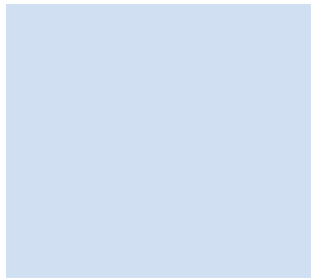


JACOBY-TARBOX®

A PRODUCT OF CLARK-RELIANCE



NEW



JACOBY-TARBOX®

100 years of Quality!



- Increase duty cycle
- Maximize process output
- Minimize down time
- Consistent performance

Compliance... “Out of the Box”



B2.1

Section VIII

B16.5

B31.1

B31.3



ASTM

ASME BPE

BioProcessing Equipment



DIN

PED

CRN



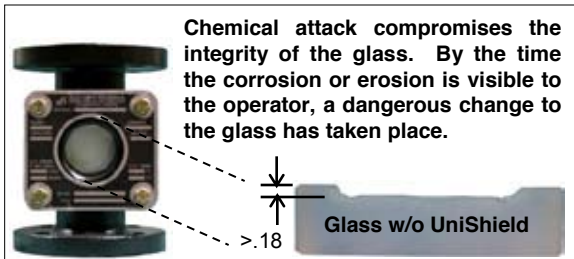
JIS

MIL

Innovative solutions to extend your window's duty cycle...

Shielding: UniShield® Window Protection

UniShield is your **early warning device**, showing changes in shield **BEFORE** glass integrity is compromised.



Vacuum Rated
Shielding
UniShield®

Only from
Jacoby-Tarbox

SEE Without Darkening



UniShield

Mica

Glass Safety: UniGlas® Safety Sight Window Glass

30 years without a break!

- **Highest safety factor at 10:1** → Safe and Dependable
- **Greatest impact resistance** → Tough, Pre-stressed Glass
- **Reusable** → ONLY *glass fused to metal optical discs* may be placed back into service safely after use
- **Simple maintenance** → **One piece** – No glass bonding agents, shims, packing, or adjustment screws



Lighting: Phaeton® XTL & SL Explosion Proof Lights

Explosion Proof power supply and Intrinsically Safe output

- **Save money in design with Single window Viewing**
Second, light-only window not required for 4" (DN 100) and larger
- **Easy Installation to RETROFIT nearly ANY UNIT**
No disassembly or modification of the existing equipment
- **Safe "no burn" LED light source**
Will not "bake on" glass
- **Decreases maintenance costs**
Uses vibration-resistant 100,000-hour LED's



Phaeton SL



Phaeton XTL



Sight Flow Indicators

Full ASME - ONLY ASME B31.1 and B31.3 Metals in Construction

**Horizontal
Upward Vertical Flow**

FLAPPER



Medium Pressure
- Class 150 910-FA

High Pressure
Class 300 / 600 F-910HPA -300 / 600
Class 900 / 1500 F-910HPA -900 / 1500

Any Flow Direction

ROTOR



935-FA

F-960HPA -300 / 600
F-960HPA -900 / 1500

**Downward Vertical Flow
"less than full" horizontal lines**

P-DRIP



608-FA

F-608HPA -300 / 600
F-608HPA -900 / 1500

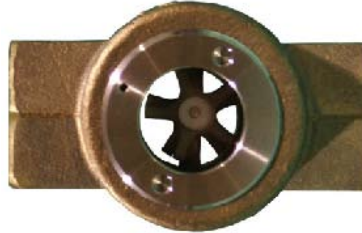
FLAPPER



Nominally Rated
- 150 psig (10.3 Bar) 100-ST

Full ASME
- Class 150 100-SA
- CL300 / CL600 S-100HP -CL3 / -CL6
- CL900 / CL1500 S-100HP -CL9 / -CL15

ROTOR



300-ST

300-SA
S-300HP -CL3 / -CL6
S-300HP -CL9 / -CL15

P-DRIP



200-ST

200-SA
S-200HP -CL3 / -CL6
S-200HP -CL9 / -CL15

Plain or "No Flap"
add "(NF)" to any Flapper model
Any Flow Direction

PLAIN



910-FA (NF)
shown

Highest Pressure Ratings
- Up to CL1500
(3750 psig / 259 bar)
Flanged, Threaded, Socket
Weld, Butt Weld, and other
connections

Flutter
add "FLTR" to any Flapper model
Low Volume Horizontal & Vertical Flow

FLUTTER



100-ST-FLTR
shown

Specialty Units

NEW 90-LR

- **Save space and Save weight** (combine elbow and indicator)
- CL150 & CL300 systems
- Plain or with a drip tube
- Flow in any direction (plain unit)



