

9410 - 20 Ave N.W. Edmonton, Alberta, Canada T6N 0A4

Tel: (780) 437-9100 / Fax: (780) 437-7787

July 28, 2025

Attention: Cecylia Garbacz

TECHNICAL STANDARDS & SAFETY AUTHORITY

345 CARLINGVIEW DRIVE TORONTO, ON M9W 6N9

The design submission, Tracking Number 2025-02630, Web Portal Number 2025-S2171, originally received on April 22, 2025 was surveyed and accepted for registration as follows:

CRN: 0F16975.52 **Accepted on:** July 28, 2025

Reg Type: NEW DESIGN Expiry Date: July 03, 2034

Drawing No.: CRN Scope for Jacoby-Tarbox **Fitting type:** SIGHT GLASS WINDOW

Design registered in the name of : CLARK-RELIANCE CORPORATION

The registration is conditional on your compliance with the following notes:

The is the CRN renewal with addition of model W-5500, 59-SWA and TruSan.

As indicated on AB-41 Statutory Declaration or AB-351 Declaration of Conformity form and submitted documentation, the code of construction are ASME B31.3 and ASME B31.1.

- It is our understanding that the fitting(s), included as the scope of this submission, that is(are) subject to the Safety Codes Act shall comply with the requirements of the indicated Standard or Code of Construction on the AB-41 Statutory Declaration or AB-351 Declaration of Conformity as supported by the attached data which identifies the dimensions, materials of construction, press./temp. ratings and the basis for such ratings, and the identification marking of the fittings.
- This registration is valid only for fittings fabricated at the location(s) covered by the QC certificate attached to the accepted AB-41 Statutory Declaration or AB-351 Declaration of Conformity form.
- This registration is valid only until the indicated expiry date and only if the Manufacturer maintains a valid quality management system approved by an acceptable third-party agency, and maintains a valid Certification of Authorization Permit if required by the jurisdiction where manufacturing takes place, until that date.
- Should the approval of the quality management system lapse before the expiry date indicated above, this registration shall become void.

An invoice covering survey and registration fees will be forwarded from our Revenue Accounts.

If you have any question don't hesitate to contact me by phone at (587) 686-9349 or fax (780) 437-7787 or e-mail Wangi@absa.ca.

Sincerely,

WANG, IAN, P. Eng. DOP Cert. No. D00009643

2025-02630 Page 1 of 1



STATUTORY DECLARATION Registration of Fittings

Single or Multiple Fitting Designs within one Fitting Category

I, <u>[</u>	David E Purcel		In this space, show facsimile of manufacturer's logo or trademark as it will appear on the fitting.
of	(name of applicant) Clark-Reliance LLC	(position title) (must be in a position of authority)	JERGUSON Reliance Macoby-tarbox ERNST
o' –		ame of manufacturer)	Penberthy®
loca	ated at 16633 Foltz Parkway, Stro	ongsville, OH 44149 USA	•
sub	solemnly declare that the fittings li ject to the Safety Codes Act ect only one)	Sight Flow Indicators&Sight Windows red	nereunder, which are
\boxtimes	comply with the requirements	of ASME B16.5, B31.1, B31.3 which (title of recognized North American Standard)	specifies the dimensions,
	materials of construction, pre-	ssure/temperature ratings and identification ma	arking of the fittings, or
	are not covered by the provision	ons of a recognized North American standard a	and are therefore
	manufactured to comply with_	atle of code of construction or other applicable document)	s supported by the
	attached data which identifies	the dimensions, materials of construction, pres	ssure/temperature ratings
	and the basis for such ratings,	and the identification marking of the fittings.	
l fur	ther declare that the manufacture	of these fittings is controlled by a quality contr	ol program which has
bee	n verified as described in the belo	w Table as being suitable for the manufacturing	ig of these fittings to the
stat	ed standard, regulation, code, gui	deline or other applicable document. The fitting	gs covered by the
dec	laration for which I seek registration	on are as provided in the Supplementary Shee	t(s) attached.
•	olites Duna amana Vanification and N	lawyfactywing Citae	

Quality Program Verification and Manufacturing Sites

A copy of the Quality Certificate from each manufacturing site must be included

Item #	Product Description, Model or Series	Quality Program	Scope of Certification	Expiry Date	Verifying Organization	Location(s) Plant Name and address
1.	Sight Flow Indicators & Sight windows See Attached for models	ISO 9000	Design, Build, Manufacture	07/01/2028	HSB Registration Services	Clark-Reliance LLC 16633 Foltz Parway, Strongsville, OH 440149
2.						

Tracking #: 2025-02630

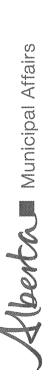




In support of this application, the following information, calculations and/or test data are attached: See Supplied Design Workbooks and Drawings (Signature of the Declarer) DECLARED before me at $\frac{\text{Strongsville}}{\text{(city)}}$ in the $\frac{\text{State}}{\text{of}}$ of $\frac{\text{Othio}}{\text{(province, territor)}}$ this $\frac{\text{33}}{\text{Month)}}$ day of $\frac{\text{Tuly}}{\text{(Month)}}$, $\frac{\text{2025}}{\text{(Year)}}$ (province, territory, or state) Christine MCCOMBS (a Commissioner of Oaths or Notary Public) (a Commissioner of Oaths or Notary Public) CHRISTINE MCCOMBS Notary Public State of Ohio My Comm. Expires Commissione Notary Public 2019 and for: (province, territory, or state) For ABSA Office Use Only: NOTES: To the best of my knowledge and belief, the application meets the requirements of the Safety Codes Act and CSA Standard B51, Part 1, Clause 4.2, and is accepted for registration in Category 2025-02630 **ABSA SAFETY CODES ACT - PROVINCE OF ALBERTA ACCEPTED: 0F16975.52** Registered Date: See acceptance letter for Expiry Date: July 3, 2034 conditions of registration. Date: 2025-07-28 IAN WANG, P. Eng. This stamp and signature have been affixed electronically (Signature of the Administrator/SCO) to this registered design as required by Section 20(1) of the Pressure Equipment Safety Regulation, in accordance The information you provide is necessary only for the administration of the with the Electronic Transactions Act.

Pressure Equipment Discipline

programs as required by the Alberta Safety Codes Act and Regulations in the



(Supplemental Sheet for AB-41) AB-41 2019-08 the pressure equipment safety authority

Table 1** Scone of Fitting Designs

	Reference	Catalogue (pages) or Drawing(s)	See list	
		Design Code(s) of Construction	See list	
	1	Pressure Class(es) / Schedule(s)	See list	
	ressure	At Maximum Temperature	See list	
	Rated Pressure	At Ambient Temperature	See list	
		MDMT	See list	
	Port	Connections and Size Range	See list	
Jesigns		Material of Construction	See list	
lable I scope of ritting Designs	Primary	Pressure Bearing / Retaining Component	Body	
lable I		Item #	See attached	

Table 2 Additional Scope Information

List/Attach Additional Detail and References (Product Configurations, Options, Illustrations, etc.) Example:

Series X Options

See list

** For additional alternatives of Table 1, refer to Form AB-41a, Guide for Completing Form AB-41

HSB Registration Services

Certificate of Registration

This is to certify that:

Clark-Reliance, LLC 16633 Foltz Parkway, Strongsville, OH 44149

Has established and applied a

Quality Management System

for:

Design, Development, Production of Fabricated Metal Products and Design of Filters associated with the Power and Process Industry

Proof has been furnished that the requirements according to ISO 9001:2015

are fulfilled.

Signed on behalf of HSB Registration Services

595 E. Swedesford Road Wayne, Pennsylvania 19087 Validity may be confirmed via email at ISO Registrations@hsb.com

Certificate Number: Q 1718

IAF Code(s): 4,17,18,19

Initial Audit Date: June 6, 2019 Effective Date: July 2, 2025 Expiration Date: July 1, 2028





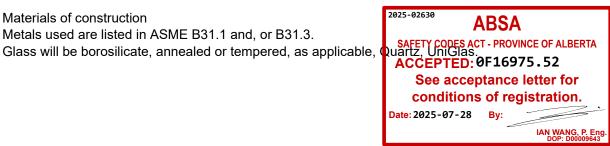


CRN Scope for Jacoby-Tarbox

Bulls-Eye Prod	ducts	Max press	(psig)
100-ST (200/300)	150 psig		psig
100-SA (200/300)	CL150		psig
S-100HPA-CL3 (200/300)	CL300		psig
S-100HPA-CL6 (200/300)	CL600	1500	
S-100HPA-CL9 (200/300)	CL900	2250	. •
S-100HPA-CL15 (200/300)	CL1500	3750	psig
Note: "100", "200", "300" are model ch			
indicator, which is not a pressure-beari			
100 = Flapper, 200 = Drip tube, 300 =	rotor		
910-FA (608/935)	CL150	290	psig
F-910HPA-300 (608/960)	CL300	750	psig
F-910HPA-600 (608/960)	CL600	1500	psig
F-910HPA-900 (608/960)	CL900	2250	
F-910HPA-1500 (608/960)	CL1500	3750	psig
Note: "910", "608", "935", "960" are me			
internal indicator, which is not a pressu	· · · · · · · · · · · · · · · · · · ·		
910 = Flapper, 608 = Drip tube, 935 ar	nd 960 = rotor		
Tubular Prod	ucts		
805-S	up to 150 psig		psig
830-F	up to 150 psig		psig
4000-S	up to 150 psig	150	psig
Sight Windo	ws		
Weld-on			
W-5000, 5200, 5200-PVQ, 5300-PVQ	W-5500 Up to 600 psig	600	psig
Bolt-on			
5005-DW, 5800	Up to CL600	1500	. •
59-SWA	CL150	290	psig
Thread-on			
S-5100, S-5400	150 psig	150	psig
Hygienic			
Hy-Sight	Up to 225 psig	225	psig
TruSan	Up to CL150		psig
UniSan	Up to CL150	250	psig

Materials of construction

Metals used are listed in ASME B31.1 and, or B31.3.



This stamp and signature have been affixed electronically to this registered design as required by Section 20(1) of the Pressure Equipment Safety Regulation, in accordance with the Electronic Transactions Act.

