

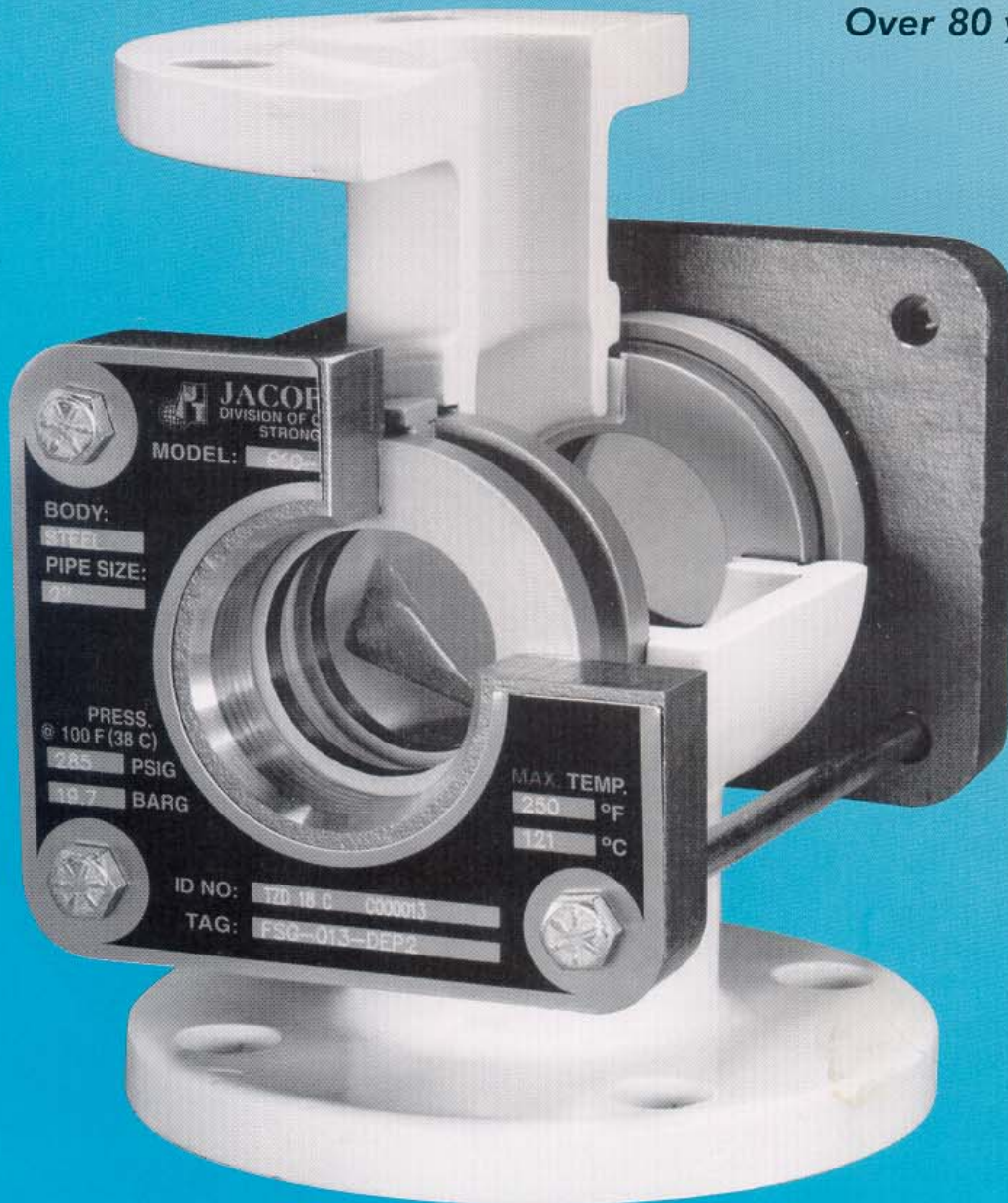
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# SIGHT FLOW INDICATORS



A Division Of The  
Clark-Reliance Corporation

*Over 80 years of Quality!*



FLUTTER TYPES  
PLAIN TYPES  
FLAPPER TYPES  
ROTARY TYPES  
DRIP TYPES  
TUBE TYPES  
SPECIAL TYPES  
SIGHT WINDOWS  
ACCESSORIES

# COMPLETE LINE

Jacoby-Tarbox Sight Flow Indicators are manufactured by The Clark-Reliance Corporation. They are distributed world-wide to meet routine as well as the most punishing applications.