90-LR

Side Connections

- **Connect instruments** thermometers, thermo wells and flow switches
- **Sample or drain system**
- **Add secondary process**
- **Maintain system integrity** NO change in unit rating
- Connections female NPT coupling, Male NPT, and flanged



910-FA (NF) With 3/4" Coupling



910-FA (NF) With Clamp-on Steam Jacket

Jacketed

- **Improved temperature control**
- Jacketed processing lines
- Clamp-on (standard)
- Weld-on (available)

Tubular

- **Maximum visibility**, "any angle" viewing
- Pressure rating: 150 psig (10.3 Bar) or less, changes with size
- Special lengths: up to 48" (1219 mm) in length for flange sizes from 1/2" to 12"
- Must isolate from mechanical strains on pipelines



805-S Threaded connection



830-F Flanged connection



4000-S Threaded Connection



860-F Flanged connection

Sheathed Tubular

- **Rugged environments with minimal ambient light**
- Increased visibility with cylinder protection from rigid, non-wetted body
- Pressure ratings are 150 psig (10.3 Bar) or less (varies by size)
- Stuffing box seal eliminates direct end loading of glass

Hygienic Units

Hygienic models designed in accordance with ASME-BPE are imperative for biotechnology, pharmaceutical, cosmetic, and food & beverage processing systems.

Hy-Sight™

- **Superior Cleanability** – Precision bore glass, controlled O-ring compression
- **Smooth transition**, exceeding CIP & SIP requirements
- **Maximum visibility**
- **Simple maintenance** with "No Gall" rounded knuckle threads

Hy-Sight



6000-C

TruSan™

- Bulls-eye style with UniSan windows
- **Easy installation**, body will match system design Hygienic Clamp or butt weld ends

UniSan™

- **Protect process** from contamination while viewing
- **No breakage** concern
- **Impact resistant** glass fused to metal construction



UniSan

Severe Service Solutions

UniGlas® & Other Glass Materials

SINGLE WINDOW

(one per side, two per unit)

Borosilicate glass

- Jacoby-Tarbox® standard, used to 500°F (260C)

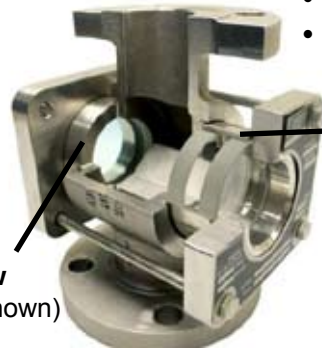
UniGlas (more on page 3)

- **Greatest Temperature Range** offered by any manufacturer for glass fused to metal disc
- Suitable for **Cryogenic service**

Quartz

- **Thermal shock resistant**
- Elevated temperatures to 2000 F (1100C)
- Chemical shielding

Single Window
(UniGlas® shown)



IMPORTANT!

****UNIT RATING MAINTAINED**
FOR ALL WINDOW MATERIALS.**
(UniGlas®, Quartz, and all Dual Window)

DUAL WINDOW OPTION

(two per side, four per unit)

- FM Approved window assembly
- Two identical windows = 100% redundancy
- Independently mounted at each opening
- Available in Borosilicate, UniGlas®, Quartz



Dual Window

(Borosilicate shown)

Dual Window Applications

- Thermal shock
- Extreme process changes
- Rough environments (external impact)

Body (head) Materials

- Standard materials: Carbon Steel, 316 stainless steel, Bronze
- Match specific performance requirements with common specialty alloys: Alloy 20, Duplex, Hastelloy®, Inconel®, Monel®, other stainless steels and other special alloys

Gasket Materials

- Standard material: Neoprene
- Match specific performance requirements for chemical resistance or elevated temperatures: PTFE Gylon® 3545, Fiber (IFG 5500), Graphite, FKM, other special materials

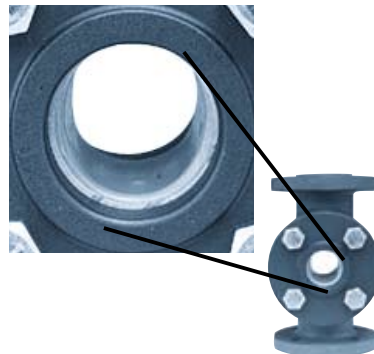
Linings

– Fluoropolymer lined sight flow indicators and More

- **Corrosion resistant linings** fluoropolymers, such as PFA, Edathon, PTFE, ETFE; plastics and rubber
- **Cost savings** over indicators manufactured from high performance body materials
- **Match any service requirements**
Internal protection only (lining)
Internal and external protection (encapsulating)
Full vacuum service
High pressure service



910-FA-PFA
Carbon steel encapsulated
in PFA Teflon



910-FA-TFE
Blow-molded PTFE liner



830-F-TFE
Tubular unit with
replaceable PTFE liner

Sight Windows

- Economical tank viewing
- Meet all connection requirements
- Light duty to severe service
- Customize to your requirements