Jacoby-Tarbox Private Label Cross-Reference

	Secondary Brand:	Secondary Brand:		
	Ernst Instruments	Penberthy		
Models	El Models	Pen. Models	Classifier	Max press
Bulls-Eye Products				
100-ST (200/300)	S12B	STW	Nominal	150 psig
100-SA (200/300)	S14TB	SF	CL150	290 psig
S-100HPA-CL3 (200/300)	S16TB-A	SM	CL300	750 psig
S-100HPA-CL6 (200/300)	S16T-B	SH	CL600	1500 psig
S-100HPA-CL9 (200/300)	S16T-C	Not Included	CL900	2250 psig
S-100HPA-CL15 (200/300)	S16T-D	Not Included	CL1500	3500 psig
Note: "100", "200", "300" are model		"S", "D", or "R" may be added		2222 239
changes based on internal indicator, which		for an internal indicator		
s not a pressure-bearing component.		F=Flapper/D=Drip tube/R=Rotor		
100 = Flapper, 200 = Drip tube, 300 = rotor				
910-FA (608/935)	S14FB	SF-F	CL150	290 psig
F-910HPA-300 (608/960)	S16FB-A	SM-F	CL300	750 psig
F-910HPA-600 (608/960)	S16F-B	SH-F	CL600	1500 psig
F-910HPA-900 (608/960)	S16F-C	Not Included	CL900	2250 psig
F-910HPA-1500 (608/960)	S16F-D	Not Included	CL1500	3500 psig
Note: "910", "608", "935", "960" are model		"S", "D", or "R" may be added		1 0
changes based on internal indicator, which		for an internal indicator		
s not a pressure-bearing component.		F=Flapper/D=Drip tube/R=Rotor		
910 = Flapper, 608 = Drip tube				
935 and 960 = rotor				
Tubular Products				
805-S	S18TB	Not Included	up to	150 psig
830-F	S18FB	Not Included	up to	150 psig
4000-S	S22C	Not Included	up to	150 psig
Sight Windows				
Weld-on				
W-5000, 5200, 5200-PVQ				
5300-PVQ, W-5500	W12-F	Not Included	up to	600 psig
Bolt-on			'	1 0
5005-DW, 5800	W11B	Not Included	CL150-600	1500 psig
Thread-on	–			1200 2319
S-5100	W11-FN	Not Included	Nominal	150 psig
S-5400	W16B	WTSL	Nominal	150 psig
J-0-100	טטו זיין	V V OL	1 40111111ai	100 psig
Hygionic				
Hygienic	S28	Not Included	lup to	22E nois
Hy-Sight		Not Included	up to	225 psig
Tru-San	S29	Not Included	up to	250 psig
Uni-San	W14B	Not Included	up to	250 psig

Materials of construction

Metals used are listed in ASME B31.1 and, or B31.3.

Glass will be borosilicate, annealed or tempered, as applicable, Quartz, UniGlas.

JACOBY-TARBOX®

A PRODUCT OF CLARK-RELIANCE















JACOBY-TARBOX®

100 years of Quality!



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

Compliance..."Out of the Box"





B2.1

Section VIII B16.5

B31.1

B31.3

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NACE®

ASME BPE

ASTM BioProcessing Equipment

US, Pharmacopeial Convention





DIN

PED

CRN



JIS

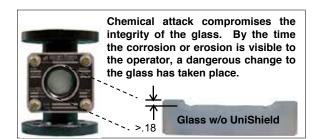
MIL

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



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



Sight Flow Indicators

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

Horizontal Upward Vertical Flow



Medium Pressure
- Class 150

High Pressure Class 300 / 600 Class 900 / 1500 910-FA

F-910HPA -300 /600 F-910HPA -900 / 1500

Any Flow Direction



935-FA

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

Downward Vertical Flow "less than full" horizontal lines



608-FA

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



Nominally Rated

- 150 psig (10.3 Bar) 100-ST



300-ST



200-ST

Full ASME

- Class 150

- CL300 / CL600 S

S-100HPA-CL3 / -CL6

- CL900 / CL1500 S-100HPA-CL9 /-CL15

100-SA

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

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

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





910-FA (NF) shown

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

Gas Indicator Add "GI" to any Flapper model Ultra-Low Volume Gas Flow



100-ST-GI 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)

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 ½" to 12"
- Must isolate from mechanical strains on pipelines





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

910-FA (NF) With

34" Coupling

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



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

Bulls-eye style with UniSan windows

Easy installation, body will match

system design Hygienic Clamp or

Hygienic Units

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

Hy-Sight[™]

Hy-Sight

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





6000-C

UNI-SAN®

TRU-SAN®

- Protect process from contamination while viewing
- No breakage concern

butt weld ends

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**
- 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

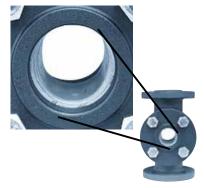
Linings

- Fluoropolymer lined sight flow indicators and More

- Corrosion-resistant linings: fluoropolymers such as PFA, Edathon, ETFE, and more
- **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



910-FA-TEFLON®
Isostatically Molded Teflon® Liner



830-F-TFE
Tubular unit with
replaceable PTFE liner
(Shown with optional external impact shield)

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



- 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
- Pressure range: FV to 150 psig (10.3 bar)
- Specialty UniGlas sight plugs available for higher pressures



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 \rightarrow 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,



In-Tank Eductors

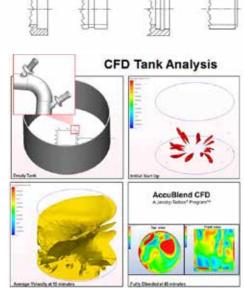
- Use less energy More efficient than nozzles alone. to Mix, blend, suspend solids and heat
- **Decrease maintenance cost** No moving parts
- Smaller pump required Amplifies pump capabilities
- Heat more quietly and efficiently than sparging



Connection Offerings Your Application Requires

CFD Analysis Available

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





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JACOBY TARBOX®

16633 FOLTZ PARKWAY STRONGSVILLE, OH 44149 USA

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SIGHT FLOW INDICATOR STYLE 5500

SECTION: **T400** BULLETIN: **T400.60**

DATE: 05/18/2022 SUPERSEDES: 10/25/2018 FILE NO.: T400-60

DRAWN: MWS CHECKED: DEP

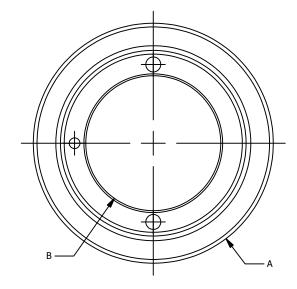
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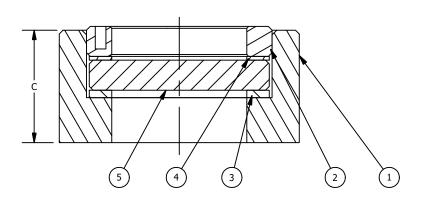
	PARTS LIST								
PIECE NO.	PART NAME	QTY.		STANDARD DESIGN MATERIALS					
1	BODY	1		ASTM A576 (CARBON STEEL)					
	(SEE NOTE (1))			ASTM A276 (316L SS)					
2	RETAINER (2)	1		C360 (BRASS)					
3	WINDOW (3)	1		TEMPERED BOROSILICATE					
4	SEAL GASKET (4)	1		NEOPRENE					
5	CUSHION GASKET	1		FIBER					

(1) ADDITIONAL ALLOYS AVAILABLE PER REQUEST							
(2) 316L SS AVAILABLE PER REQUEST							
(3) ADDITIONAL WINDOW OPTIONS AVAILABLE							
(4) COMMON OF	(4) COMMON OPTIONAL SEAL MATERIALS AVAILABLE						
(5) COMMON OPTIONAL SEAL MATERIALS AVAILABLE							
PTFE	GRAPHITE	FIBER					

PRESSURE / TEMP RATINGS						
PSIG / `F (BAR / `C)						
TEMP	PRESS	SURE				
'F ('C)	STEEL 316L SS					
-20 TO 100	150 (10.3)	150 (10.3)				
150 (66)	150 (10.3)	150 (10.3)				
200 (93)	150 (10.3)	150 (10.3)				
250 (121)	150 (10.3)	150 (10.3)				
300 (149)	150 (10.3)	150 (10.3)				
350 (177)	150 (10.3)	150 (10.3)				
400 (204)	150 (10.3)	150 (10.3)				
450 (232)	150 (10.3)	150 (10.3)				
500 (260)	150 (10.3)	150 (10.3)				

DIMENSIONS									
SIZE	SIZE A			В		С		APPROX. WEIGHT	
IN	IN	mm	IN	mm	IN	mm	LBS	KGS	
#1	1.50	38	0.63	16	0.81	21	0.50	0.23	
#2	1.75	45	0.88	22	0.81	21	0.50	0.23	
#3	2.00	51	1.13	29	0.94	24	0.75	0.34	
#4	2.25	57	1.25	32	1.00	25	0.80	0.36	
#5	2.50	64	1.50	38	1.31	33	1.50	0.68	
#6	3.50	89	2.25	57	1.44	37	2.50	1.13	
#7	4.25	108	2.75	70	1.56	40	3.75	1.70	





JACOBY • TARBOX®

A PRODUCT OF CLARK-RELIANCE

TRU-SAN® 7000-C CLAMP CONN'S Section: T400

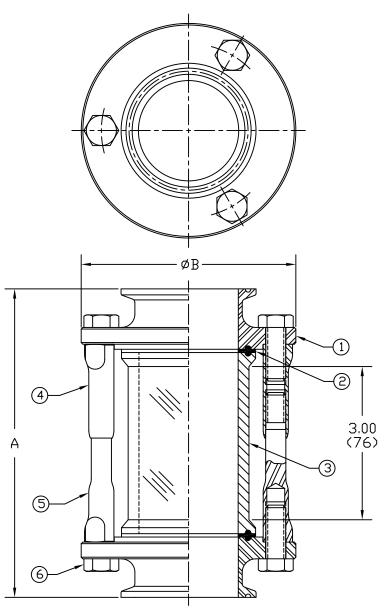
Bulletin: T400.23

Date: 02/19/25

Supersedes: 12/01/00

DRAWN: TFK DATE: 9/15/95 SCALE: NONE FILE:T400-23.DWG

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ITEM	NAME	QTY.	MATERIAL
1	HEAD	2	
2	SANITARY GASKET	2	
3	OPTICAL CYLINDER	1	B□R□
4	UPPER SPACER	3	316LSS
5	LDWER SPACER	3	316LSS
6	BOLT	6	31655

SPECIFICATIONS

Materials:

Heads: 304 SS, 316L SS to ASTM A276

Window: Annealed Borosilicate Glass (Type 1)

: Acrylic (Optional)