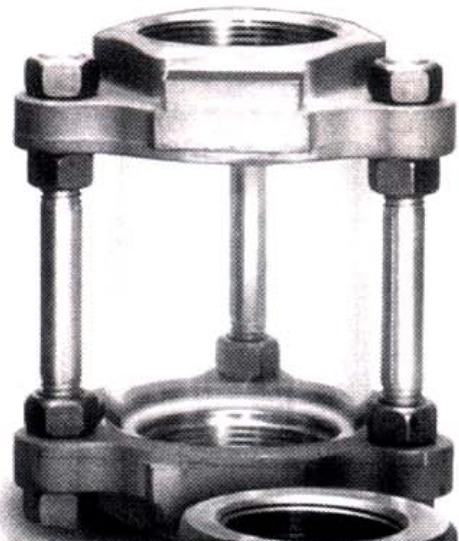
All major Sight Flow Indicator styles are offered in a variety of sizes with threaded, flanged or other connections. Operating pressures range from full vacuum to 3000 PSIG depending on style and model.

Units are hydrostatically tested to 150% of rated pressure and are guaranteed free of material and manufacturing defects.

Standard Jacoby-Tarbox Sight Flow Indicators can be specified to accommodate very specific application requirements. Special indicators can be designed and manufactured to meet unique installation, processing or flow criteria. Specifiers may choose from a wide range of indicator body materials, gasket materials, glass types and window designs, plus special corrosion-resistant lined indicators.



(Units may be specified with DIN/JIS flanges, BS threads, and to meet NACE requirements for sour gas service.)



**DRIP STYLE**

**FLAPPER STYLE**

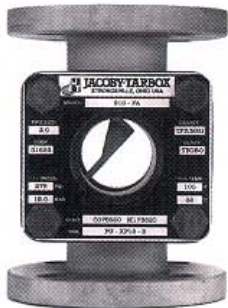


## FLAPPER

Horizontal & Upward  
Vertical Flow



Style 100-S Flapper  
with threaded end connections



Style 910-FA Flapper  
with flanged end connections

Flapper models are recommended for applications involving transparent or slightly opaque solutions. Also, they are frequently specified for flow indication of gases. The position of the "hinged flapper" indicates variation in flow rate. When it is not necessary to visualize flow action, models without a flapper component are available. Plain (No-Flapper) models are identified by model numbers carrying (NF) designations.

### Threaded end connection styles

**Medium Pressure**  
**150 PSIG Nominal Rated**  
100-S & 100-S(NF)  
**150 Class Full ASME Rated**  
100-SFA & 100-SFA(NF)

**High Pressure**  
**600, 1000, 2000, 3000 PSIG Nominal Rated**  
S-100HP-600 & S-100HP(NF)-600  
S-100HP-1000 & S-100HP(NF)-1000  
S-100HP-2000 & S-100HP(NF)-2000  
S-100HP-3000 & S-100HP(NF)-3000

### Flanged end connection styles

**Medium Pressure**  
**150 Class Full ASME Rated**  
910-FA & 910-FA(NF)

**High Pressure**  
**300 Class Full ASME Rated**  
F-910HPA-300 & F-910HPA(NF)-300  
**600 Class Full ASME Rated**  
F-910HPA-600 & F-910HPA(NF)-600  
**900 & 1500 Class Full ASME Rated**  
Available; consult factory for specific application

## ROTARY

Any Flow Direction



Style 300-S Rotary  
with threaded end connections



Style 935-FA & 960-FA Rotary  
with flanged end connections

Rotary models are recommended for applications involving dark solutions where rotor motion will be easily detected. They can also be used with transparent solutions or gases. Rotary models are easier to read at greater distances. The patented Low Flow TFE (Teflon®) rotor is impervious to most media. Extra-durable stainless steel rotors are available as an option for high temperatures.

### Threaded end connection styles

**Medium Pressure**  
**150 PSIG Nominal Rated**  
300-S  
**150 Class Full ASME Rated**  
300-SFA

### Flanged end connection styles

**Medium Pressure**  
**150 Class Full ASME Rated**  
935-FA & 960-FA

**High Pressure**  
**300 Class Full ASME Rated**  
F-960HPA-300  
**600 Class Full ASME Rated**  
F-960HPA-600

## DRIP

For Downward Vertical Flow



Style 200-S Drip  
with threaded end connections



Style 608-FA Drip  
with flanged end connections

Drip models are recommended for applications in distillation and similar systems involving intermittent flows. Drip models will not obstruct flow in any way.