Security Sight Window

- Model 5005-DW: Patented **Factory Mutual® Approved** Dual Window standard
- **Protection** against stress concentration, thermal shock, corrosion, erosion, overpressure
- Corrosion resistant linings: PTFE, PFA, and rubber
- Bolt-on to ASME standard flanges
- Pressure range: Full Vacuum (FV) to 1500 psig (103 bar)



5005-DW

Bolt-On

- **Model 5800 UniGlas Sight Window**
- Simple, two-piece, ASME rated units, UniGlas® window plus retaining flange

UniGlas®



5800

- Strongest, safest, most impact resistant
- Bolt-on to ASME standard flanges
- Pressure range: FV to 1500 psig (103 bar)

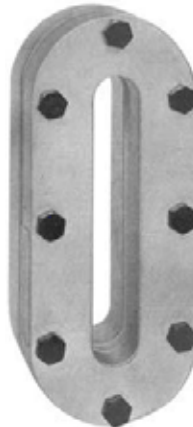
Pressure Vessel Weld-On

- Section VIII of the ASME Boiler & Pressure Vessel Code
- "PVQ" = Pressure Vessel Quality
- Window options - UniGlas® (round only), Dual Window tempered, UniGlas, or Quartz
- Flat weld pad standard
Curved pads available with cylindrical and spherical radius cuts
- Pressure range: FV to 600 psig (41.3 bar)



5200-PVQ

5300-PVQ
Obround



Weld-On

Weld Neck Sight Windows - welded directly to pipe ends or into tank and vessel walls

W-5000



Weld Pad Sight Windows

- Non-ASME vessels
- Welded directly to tank or vessel walls or covers
- Flat, cylindrical or spherically shaped pads
- Pressure range: FV to 150 psig (10.3 bar)

Threaded

- Threading directly to pipe ends or couplings
- Specialty UniGlas sight plugs available
- Pressure range: FV to 150 psig (10.3 bar)



S-5400
Male Thread



S-5100
Female Thread



5200 Commercial

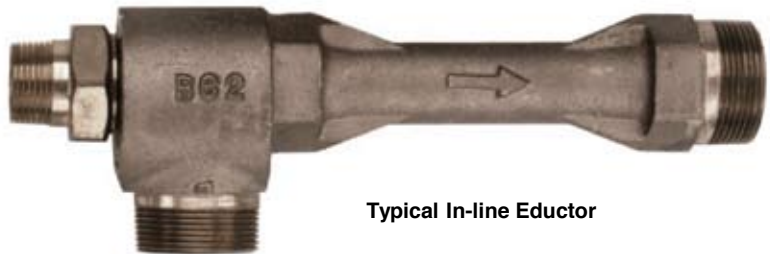
Eductors

- Safely pump hazardous fluids → move liquids via vacuum
- Maximize service life → special chemical and wear resistant alloys
- Shortest blending times → Greatest entrainment ratio
- Scale up with confidence → simulate processes prior to construction

Designed to ASME B31.1 & B31.3 Requirements...

In-line Eductors

- **Decrease maintenance cost** – No moving parts
- **Use less energy** – Venturi-based pumping of liquids, gases, and even solids
- Also known as Jet Pump, Injector, Ejector, Jet Syphon, Steam Syphon, Venturi Pump,



Typical In-line Eductor

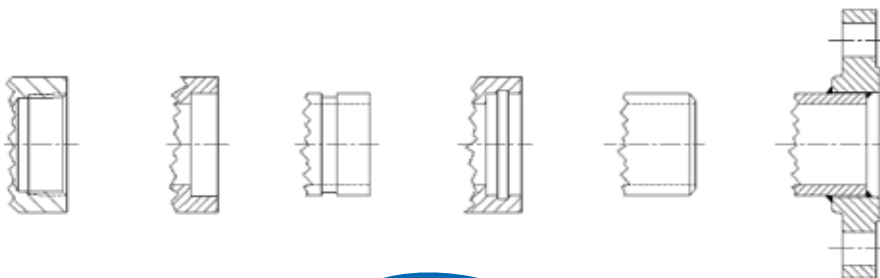
In-Tank Eductors

- **Use less energy** – More efficient than nozzles alone, to Mix, blend, suspend solids and heat
- **Decrease maintenance cost** – No moving parts
- **Smaller pump required** – Amplifies pump capabilities
- **Heat more quietly and efficiently** than sparging



TLA – Tank Liquid Agitator

...with the connections your application requires.



CFD Analysis Available

- **Verify your process** with Analysis of current mixing
- **Optimize mixing performance**
- **Increase productivity**



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