Gaskets: USP Class VI Gaskets

Fasteners: 304 SS

Surface Finish:

Internal:

32 Ra (150 Grit, .8 micrometers) Standard (Finer finishes, and/or electropolishing available upon request.)

External:

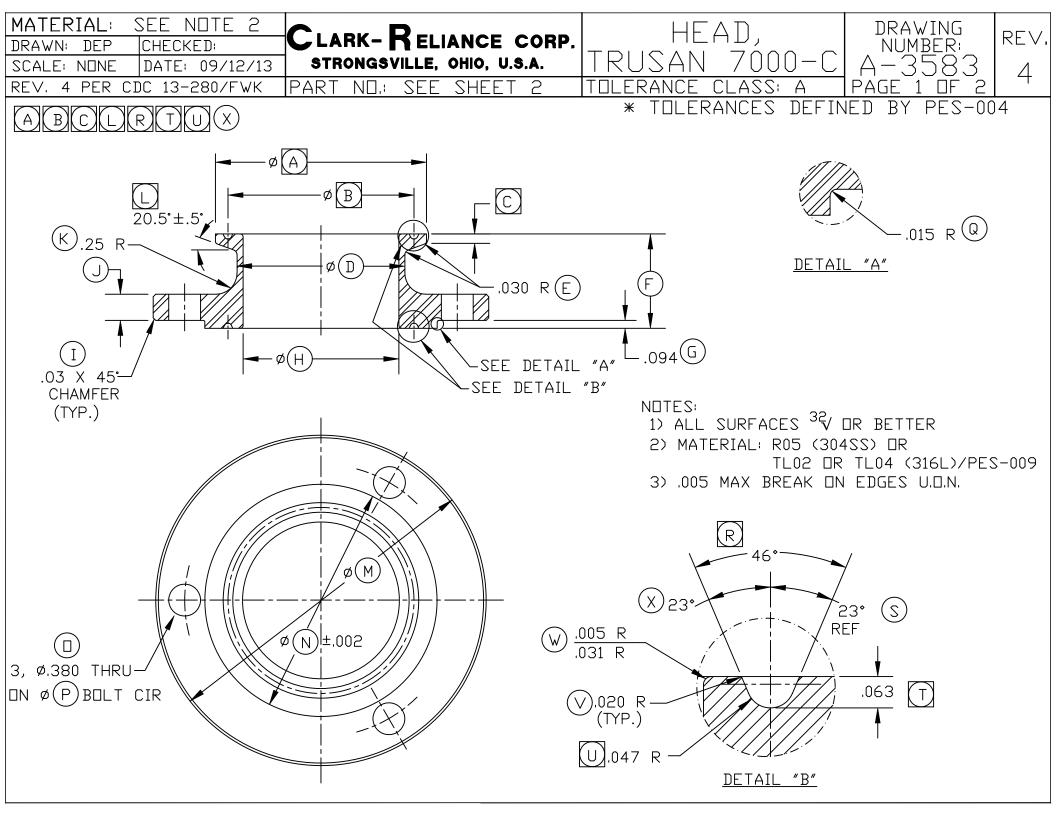
32 Ra (150 Grit, .8 micrometers) Standard

Optional Features

Special lengths available up to 48 inches ("A" Dim) Pressure ratings decrease with additional length Model: 7000-CL

*SIZE	A INCHES (mm)	B INCHES (mm)	PRESSURE (MAX)	
1/2	6.25 (159)	3.75 (95)	150 PSIG	
3/4	6.25 (159)	3.75 (95)	150 PSIG	
1	5.75 (146)	3.75 (95)	150 PSIG	
1 1/2	5.75 (146)	3.75 (95)	150 PSIG	
2	5.75 (146)	4.00 (102)	150 PSIG	
2 1/2	6.38 (162)	4.75 (121)	140 PSIG	
3	6.50 (165)	5.50 (140)	110 PSIG	
4	7.25 (184)	6.88 (175)	110 PSIG	

- * 1/2 & 3/4 SIZE FOR USE ON INCLINE NO LESS THAN 15 DEGREES
- * SIZES ARE STANDARD TUBE D.D.'S IN INCHES



MATERIAL: SEE SHEET 1
DRAWN: DEP | CHECKED:

REV. 4 PER CDC 08-025/FWK

DATE: 09/12/13

SCALE: NONE

CLARK-RELIANCE CORP.

STRONGSVILLE, OHIO, U.S.A.

PART NO.: SEE TABLE

HEAD, TRUSAN 7000-C Tolerance class: a DRAWING NUMBER: A-3583

REV.

* TOLERANCES DEFINED BY PES-004

PART NO.	SIZE	А	В	С	D	F	Н	J	М	N	Р
TA-3583-1	1	1.984 +.008 005	1.718	.112	1.000	1.12	.870	.31	3,69	2.520	3.000
TA-3583-2	1-1/2	1.984 +.008 005	1.718	.112	1.500	1.12	1.370	.31	3,69	2.520	3.000
TA-3583-3	2	2.516 +.008 008	2.218	.112	2.000	1.12	1.870	.31	3.94	2.770	3.250
TA-3583-4	2-1/2	3.047 +.008008	2.781	.112	2.500	1.44	2.370	'38	4.69	3.395	3.875
TA-3583-5	3	3.579 +.010 010	3,281	.112	3.000	1.50	2.870	.44	5.44	4.020	4.500
TA-3583-6	4	4.682 +.015 -015	4.344	.112	4.000	1.88	3.834	.56	6.82	5.395	5.875
TA-3583-7	1/2		SEE DRAWING A-4222								
TA-3583-8	6	6.570 +.030 030	6.176	.220	6.000	1.88	5.782	.56	7.94	6.770	7.250

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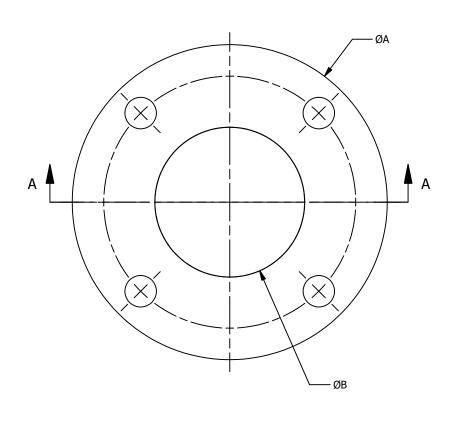
SIGHT WINDOW 59-SW SERIES

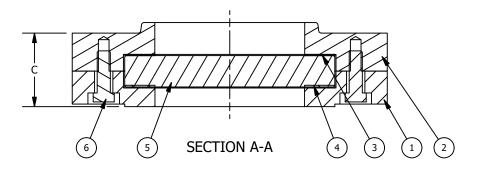
SECTION: **T400** BULLETIN: **T400.63**

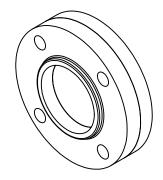
DATE: **3/25/2024**SUPERSEDES: **3/25/2024**FILE NO.: **T400-63**

DRAWN: MWS | CHECKED: DEP

SCALE: N/A







	BILL OF MATERIAL								
NO.	NAME OF PART	QTY.	MATERIAL						
1	BODY	1	SEE BELOW						
2	RETAINER	1	SEE BELOW						
3	CUSHION GASKET	1	FIBER, IFG5500						
4	SEAL GASKET	1	SEE BELOW						
5	GLASS	1	BOROSILICATE GLASS						
6	BOLT - 5/16-18 UNC	4	SEE BELOW						

STANDARD DESIGN MATERIALS

BODY: CARBON STEEL PER ASTM 150 / ASME SA105 316/316L SS PER ASTM A182 GR. F316/F316L

RETAINER: CARBON STEEL PER ASTM 150 / ASME SA105 316/316L SS PER ASTM A182 GR. F316/F316L

SEAL GASKET: ADDITIONAL MATERIALS AVAILABLE UPON REQUEST

FASTENERS: CARBON STEEL GR. 5 316SS PER ASTM A193 B8M

FLANGE SIZE	Α	В	С
1/2	3.500	1.125	0.752
3/4	3.875	1.125	0.876
1	4.250	1.312	1.000
1-1/2	5.000	2.062	1.252
2	6.000	2.062	1.376
2-1/2	7.000	3.562	1.626
3	7.500	3.562	1.752
4	4 9.000		1.752
6	11.000	7.000	1.876

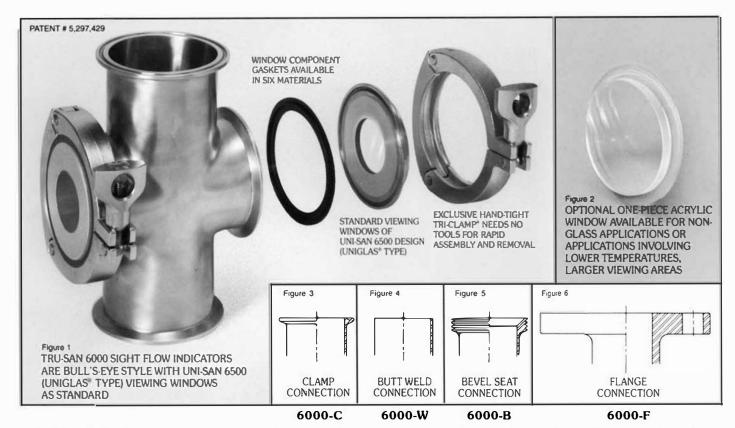
JACOBY · TARBOX® H Y G I E N I C S^M



Sight Flow Indicators Tru-San[™] 6000: Sanitary **USDA Dairy Accepted**

Section: T100 Bulletin: T100.45 Date: 8/03

Supersedes: T100.45 (98)



SAFE, DURABLE, CLEAN VIEWING OF LIQUID, POWDER AND BULK **SOLID SYSTEM FLOWS**

Jacoby-Tarbox TRU-SAN 6000 Sight Flow Indicators are manufactured specifically for food handling, pharmaceutical and other processing systems where cleanliness and sanitary considerations are paramount.

All TRU-SAN 6000 indicators comply with 3-A Fittings Standards and will provide excellent, clear viewing of liquids, powders and many bulk solids. These are the industry's first bull's-eye style sight flow indicators to earn the "USDA" Dairy Accepted" designation.

Viewing is direct, using either of two windows which allow full see-through observation. (See Bulletin for TRU-SAN 7000 sanitary models featuring "optical cylinder" viewing.)