### Threaded end connection styles

**Medium Pressure**  
**150 PSIG Nominal Rated**  
200-S  
**150 Class Full ASME Rated**  
200-SFA

### Flanged end connection styles

**Medium Pressure**  
**150 Class Full ASME Rated**  
608-FA

**High Pressure**  
**300 Class Full ASME Rated**  
F-608HPA-300  
**600 Class Full ASME Rated**  
F-608HPA-600  
**900 & 1500 Class Full ASME Rated**  
Available; consult factory for specific application

## FLUTTER

### Low Volume Horizontal & Vertical Upward Flow

Flutter models are recommended for applications involving low flowing gases or liquids that fall under the minimum indication flow rate for the Flapper and Rotor styles. A thin TFE (Teflon®) flutter engages the media and indicates flow, fluttering against the viewing window.



Style 100-S-FLTR  
with threaded end connections

### Threaded end connection styles Flanged end connection styles

All Flapper models are available with the flutter option. Flutter models are identified by a -FLTR suffix attached to the flapper model number.

## TUBE

### Low Pressure Vertical or Horizontal Flow



Style 830-F Tube  
with flanged end connections

Style 805-SD Tube  
with threaded end connections



Tube models are recommended where maximum visibility is required. They may be used only in systems that do not place mechanical strains on pipe lines. Models vary in length to 48" with flange sizes ranging from 1/2" to 12" 150 RF. Tubes are borosilicate glass.

### Threaded end connection styles

#### Low Pressure to 70 PSIG

850-S: Nominal Pressure Rated  
850-SL (Extra Length): Nominal Pressure Rated

#### Low Pressure to 150 PSIG

805-S: Nominal Pressure Rated  
805-SD (Tube/Drip): Nominal Pressure Rated  
805-SL (Extra Length): Nominal Pressure Rated  
805-SDL (Extra Length): Nominal Pressure Rated

## Flanged end connection styles

#### Low Pressure to 150 PSIG

830-F: Nominal Pressure Rated  
830-FD (Tube/Drip): Nominal Pressure Rated  
830-FL (Extra Length): Nominal Pressure Rated  
830-FDL (Extra Length): Nominal Pressure Rated

## CYLINDRICAL SHEATHED TUBE

### Vertical or Horizontal Flow



Style 4000-S  
Cylindrical Sheathed  
Tube with threaded  
end connections



Style 860-F  
Cylindrical Sheathed  
Tube with flanged  
end connections

Cylindrical Sheathed Tube models are recommended for applications where increased visibility is required. They may be used in pipe line systems that operate under some degree of mechanical strain, with sheathing providing the necessary indicator protection and support. Models are constructed using borosilicate tube glass and various "head" metals depending on application. (System content does not contact indicator bodies, only indicator heads, glass and gasketing.)

### Threaded end connection styles

#### Medium Pressure to 150 PSIG

1000-S (Cast Iron Body): Nominal Pressure Rated  
4000-S (Bronze Body): Nominal Pressure Rated

### Flanged end connection styles

#### Medium Pressure to 150 PSIG

860-F (Cast Iron Body): Nominal Pressure Rated

## JACKETED DRIP & FLAPPER

### For Improved Temperature Control

Jacketed models are recommended for improved temperature control at visual inspection stations along jacketed processing lines. Available in Drip and Flapper indicator styles, jacketed models can be specified in a wide range of materials.



Style F-910SJA  
Jacketed (Flapper)  
with flanged  
end connections

## Flanged end connection styles

#### Medium Pressure - 150 Class Full ASME Rated

F-608S.JA: Drip  
F-910S.JA: Flapper  
F-910S.JA(NF): Plain (No-Flapper)

## 90° ANGLE

### Low or Intermittent, Vertical Downward Flow



Style 90-D Angle  
with flanged  
end connections



Style 90-F Angle  
with flanged  
end connections

90° Angle models are recommended when space or system characteristics make straight line indicators unsuitable. Angle models can be supplied with, or without, drip tubes. Drip tubes are positioned into the center window area for easy observation. Models without drip tubes will operate effectively with solution flows in any direction.

## Flanged end connection styles

#### Medium Pressure to 150 PSIG

90: Nominal Pressure Rated  
90-D (Drip Tube): Nominal Pressure Rated  
90-S (Screwed Vent): Nominal Pressure Rated  
90-F (Flanged Vent): Nominal Pressure Rated

## SANITARY & HIGH PURITY

### For Sterile Processing Lines



Style 6000-C Sanitary with  
Tri-Clamp® end connections



Style 7000-C Sanitary with  
Tri-Clamp® end connections



These units are not the same as sight flows with simple sanitary end type connections. Patented special purpose sanitary models complying with the new 3-A° sight flow and window standard 65-00 are imperative for biotechnological, pharmaceutical, and food & beverage processing systems. Sanitary models are constructed entirely of 316L SS and come in a variety of electro-polished finish options. Ask our engineers for a copy of the new 3-A° standard for reference.

### End connections as listed

#### 150 PSIG Nominal Pressure Rated

6000-F, 7000-F: Flanged      6000-B, 7000-B: Bevel  
6000-W, 7000-W: Butt-Weld      6000-C, 7000-C: Clamp

# CHOICES & OPTIONS

## STYLES

Indicator styles are designed to accommodate the various flow directions common to processing systems.

**Plain Style:** For any flow direction

**Flapper Style:** For horizontal or upward vertical flow

**Rotary Style:** For any flow direction

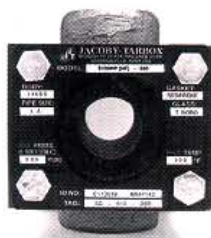
**Drip Style:** For downward vertical flow

**Flutter Style:** For low volume flow

**Tube Style:** For low pressure vertical or horizontal flow

Also, specific indicator styles are preferred relative to solution transparency, thickness or other system characteristics.

## PRESSURES



**High Pressure Plain Style S-100HP(NF)-600**

Jacoby-Tarbox Sight Flow Indicators are manufactured for low, medium and high pressure applications. Standard models with maximum pressure ratings ranging from full vacuum to 3000 PSIG are available. Depending on the style and model, indicators carry either a "Full ASME Rated" or a "Nominal Pressure Rated" designation. Models are categorized as follows:

**Low Pressure:** Threaded, Nominal Pressure Rated

**Low Pressure:** Flanged, Nominal Pressure Rated

**Medium Pressure:** Threaded, Nominal Pressure Rated

**Medium Pressure:** Threaded, Full ASME Rated

**Medium Pressure:** Flanged, Nominal Pressure Rated

**Medium Pressure:** Flanged, Full ASME Rated

**High Pressure:** Threaded, Nominal Pressure Rated

**High Pressure:** Flanged, Nominal Pressure Rated

**High Pressure:** Flanged, Full ASME Rated

## BODY MATERIALS

To meet specific performance requirements, indicators can be manufactured from 316 and 304 Stainless Steel, Alloy 20, Hastelloy®, Inconel®, Monel®, Carbon Steel, Bronze, Cast Iron and PVC. Not all styles and models are available in all materials.

## LININGS

Selected indicators models, all with flanged connections, are available with a choice of corrosion-resistant linings including TFE (Teflon®), PFA and rubber. In certain applications, these linings provide cost savings over indicators manufactured from high performance body materials.

## WINDOWS

All Jacoby-Tarbox Sight Flow Indicators are fitted with windows of borosilicate glass as standard. **However, the far superior performance of UniGlas® is available on all models and is highly recommended.** UniGlas windows are considered to be the safest, strongest sight windows presently in use.



**UniGlas is glass fused to metal, resulting in extraordinary resistance to impact, scratching or pitting. When intentionally cracked at rated pressure, only slight weepage resulted with no window blowout or window failure.**

UniGlas, capable of handling most high pressure system temperatures from 435°F to 600°F, employs no glass bonding agents and requires no shims, packings, or adjusting screws for installation.

**UniGlas Sight Windows** are two-piece, ASME rated units, each with a UniGlas disc insert plus a separate retaining flange.

### Dual Glass Windows

For maximized safety, many Jacoby-Tarbox Sight Flow Indicators can be specified with a Factory Mutual® approved Dual Window option. As the name implies, each side of the indicator employs two windows of either borosilicate or UniGlas construction.



**Flapper Style 910-FA with Dual UniGlas Windows**

The Dual Window is recommended for systems carrying highly hazardous fluids or wherever extra precaution is advisable, such as in heavily trafficked areas.

## GASKETING

Jacoby-Tarbox Sight Flow Indicators employ neoprene as the standard gasket material. Other gasketing is available for compatibility with special fluids or operating/system characteristics. Choices include TFE (Teflon®) with Neoprene or Garlock 5500 Insert, Garlock 5500, Butyl, Buna-N, Silicone, Viton®, Graphite, and Gylon® brand gaskets.

## SHIELDS

Alkalis, phosphoric & hydrofluoric acids, steam, and other compounds are corrosive to borosilicate and silica quartz windows. To protect and extend the life of the window from corrosive attack, several different styles of window shields are available, depending on the media, pressure, and temperature requirements. Kel-F®, Mica, and PFA shields are the most common methods to protect the integrity of the window under harsh conditions.