WIDE VARIETY OF MODELS TO **MEET YOUR SPECIFIC SYSTEM** REQUIREMENTS

Standard & Special Sizes Standard sizes (Tubing ODs), are 1", 11/2", 2", 21/2", 3", and 4". Other tubing sizes are available as special orders.

Choice of Connections Adaptability to virtually any system is assured by a choice of four connection styles: clamp, butt weld, bevel seat, flange.

Quality Construction Materials TRU-SAN 6000 indicators are manufactured with all stainless steel metal components. Stainless steel bodies are finished to 150 grit (32 Ra) or better for smooth, easy-to-clean surfaces.

Gaskets To Match Applications TRU-SAN 6000 models feature black Buna gaskets as standard. Other gasket

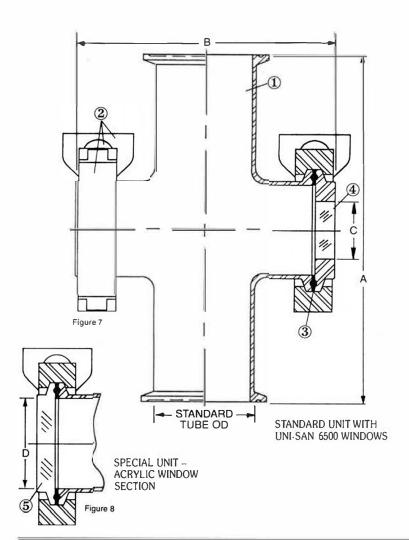
materials are available and should be carefully specified to match system temperatures and media. Note the Gasket Specification Guide provided.

Choice Of Viewing Windows Viewing windows of UNI-SAN 6500 are standard on all TRU-SAN 6000 indicators. Features include outstanding safety and service life plus high temperature tolerance. They are autoclavable. Acrylic windows may be specified where lower temperatures or glass restrictions apply.

GASKET SPECIFICATION GUIDE · TRU-SAN™ 6000 INDICATORS

At 150 PSIG (10.3 BAR)								
GASKET MATERIAL	SPECIFICATION CODE	MAXIMUM TEMPERATURI						
Buna, Black	BN	250° F	121°C					
Buna, White	BNW	250° F	121°C					
EPDM	EP	250°F	121°C					
Viton	V	350°F	177°C					
PTFE	D	450°F	232° C					
Silicone	J	450°F	232°C					
Polyethylene	Р	180°F	82° C					

UNITS WITH ACRYLIC WINDOWS: MAX. TEMPERATURE 180° F (82° C)



TRU-SAN™ 6000: DIMENSIONS

Standard Tube OD (In.)			Inches	D Inches (mm)
1	5.00 (127)	4.40 (112)	0.90 (23)	0.86 (22)
11/2	5.50 (140)	4.40 (112)	0.90 (23)	1.36 (35)
2	7.00 (178)	4.40 (112)	1.20 (30)	1.86 (47)
21/2	7-00 (178)	5.26 (134)	1.50 (38)	2.36 (60)
3	7.50 (191)	5.40 (137)	2.00 (51)	2.86 (73)
4	9.00 (229)	6.56 (167)	3.00 (76)	3.81 (97)

TRU-SAN™ 6000: MATERIALS

- 1 Tube Body: 316L Or 304 Stainless Steel
- 2 Tri-Clamp Assembly: 304 Stainless Steel
- 3 Gasket: Various (See Table)
- 4 Window Component:

Standard – UNI-SAN 6500 (Glass

Fused to Stainless Steel or Hastelloy C Ring)

5 - Window Component:

Special – Acrylic or Polycarbonate (One Piece Construction)

ONLY FROM JACOBY-TARBOX: UNI-SAN™ 6500* WINDOWS PROVIDE MAXIMUM STRENGTH AND IMPACT RESISTANCE

UNI-SAN 6500 sight flow indicator windows are stronger and safer than any other type available. Unlike a tempered glass window, UNI-SAN 6500 is resistant to failure from scratches, chipping and surface pitting.

*UniGlas® type

UNI-SAN 6500 is made by heating and cooling borosilicate glass contained inside a metal ring. The metal ring shrinks more than the glass, thereby producing a uniform high compression within the glass that results in unmatched resistance to temperature, pressure and impact failures associated with severe applications.

UNI-SAN 6500 windows employ no gaskets, sealing materials or adhesives.

For lower temperature, non-glass applications, one-piece acrylic windows are available in all models.



HOW TO SPECIFY TRU-SAN™ 6000 SIGHT FLOW INDICATORS

Specifying the TRU-SAN 6000 model to meet your system requirements is facilitated by determining the following application information:

- Indicator Model Size: 1" - 1½" - 2" - 2½" - 3" - 4"
- Connection Type: Clamp - Butt Weld -Bevel Seat - Flange
- Gasket Type:
- (See Specification Guide Provided)
 Window Material:
- UNI-SAN 6500 (Standard) Acrylic Authorization: 3A per standard 65-00
- USDA Acceptance

NOTE: Jacoby-Tarbox shall not be liable for damages of any kind resulting in part from failure to install its products in accordance with all applicable codes and/or state and local regulations, improper application and/or maintenance.



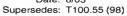


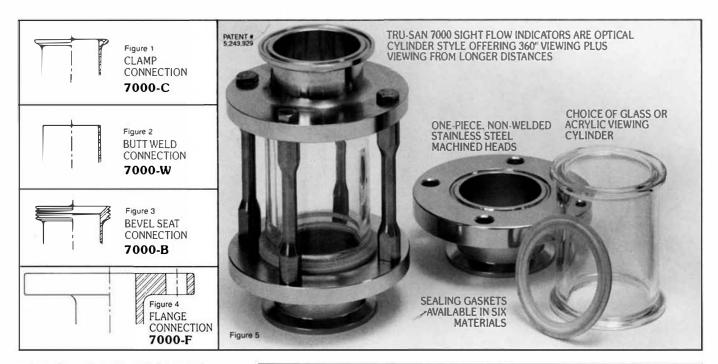
JACOBY-TARBOX® H Y G I E N I C S™



Sight Flow Indicators Tru-San™ 7000: Sanitary **USDA** Dairy Accepted

Section: T100 Bulletin: T100.55 Date: 8/03





LARGE-AREA VIEWING OF LIQUID, POWDER AND BULK SOLID SYSTEM FLOWS. CONTAMINATION-FREE.

Jacoby-Tarbox TRU-SAN 7000 Sight Flow Indicators are manufactured specifically for food handling, pharmaceutical and other processing systems demanding cleanliness and maximum sanitary conditions.

All TRU-SAN 7000 indicators comply with 3-A Fittings Standards and will provide excellent, clear, and distant viewing of liquids, powders and many bulk solids. These are the industry's first optical cylinder style sight flow indicators to earn the "USDA Dairy Accepted" designation.

These are also the industry's first sight flow indicators to be authorized by the 3A Sanitary Standards Council to affix the 3A logo.

Viewing is direct from anywhere within a 360° radius. Depending on system media and flow rates, viewing from relatively distant locations is possible, as compared with bull's-eye style indicators presented in the Bulletin for TRU-SAN 6500.

GASKET SPECIFICATION GUIDE • TRU-SAN™ 7000 INDICATORS

	At 150 PSIG (10.3 BAR)
GASKET MATERIAL	SPECIFICATION CODE	MAXIMUM TEMPERATURE
Buna, Black	BN	250°F 121°C
Buna, White	BNW	250°F 121°C
EPDM	EP	250°F 121°C
Viton	V	350°F 177°C
PTFE	D	450°F 232°C
Silicone	J	450°F 232°C
Polyethylene	P	180°F 82°C

UNITS WITH ACRYLIC WINDOWS: MAX. TEMPERATURE 180° F (82° C)

MODEL SELECTION OFFERS CHOICES IN SIZE, **CONNECTIONS, CYLINDER** AND GASKETS

Standard & Special Sizes Standard sizes (Tubing ODs) are 1", 11/2", 2", 21/2", 3", and 4". For Schedule 5 pipe, consult factory.

Choice Of Connections

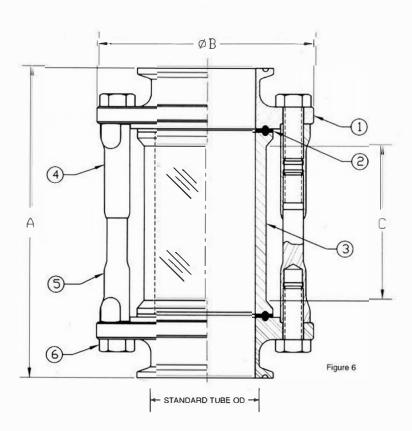
Adaptability to virtually any system is assured by a choice of four indicator connection styles: sanitary clamp, butt weld, bevel seat or flange.

Quality Construction Materials

TRU-SAN 7000 indicators are manufactured with all stainless steel metal components. Stainless steel heads are finished to 150 grit (32 Ra) or better for smooth, easy-to-clean surfaces. Optical cylinders are available in either borosilicate glass or acrylic.

Gaskets to Match Applications

TRU-SAN 7000 models feature white Buna gaskets as standard. Other gasket materials are available and should be carefully specified to match system temperatures and media. Note the Gasket Specification Guide provided.



TRU-SAN™ 7000: DIMENSIONS

Standard Tube OD (In.)	OD Inches Inches		C Inches (mm)		
1 -	5.75 (146)	3.75 (95)	3.00 (76)		
1 1/2	5.75 (146)	3 75 (95)	3.00 (76)		
2	5.75 (146)	4.00 (102)	3.00 (76)		
21/2	6.38 (162)	4.75 (121)	3.00 (76)		
3	6.50 (165)	5.50 (140)	3.00 (76)		
4	7.25 (184)	6.88 (175)	3.00 (76)		

*Dimensions given are for Clamp and Buttweld units only. For Bevel Seat and Flange unit dimensions, consult factory.

 1 - Heads: 304 Stainless Steel, Optional 316L Stainless Steel, Standard

2 - Gasket: Various (See Table)

3 – Cylinder: Borosilicate Glass (Maximum 450°F)
 Acrylic (Maximum 180°F)

4 - Spacer: 316L Stainless Steel5 - Bolts: 316 Stainless Steel

INSTALLATION AND APPLICATION DATA

TRU-SAN 7000 Sight Flow Indicators are designed specifically for sanitary system applications. However, the extended viewing area achieved with the "optical cylinder" design mandates that these models be installed in sanitary systems where mechanical strains on pipe lines are not present. Although better adapted to vertical installation, TRU-SAN 7000 models can be installed horizontally as well.