UniShield™: For protection for maximum durability under thermal cycling and vacuum applications that cause premature failure of loose shields is now available from Jacoby-Tarbox. Consisting of a clear fused Teflon® PFA fluoro-polymer impervious to most media, UniShield™ is a new technology available for sight flow indicators and windows.

## ACCESSORIES

### Sight-Lites

For more accurate readings of indicators under adverse ambient lighting conditions, several models of Sight-Lites are available. Each model comes ready to install and complies with UL standards for hazardous environments.

The Lumenator® XP-2000 Site-Lite

contains a low temperature patented fiber-optic construction that gives it the highest UL hazardous rating of any industrial lighting equipment specifically for sight flows in the industry.



# SIGHT WINDOWS

Jacoby-Tarbox Sight Windows allow effective and economical viewing of tank, pressure vessel and piping system interiors. Models are available for all major Sight Window applications and offer a choice of weld, thread, or bolt-on connections.

## WELD NECK

Weld Neck Sight Windows are welded directly to pipe ends or into tank and vessel walls. They provide a single-position viewing station.



**Style W-5000  
Weld Neck  
Sight Window**

## THREADED

Female Threaded Sight Windows are designed to be turned onto the ends of pipe for viewing in any position.



**Style S-5100  
Threaded Sight  
Window**

## WELD PAD

Weld Pad Sight Windows are designed to be welded directly to tank or vessel walls or covers to become single-position viewing stations. Models are available with flat, cylindrical or spherically shaped pads.



**Style 5200 Weld  
Pad Sight Window**

Connections as listed

**Medium Pressure to 150 PSIG  
Nominal Pressure Rated**

W-5000: Weld Neck  
S-5100: Female Threaded  
5200: Weld Pad  
5200-CYL: Cylindrical Weld Pad  
5200-SPH: Spherical Weld Pad

## PRESSURE VESSEL



**Style 5200-PVQ  
Pressure Vessel  
Sight Window,  
Round**

**Style 5300  
Pressure Vessel  
Sight Window,  
Obround**



Pressure Vessel Sight Windows, round and obround, are fabricated from code metals. They attach to pressure vessels conforming to Section VIII of the ASME Boiler & Pressure Vessel Code. Usable in any orientation, models are available with flat or curved pads. Round models may be specified with UniGlas®, Dual Windows, or UniGlas Dual Windows. Obround models may be specified with Dual Windows.

Weld pad connections

**High Pressure to 600 PSIG\*  
Nominal Pressure Rated**

5200-PVQ: Round, Flat Pad  
5200-PVQCYL: Round, Cylindrical Pad  
5200-PVQSPH: Round, Spherical Pad  
5300-PVQ: Obround, Flat Pad  
5300-PVQCYL: Obround, Cylindrical Pad  
5300-PVQSPH: Obround, Spherical Pad

\*Higher pressures available upon request.

## SECURITY

**Style 5005-DW  
Security  
Sight Window**



Security Sight Windows incorporate the safety features of the patented Factory Mutual® approved Dual Window, resulting in additional protection against stress concentration, thermal shock, corrosion or erosion, over-pressure, and external mechanical forces. Models are available with TFE (Teflon®), PFA or rubber lining.

Bolt-on connection is designed to fit ASME standard flanges or studding outlets with ASME flange connection dimensions. Security Sight Windows do not incorporate an indicator and, therefore, provide single-position viewing.

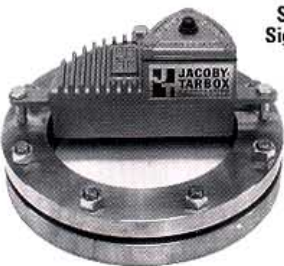
Bolt-on connections

**High Pressure to 600 PSIG**  
5005-DW, Nominal Pressure Rated

**High Pressure**  
5005-DWA, Full ASME Rated

## SIGHT/LITE PORT

**Series 5000  
Sight/Lite Port**



The Jacoby-Tarbox Sight/Lite Port delivers increased visibility wherever sight windows are required. The lite permits both viewing and illumination through a single unit, eliminating the cost of a second port for back lighting. The lite is push-button operated, employs a high-intensity lamp, and is available with Jacoby-Tarbox Sight Window Styles 5200, 5200-PVQ, 5005-DW, W-5000, and S-5100.

For additional information, contact your local representative.



# JACOBY-TARBOX®

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