HOW TO SPECIFY TRU-SAN™ 7000 SIGHT FLOW INDICATORS

Specifying the TRU-SAN 7000 model to meet your system requirements is facilitated by determining the following application information:

- Indicator Model Size: 1" - 1½" - 2" - 2½" - 3" - 4"
- Connection Type: Clamp - Butt Weld -Bevel Seat - Flange
- Gasket Type: (See Specification Guide Provided)
- Window Material: Borosilicate Glass • Acrylic
- Authorization: 3A per standard 65-00
- USDA Acceptance

NOTE: Jacoby-Tarbox shall not be liable for damages of any kind resulting in part from failure to install its products in accordance with all applicable codes and/or state and local regulations, improper application and/or maintenance.

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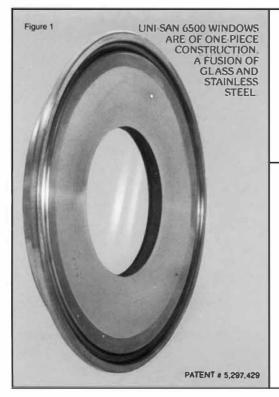
JACOBY-TARBOX®

HYGIENICST



Uniglas® Type Sight Windows Uni-San™ 6500: Sanitary

Section: T100 Bulletin: T100.50 Date: 8/03 Supersedes: T100.50 (98)



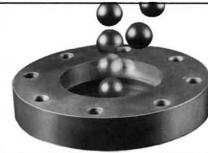
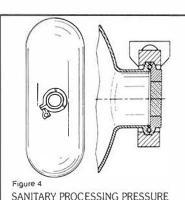


Figure 2 EXTRAORDINARY STRENGTH A 2.2 LB. STEEL BALL WAS DROPPED FROM 10 FEET (1 KILOGRAM FROM 3.05 METERS) TO CRACK A UNIGLAS TYPE WINDOW AT RATED PRESSURE. ONLY SLIGHT WEEPAGE. WITH NO WINDOW BLOWOUT OR FAILURE, RESULTED. UNI-SAN 6500 WINDOWS

ARE OF UNIGLAS TYPE DESIGN.





MAXIMUM SAFETY AND STRENGTH IN SIGHT WINDOWS FOR SANITARY APPLICATIONS

Jacoby-Tarbox is industry's exclusive supplier of UNI-SAN 6500 viewing windows and TRU-SAN sight flow indicators. UNI-SAN 6500 is the result of a technologically advanced process which actually fuses glass to metal. The fusion produces a window of unmatched strength, allowing greater resistance to common causes of window failure and thereby providing today's safest window design.

All surfaces, including sealing surfaces, are finished to comply with 3-A Fittings Standards.

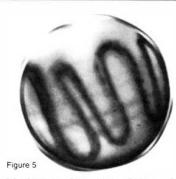
One-Piece Construction

The UNI-SAN 6500 component is a single unit of fused glass and metal. Competitive designs normally require, (1) lamination of multiple glass discs which become overly thick and lower

safety at higher temperatures, and (2) additional shims, packings, retainer rings or adjusting screws for proper installation. With UNI-SAN 6500, windows are homogenous, thinner and installation is easier with no undue assembly or adjustments required.

FUSION TECHNOLOGY DELIVERS UNMATCHED GLASS PROPERTIES

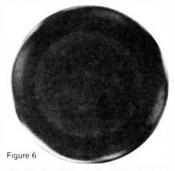
The UniGlas process involves heating and cooling glass inside a stainless steel ring. When the glass and metal ring are heated, fusion occurs as the ring shrinks more than the glass. In addition, high compressive stresses are created uniformly throughout the glass, resulting in unmatched resistance to failure from impact and cracking. UniGlas has been thoroughly tested to ensure the utmost in reliable performance even in conditions not normally encountered in process lines. UNI-SAN 6500 windows are of UniGlas type design.



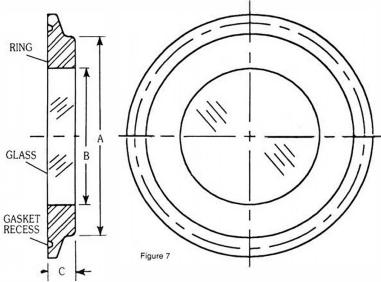
VESSELS CAN BE FITTED WITH

UNI-SAN 6500 SIGHT WINDOWS.

BOROSILICATE GLASS STRESS PATTERN



UNIFORM UNIGLAS STRESS PATTERN



UNI-SAN™ 6500 WINDOWS **DIMENSIONS:**

Standard Tube OD (In.)	A Inches (mm)	B Inches (mm)	C Inches (mm)		
1	1.60 (41)	0.90 (23)	0.75 (19)		
11/2	1.60 (41)	0.90 (23)	0.75 (19)		
2	2.00 (51)	1.20 (30)	0.75 (19)		
21/2	2.50 (64)	1.50 (38)	0.75 (19)		
3	3.00 (76)	2.00 (51)	0.75 (19)		
4	4.00 (102)	3.00 (76)	0.75 (19)		

SIZES:

For TRU-SAN 6000 Indicators

Tube OD - 1" Through 4", Standard Schedule 5 Pipe, Consult Factory Larger Sizes, Consult Factory

For Pressure Vessel Applications
Tube OD - 1" Through 4", Standard Schedule 5 Pipe, Consult Factory Larger Sizes, Consult Factory

MATERIALS:

Ring: Stainless Steel, ASTM A240, A479, A182,

Hastelloy C (B574, B575)

Gasket: Various (See T100.45 or T100.55)

UNI-SAN™ 6500 Window	Maximum	Maximum		
Classification	Pressure	Temperature		
150	150 PSIG (10.3 BAR)	600°F		

UNIGLAS® TYPE WINDOWS ARE AVAILABLE ONLY FROM JACOBY-TARBOX

Jacoby-Tarbox features UNI-SAN 6500 windows as standard in sight windows and sight flow indicators used in sanitary applications as well as in other industries. A complete line of Jacoby-Tarbox products is distributed world-wide to meet routine as well as severe window and flow indicator applications.

65-00



UNI-SAN 6500 AVOIDS FAIL URES FROM UNEVEN STRESS CONCENTRA-TIONS THAT RESULT FROM MECHANICAL MOUNTING HARDWARE OTHER GLASS REOUIRES



UNI-SAN 6500 AVOIDS FAILURES FROM THERMAL SHOCK DUE TO THE INHERENT RESISTANCE VALUE OF ITS UNIFORM HIGH COMPRESSION



Figure 10

UNI-SAN 6500 AVOIDS CORROSION EROSION **FAILURES BECAUSE ITS** ANNEALED SURFACES ARE MORE RESISTANT TO ATTACK



UNI-SAN 6500 AVOIDS FAILURES FROM MECHANICAL FORCES WITH ITS EXCEPTIONAL HIGH STRENGTH CHARACTERISTICS

HOW TO SPECIFY UNI-SAN™ 6500 WINDOWS

For Sanitary Sight Flow Indicators, New Or To Retrofit **Installed Indicators**

UNI-SAN 6500 windows are standard on all TRU-SAN 6000 indicator models. Refer to Catalog Section T100.45 for a complete presentation on model choices and model specification information.

For Sight Windows In Vessel **Applications, New Or To Retrofit Existing Vessel** Windows

UNI-SAN 6500 sight windows for vessel applications can be specified by contacting your local Jacoby-Tarbox representative or by contacting the factory direct.

NOTE: Jacoby-Tarbox shall not be liable for damages of any kind resulting in part from failure to install its products in accordance with all applicable codes and/or state and local regulations, improper application and/or maintenance.





CLEANABILITY MATTERS

Hygienic Sight Flow Indicators

Achieve controlled intrusion meeting ASME-BPE's strictest requirements by employing

- ASME BPE dimensions and design principles
- Precision-Bore borosilicate glass
- Tightly toleranced EHEDG inspired O-ring capture

MAXIMIZE YOUR VIEW

Hy-Sight four window design, largest view of any slim, low-profile sight flow indicator

- Provides maximum process visibility
- Superior view in any orientation

For custom lengths, see Full View Hy-Sight (T100.62)

MAXIMIZE PRODUCTION

- Less product "hold-up" at transition point
- Shorten cleaning cycles and prevent product loss
- Surpass your CIP & SIP requirements

NO-GALL THREADS

- ACME threads
- Eliminate potential for cross-threading
- Easy maintenance

POSITIVE STOP DESIGN

- Eliminates over-compression of O-ring into tube bore
- No exposed threads to trap debris

HIGHEST PRESSURE RATING

- Highest safety factor versus system design pressure
- Replace bulls-eye units improving cleanability while saving space and cost

"The Jacoby-Tarbox Hy-Sight has the best transition point I have ever seen, or felt, in a hygienic sight flow indicator."

–Lead System DesignerMajor Hygienic Systems Packager



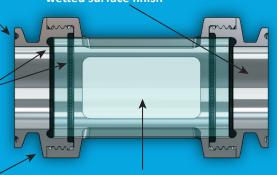
JACOBY-TARBOX® **HY-SIGHT**™

Hygienic Clamp Connections According to ASME-BPE

USP # †@
7) and ADI
Compliant seals
and locating
O-rings

Individual components marked for full traceability

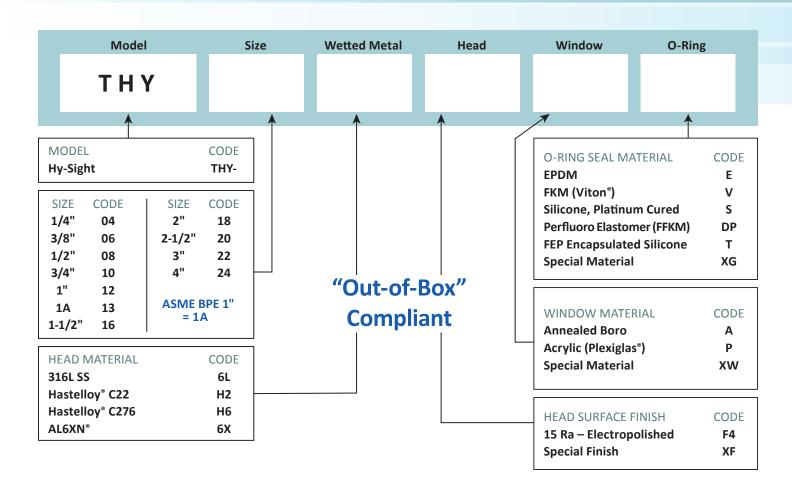
ASME-BPE SF4 (15Ra μin, .38μm Mechanical and Electropolished) wetted surface finish

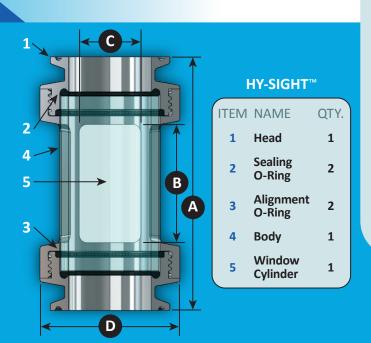


Precision-Bore Type 1 Borosilicate Glass with flame polished ends to improve surface finish and sealability

JACOBY-TARBOX®
H Y G I E N I C S™

Specify Your Hy-Sight





Size* Tube OD		A GTH	B VIEW C VIEW D LENGTH WIDTH UNIT OD					NIT GHT	MAX PRESSURE			
	IN	mm	IN	mm	IN	mm	IN	mm	Lb	Kg	psi	Bar
1/4"	2.6	65	0.5	12.6	0.2	6.0	0.9	24	0.33	0.15	300	20.7
3/8"	2.6	65	0.5	11.7	0.4	9.0	0.9	24	0.40	0.18	300	20.7
1/2"	3.0	76	0.9	21.9	0.4	10.0	1.2	30	0.47	0.21	300	20.7
3/4"	3.4	87	1.2	32	0.6	14	1.5	37	0.58	0.26	250	17.2
1A	3.6	91	1.5	37	0.6	16	1.8	46	0.82	0.37	200	13.8
1"	3.6	91	1.5	37	0.6	16	1.8	46	1.09	0.49	200	13.8
1-1/2"	4.1	105	1.9	49	1.0	26	2.3	59	1.19	0.54	150	10.3
2"	4.7	120	2.5	64	1.4	35	2.9	73	1.62	0.74	125	8.6
2-1/2"	5.9	151	3.7	94	1.8	46	3.5	89	2.52	1.14	125	8.6
3"	6.9	175	4.7	118	2.1	54	4.0	101	1.44	3.18	110	7.6
4"	7.9	200	5.6	144	2.8	70	5.0	126	5.02	2.28	90	6.2

^{*}Hygienic clamp dimensions are in accordance with ASME-BPE, shown in inches

CLA638 Bulletin: T100.60 (02/20)

JACOBY TARBOX®

CLEANABILITY MATTERS

Uni-San® Hygienic Sight Windows

UniGlas[®] and Uni-San[®] Windows – More than 40 Years of unparalleled success in the toughest, most challenging services

SEE YOUR PROCESSES WITH REASSURANCE OF...

- One-piece design
- Crevice free transition
- Proven, traceable materials

SEE PROCESS ANYWHERE

- Clamp to any Hygienic clamp connection
- Turn any ferrule (on a tank, or in a line) into a viewing window or light port

MAXIMIZE PRODUCTION

- Shorten cleaning cycles and prevent product loss
- Surpass your CIP & SIP requirements
- If required, may be mechanically cleaned and placed back in service
- Validate system performance

HIGHEST RATINGS

- Highest safety factor versus system design pressure
- Pressure Ratings up to 360 psig (25 Bar)
- Temperature ratings up to 536 F (280 C) and down to -22 F (-30 C) Duplex and 572 F (300 C) to -76 F (-60 C) Hastelloy®



with LED Illuminator

JACOBY-TARBOX® **UNI-SAN®**

Hygienic Clamp Connections

According to ASME-BPE



FRONT (Atmosphere)

Type 1

Borosilicate Glass

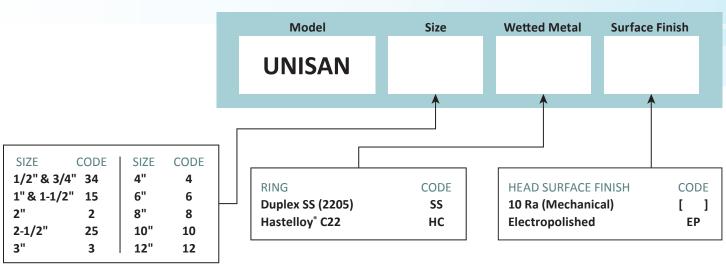
10Ra μin (.25Ra μm) Mechanical wetted surface finish Note: Electropolish available

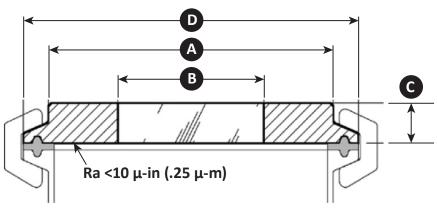


Duplex SS (Standard) Note: Other materials available

JACOBY-TARBOX® H Y G I E N I C STM

Specify Your Uni-San® Hygienic Sight Windows





Size* Tube OD	IN	A mm	B (V IN	IEW) mm	C (TI	HICK)	D (OD) mm	WEI Lb	GHT Kg		AX SURE Bar
1/2"&3/4"	0.7	18	0.4	10	0.4	10	0.984	25.00	0.33	0.15	360	24.8
1"&1-1/2"	1.6	41	1.0	25	0.4	10	1.984	50.39	0.40	0.18	230	15.9
2"	2.0	52	1.2	30	0.4	10	2.516	63.91	0.47	0.21	230	15.9
2-1/2"	2.5	63.5	1.4	35	0.4	10	3.047	77.39	0.58	0.26	230	15.9
3"	3.0	76	1.8	45	0.4	10	3.579	90.91	0.82	0.37	150	10.3
4"	4.0	101	2.2	55	0.5	12	4.682	118.92	1.09	0.49	150	10.3
6"	6.0	152	3.0	75	0.6	16	6.570	166.88	1.19	0.54	85	5.9
8"	7.8	198	3.9	100	0.7	18	8.563	217.50	1.62	0.74	85	5.9
10"	9.6	245	5.1	130	0.8	20	10.551	268.00	2.52	1.14	85	5.9
12"	11.8	300	5.9	150	0.9	22	12.571	319.30	1.44	3.18	85	5.9

^{*}Hygienic clamp dimensions are in accordance with ASME-BPE, shown in inches

CLA851 Bulletin: T100.65 (09/22)

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JACOBY TARBOX®

16633 FOLTZ PARKWAY STRONGSVILLE, OH 44149 USA

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SIGHT FLOW INDICATOR STYLE 5500

SECTION: **T400** BULLETIN: **T400.60**

DATE: 05/18/2022 SUPERSEDES: 10/25/2018 FILE NO.: T400-60

DRAWN: MWS CHECKED: DEP

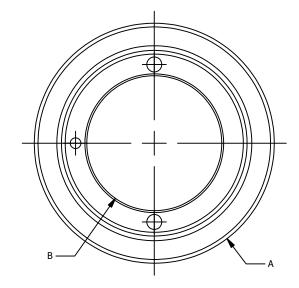
SCALE: NONE

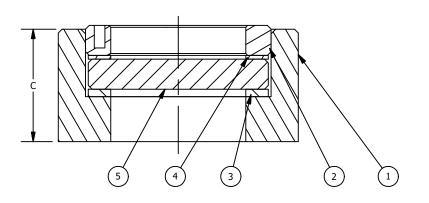
	PARTS LIST										
PIECE NO.	PART NAME	QTY.		STANDARD DESIGN MATERIALS							
1	BODY	1		ASTM A576 (CARBON STEEL)							
	(SEE NOTE (1))			ASTM A276 (316L SS)							
2	RETAINER (2)	1		C360 (BRASS)							
3	WINDOW (3)	1		TEMPERED BOROSILICATE							
4	SEAL GASKET (4)	1		NEOPRENE							
5	CUSHION GASKET	1		FIBER							

(1) ADDITIONAL ALLOYS AVAILABLE PER REQUEST									
(2) 316L SS AVAILABLE PER REQUEST									
(3) ADDITIONAL WINDOW OPTIONS AVAILABLE									
(4) COMMON OF	(4) COMMON OPTIONAL SEAL MATERIALS AVAILABLE								
(5) COMMON OPTIONAL SEAL MATERIALS AVAILABLE									
PTFE	GRAPHITE	FIBER							

PRESSURE / TEMP RATINGS							
PSIG / `F (BAR / `C)							
TEMP PRESSURE							
'F ('C)	STEEL 316L SS						
-20 TO 100	150 (10.3)	150 (10.3)					
150 (66)	150 (10.3)	150 (10.3)					
200 (93)	150 (10.3)	150 (10.3)					
250 (121)	150 (10.3)	150 (10.3)					
300 (149)	150 (10.3)	150 (10.3)					
350 (177)	150 (10.3)	150 (10.3)					
400 (204)	150 (10.3)	150 (10.3)					
450 (232)	150 (10.3)	150 (10.3)					
500 (260)	150 (10.3)	150 (10.3)					

DIMENSIONS												
SIZE	А		В		С		APPROX. WEIGHT					
IN	IN	mm	IN	mm	IN	mm	LBS	KGS				
#1	1.50	38	0.63	16	0.81	21	0.50	0.23				
#2	1.75	45	0.88	22	0.81	21	0.50	0.23				
#3	2.00	51	1.13	29	0.94	24	0.75	0.34				
#4	2.25	57	1.25	32	1.00	25	0.80	0.36				
#5	2.50	64	1.50	38	1.31	33	1.50	0.68				
#6	3.50	89	2.25	57	1.44	37	2.50	1.13				
#7	4.25	108	2.75	70	1.56	40	3.75	1.70				





MATERIAL: SEE B/M
DRAWN: TFK CHECKED: DEP
SCALE: NONE DATE: 9-02-97

OF BOLTS
SIZE STUDS
2 IN 4
3 IN 4
4 IN 8
6 IN 8



5005-DW, 5005-DW-300 5005-DW-600 SAFETY SIGHT GLASS Section: T400 Bulletin: T400.50 Date: 09/01/03

Supersedes: 12/01/00

150,300,600 PSIG MODELS

FILE NO.:T400-50.DWG

	4 IN	8		e G
	6 IN	8		
	8 IN	8	Ap	p
	10 IN	12		
	12 IN	12		
ASI		CONNECT	ION	

Full-View Dual Window



Approved

PARTS LIST								
PIECE NO.	NAME OF PART	QUAN.	MATERIAL	COMMENTS				
1	BODY	1	SEE BELOW					
2	RETAINER	1	STEEL					
3	CUSHION	2	FIBER					
4	SEAL GASKET	2						
5	WINDOW	2	BOROSILICATE					
6	BOLT		STEEL					
7	CARTRIDGE	1	316 SS					

STANDARD DESIGN MATERIALS:

BODY: ASTM A105 (STEEL)

ASTM A182 (316, 304 SS)

RETAINER: ASTM A516-70

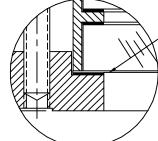
OR A216-WCB (STEEL) FASTENERS: SAE GRADE 5 (STEEL)

OPTIONAL ALLOYS FURNISHED UPON REQUEST TFE LINING STANDARD OPTION

OPTIONAL SPRAY RING SHOWN 1/4" FNPT CONNECTION

OPTIONS

DUAL UNIGLAS
WINDOWS



DETAIL "A"

UNISHIELD WINDOW PROTECTION KEL-F, MICA, OR TFE SHIELD OPTION PROTECTS GLASS FROM MEDIUM

PRESSURE/TEMP RATINGS

TEMP	ALL MATERIALS								
F	150 PSIG	300 PSIG	600 PSIG						
-20 TO 100	150	300	600						
150	150	300	600						
200	150	300	600						
250	150	300	600						
300	150	300	600						
350	150	300	600						
400	150	300	600						
450	150	300	600						
500	150	300	600						

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SIZE FLANGE		А	A B		3 €		C APPRO		X WGT.
JIZL	PSIG	IN	mm	IN	mm	IN	mm	LBS	KGS
2 IN	150	6.00	152	2.00	50.8	2.63	66.8	7.0	3.2
2 IN	300	6.50	165	2.00	50.8	2.72	69.1	9.0	4.1
2 IN	600	6.50	165	2.00	50.8	3.09	78.4	10.0	4.5
3 IN	150	7.50	190	3.00	76.2	3.06	77.7	13.0	5.9
3 IN	300	8.25	210	3.00	76.2	3.69	93.7	20.0	9.1
3 IN	600	8.25	210	3.00	76.2	4.31	109	23.0	10.4
4 IN	150	9.00	229	4.00	102	2.94	74.7	21.0	9.5
4 IN	300	10.00	254	4.00	102	4.00	102	36.0	16.3
4 IN	600	10.00	254	4.00	102	4.75	121	45.0	20.4
6 IN	150	11.00	279	6.00	152	3.56	90.4	30.0	13.6
6 IN	300	12.50	318	6.00	152	4.78	121	54.0	24.5
6 IN	600	14.00	356	6.00	152	6.59	167	86.0	39.0
8 IN	150	13.50	343	8.00	203	4.16	106	47.0	21.3
8 IN	300	15.00	381	8.00	203	6.09	155	90.0	40.8
8 IN	600	16.50	419	8.00	203	7.90	201	137.0	62.1
10 IN	150	16.00	406	10.00	254	5.75	146	75.0	34.0
12 IN	150	19.00	483	10.00	254	5.81	148	95.0	43.1

MATERIAL: SEE B/M

DRAWN: TFK CHECKED: DEP SCALE: NONE DATE: 9-15-95

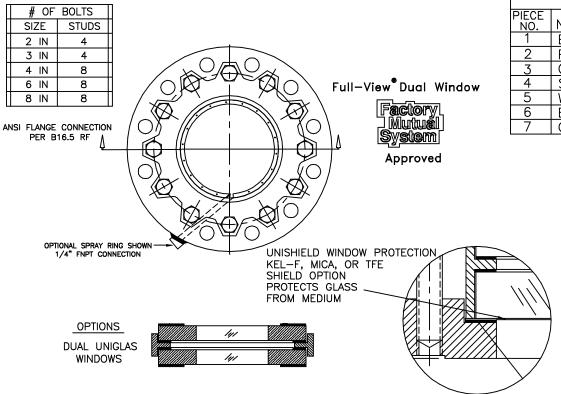


5005-DWA, 5005-DWA-300 5005-DWA-600 SAFETY SIGHT GLASS Section: T400
Bulletin: T400.51
Date: 09/01/03

Supersedes: 12/01/00

FULL ASME RATED

FILE NO.: T400-51.DWG



	PARIS LIST									
PIECE NO.	NAME OF PART	QUAN.	MATERIAL	COMMENTS						
1	BODY	1	SEE BELOW							
2	RETAINER	1	STEEL							
3	CUSHION	2	FIBER							
4	SEAL GASKET	2								
5	WINDOW	2	BOROSILICATE							
6	BOLT		STEEL							
7	CARTRIDGE	1	316 SS							

DADTO LICT

ANSI CLASS PRESSURE/TEMP RATINGS										
TEMP	150	CLASS	300	CLASS	600 CLASS					
F	STEEL	316 SS	STEEL	316 SS	STEEL	316 SS				
-20 TO 100	285	275	740	720	1480	1440				
150	270	260	705	670	1415	1340				
200	260	240	675	620	1350	1240				
250	245	230	665	590	1335	1180				
300	230	215	655	560	1315	1120				
350	215	205	645	535	1290	1075				
400	200	195	635	515	1270	1030				
450	185	180	615	495	1235	990				
500	170	170	600	480	1200	955				

STANDARD DESIGN MATERIALS:

BODY: ASTM A105 (STEEL)

ASTM A182 (316, 304 SS)

RETAINER: ASTM A516-70/A216-WCB (STEEL)

FASTENERS: ASTM A193-B7 (STEEL)

304/316 SS TRIM AVAILABLE

OPTIONAL ALLOYS FURNISHED UPON REQUEST

TFE LINING STANDARD OPTION

T	—— øв - 	6 2
C REF.	ØA	4 5 7 3 4

SIZE FLANGE		A		В		С		APPROX. WGT	
JIZL	CLASS	IN	mm	IN	mm	IN	mm	LBS	LBS
2 IN	150	6.00	152	2.00	50.8	2.88	73.2	7.5	3.4
2 IN	300	6.50	165	2.00	50.8	2.97	75.4	9.5	4.3
2 IN	600	6.50	165	2.00	50.8	3.34	84.8	11.0	5.0
3 IN	150	7.50	190	3.00	76.2	3.43	87.1	13.5	6.1
3 IN	300	8.25	210	3.00	76.2	4.06	103	21.0	9.5
3 IN	600	8.25	210	3.00	76.2	4.69	119	24.0	10.9
4 IN	150	9.00	229	4.00	102	3.44	87.4	22.0	10.0
4 IN	300	10.00	254	4.00	102	4.50	114	37.0	16.8
4 IN	600	10.00	254	4.00	102	5.25	133	46.0	20.9
6 IN	150	11.00	279	6.00	152	4.31	109	31.0	14.1
6 IN	300	12.50	317	6.00	152	5.53	140	55.0	24.9
6 IN	600	14.00	356	6.00	152	7.31	186	87.0	39.5
8 IN	150	13.50	343	8.00	203	5.16	131	49.0	22.2
8 IN	300	15.00	381	8.00	203	7.09	180	92.0	41.7
8 IN	600	16.50	419	8.00	203	8.90	226	139.0	63.0

MATERIAL: SEE B/M

DRAWN: TFK CHECKED: DEP SCALE: NONE DATE: 9-15-95



M□DEL 5800

500

170

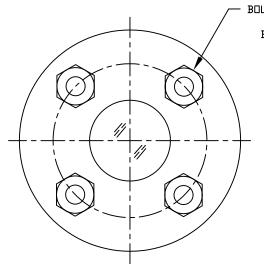
BOLT ON SIGHT WINDOW

Section: T400 Bulletin: T400.52

Date: 08/01/11 Supersedes: 01/01/10

FULL ASME RATED

FILE NO.: T400-52.DWG



BOLT PATTERN CONFORMS
TO ASME B16.5
BOLT COUNT VARIES
BY FLANGE SIZE

	PARTS LIST								
PIECE ND.	NAME OF PART	QUAN.	MATERIAL	COMMENTS					
1	RETAINER	1	STEEL						
2	UNIGLAS	1	SEE BELOW						
3	SEAL GASKET	1							
4	CUSHION GASKET	1	FIBER						

170

STANDARD DESIGN MATERIALS:

UNIGLAS RING:

ALLOY STEEL
HASTELLOY C

RETAINER: ASTM A-105 (STEEL)
FASTENERS: CUSTOMER SUPPLIED
STUDDING OUTLET/NOZZLE BODY:
CUSTOMER SUPPLIED
304/316 SS RETAINER AVAILABLE

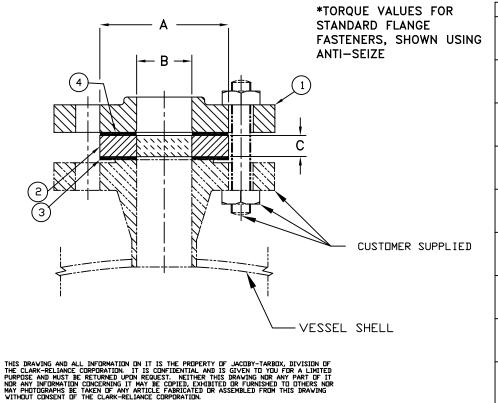
ASME CLASS PRESSURE/TEMP RATINGS									
TEMP	150 (CLASS	300 (CLASS		CLASS			
F	STEEL	HAST-C	STEEL	HAST-C	STEEL	HAST-C			
-20 TO 100	285	290	740	750	1480	1500			
150	270	275	705	750	1415	1500			
200	260	260	675	750	1350	1500			
250	245	245	665	740	1335	1475			
300	230	230	655	730	1315	1455			
350	215	215	645	717	1290	1430			
400	200	200	635	705	1270	1410			
450	185	185	615	685	1235	1370			

600

665

1200

1330



SIZE	CLASS	TORQUE*	A (IN)	A (mm)	B (IN)	B (mm)	C (IN)	C (mm)
	150	10	2, 00	50, 8	1. 12	28. 6	. 38	9. 5
1	300	15	2, 00	50. 8	1. 12	28. 6	. 38	9. 5
	600	15	2, 00	50, 8	1. 12	28. 6	. 75	19. 0
	150	15	3, 00	76. 2	1, 50	38, 1	. 75	19. 0
1-1/2	300	30	3, 00	76. 2	1, 50	38. 1	. 75	19. 0
	600	35	3, 00	76. 2	1, 50	38. 1	. 75	19.0
	150	20	3, 62	91. 9	2. 12	53. 8	. 75	19.0
2	300	15	3, 62	91. 9	2, 12	53, 8	. 75	19. 0
	600	15	3, 62	91. 9	2, 12	53, 8	, 90	22, 9
	150	40	4, 50	114	2, 50	63, 5	. 75	19.0
2-1/2	300	25	4. 50	114	2, 50	63, 5	. 75	19.0
	600	35	4. 50	114	2, 50	63, 5	, 90	22. 9
	150	50	5, 00	127	3, 00	76, 2	. 75	19.0
3	300	40	5, 00	127	3, 00	76. 2	, 90	22. 9
	600	50	5, 00	127	3, 00	76. 2	1, 18	30. 0
	150	35	6, 00	152	4. 00	102	. 75	19.0
4	300	55	6, 00	152	4, 00	102	, 90	22, 9
	600	85	6, 00	152	4, 00	102	1, 18	30, 0
	150	65	8, 38	213	5, 75	146	. 75	19.0
6	300	60	8, 38	213	5, 75	146	, 90	22. 9
	600	120	8. 38	213	4. 00	102	1. 18	30. 0
	150	120	10, 50	267	7. 50	190	, 90	22, 9
8	300	120	10. 50	267	6, 00	152	1, 40	35, 6
	600				TBA			
	150	100	12, 00	305	6, 00	152	. 90	22. 9
10	300	125	12, 00	305	6, 00	152	1, 40	35, 6
	600				TBA			

MATERIAL: SEE B/M DRAWN: TFK CHECKED: DEP SCALE: NONE DATE: 9-15-95



SIGHT WINDOW W - 5000

T400 Section: Bulletin: T400.53 Date: 09/01/03

Supersedes: 12/01/03

FILE NO.: T400-53.DWG

150 PSIG MODELS

CONSTANT DIMENSIONS									WEI	GHT
SIZE	ļ ,	4	E	3	(D		LBS.	KG.
(IN)	IN	mm	IN	mm	IN	mm	IN	mm	LDS.	NG.
1	4.25	108	1.38	34.9	1.25	31.8	1.62	41.3	6.0	2.7
1-1/4	4.62	117	1.38	34.9	1.38	34.9	1.62	41.3	7.0	3.2
1-1/2	5.00	127	2.00	50.8	1.62	41.3	1.75	44.4	9.0	4.0
2	6.00	152	2.00	50.8	1.75	44.4	1.75	44.4	13.0	5.9
2-1/2	7.00	178	3.00	76.2	2.12	54.0	1.88	47.6	20.0	9.0
3	7.50	190	3.19	81.0	2.38	60.3	1.75	44.4	23.0	10.4
4	9.00	229	4.25	108	2.38	60.3	2.00	50.8	34.0	15.4
5	10.00	254	5.00	127	2.38	60.3	2.50	63.5	38.0	17.2
6	11.00	279	6.06	154	2.50	63.5	2.50	63.5	48.0	21.7
8	13.50	343	7.98	203	3.00	76.2	2.88	73.2	58.0	26.3

///

/11/

	PARTS LIST								
PIECE NO.	NAME OF PART	QTY	MATERIAL	COMMENTS					
1	WELD NECK	1	SEE BELOW						
2	RETAINER	1	STEEL						
3	WINDOW	1	BOROSILICATE						
4	GASKET	1							
5	CUSHION	1	FIBER						
6	BOLT		STEEL						
7	NUT		STEEL						

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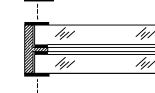
DUAL UNIGLAS WINDOWS

FULL VIEW DUAL

WINDOWS

UNIGLAS WINDOW

OPTIONS





Approved

# OF STU	# OF STUDS					
SIZE(IN)	STUDS					
1	4					
1-1/4	4					
1-1/2	4					
2	4					
2 2-1/2	4					
3	4					
4	8					
5	8					
6	8					
8	8					

STANDARD DESIGN MATERIALS:

BODY: ASTM A105 (STEEL) ASTM A182 (316 SS)

RETAINER:

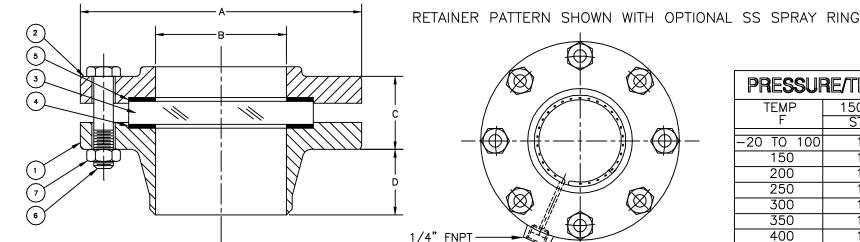
ASTM A105/A516-70/A216-WCB (STEEL)

FASTENERS: SAE GR.5 (STEEL) 304/316 SS TRIM AVAILABLE

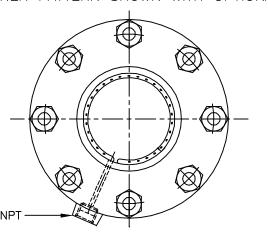
OPTIONAL ALLOYS FURNISHED UPON REQUEST

450

500



□ STYLE W-5000



PRESSURE/TEMP. RATINGS 150 PSIG MODELS TEMP 316 SS STEEL 150 -20 TO 100 150 150 150 150 200 150 150 250 150 150 300 150 150 350 150 150 400 150 150

150

150

150

150

MATERIAL: SEE B/M
DRAWN: TFK CHECKED: DEP
SCALE: NONE DATE: 9/15/95



SIGHT WINDOW S-5100

Section: T400
Bulletin: T400.54

Date: 09/01/03 Supersedes: 12/01/00

150 PSIG MODELS

FILE	NO.:	T400-	-54.DW	

	WEIC	SHT						
SIZE(IN)	A(IN)	A(mm)	B(IN)	B(mm)	C(IN)	C(mm)	LBS	KG
1	4.25	108	1.31	33.3	1.25	31.8	5.00	2.2
1-1/4	4.63	118	1.38	35.1	1.38	35.0	7.00	3.2
1-1/2	5.00	127	1.88	47.8	1.50	38.1	7.00	3.2
2	6.00	152	2.00	50.8	1.63	41.4	12.00	5.5
2-1/2	7.00	178	3.00	76.2	2.12	53.8	16.00	7.3
3	7.50	191	3.12	79.2	2.38	60.5	18.00	8.2
4	9.00	229	4.25	108	2.38	60.5	30.00	13.6
5	10.00	254	5.00	127	2.38	60.5	34.00	15.5
6	11.00	279	6.63	168	2.63	66.8	45.00	20.5

			PARTS LIST	
PIECE NO.	NAME OF PART	QTY	MATERIAL	COMMENTS
1	WELD NECK	1	SEE BELOW	
2	RETAINER	1	STEEL	
3	WINDOW	1	BOROSILICATE	
4	GASKET	1		
5	CUSHION	1	FIBER	
6	BOLT		STEEL	
7	NUT		STEEL	

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OPTIONS	manana		suu Tunnun	
DUAL UNIGLAS WINDOWS				
FULL VIEW DUAL WINDOWS				Factory Mutual System
UNIGLAS WINDOW		lyi		Approved

# OF STU	JDS
SIZE(IN)	STUDS
1	4
1-1/4	4
1-1/2	4
2	4
2-1/2	4
3	4
4	8
5	8
6	8

STANDARD DESIGN MATERIALS:

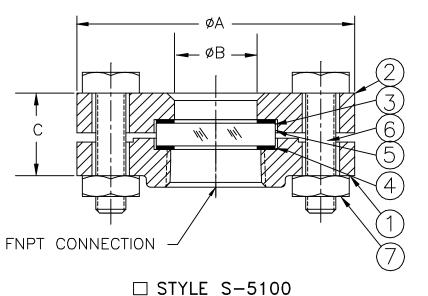
BODY: ASTM A105 (STEEL) \Box ASTM A182 (316 SS) \Box

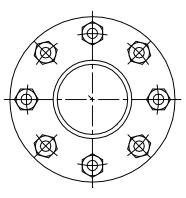
RETAINER:

ASTM A105/A516-70/A216-WCB (STEEL)

FASTENERS: SAE GR.5 (STEEL) 304/316 SS TRIM AVAILABLE

OPTIONAL ALLOYS FURNISHED UPON REQUEST





PRESSURE/TEMP. RATINGS							
TEMP	150 PSIG N	MODELS					
F	STEEL	316 SS					
-20 TO 100	150	150					
150	150	150					
200	150	150					
250	150	150					
300	150	150					
350	150	150					
400	150	150					
450	150	150					
500	150	150					

MATERIAL: S	SEE B/M
DRAWN: TFK	CHECKED: DEP
SCALE: NONE	DATE: 9/15/95



SIGHT WINDOW 5200 (COMMERCIAL) SERIES NON-ASME APPLICATIONS ONLY

T400 Section: Bulletin: T400.55

09/01/03 12/01/00 Supersedes:

150 PSIG MODELS

FILE	NO.:	T400-55.DWG

	CONSTAI	150	LB.			
SIZE	A(IN)	A(mm)	B(IN)	B(mm)	C(IN)	C(mm)
#2	3.31	84	1.25	32	1.75	45
#3	4.44	113	2.00	64	1.81	46
#4	5.56	141	2.56	65	2.13	54
#5	6.56	166	3.19	81	2.13	54
#6	7.56	192	4.25	108	2.13	54
#7	8.69	221	5.25	133	2.50	64
#8	10.31	262	6.88	175	2.50	64

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/1/

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1/	/4" FNPT

# OF	STUDS
SIZE	STUDS
#2	4
#3	6
#4	6
#5	6
#6	6
#7	6
#8	8

DUAL UNIGLAS

WINDOWS

OPTIONS

FULL VIEW DUAL WINDOWS

UNIGLAS WINDOW

☐ MODEL: 5200 (FLAT PAD)

☐ MODEL: 5200-CYL (PIPE RADIUS)

☐ MODEL: 5200-SPH (DISHED SPHERICAL)



Approved

/11/ DISHED HEAD VESSEL SHELL INSIDE SHELL RADIUS OR SPHERICAL SURFACE AS REQUIRED -

RETAINER PATTERN SHOWN WITH OPTIONAL SPRAY RING

	PARTS LIST						
PIECE NO.	NAME OF PART	QUAN.	MATERIAL	COMMENTS			
1	BODY	1	SEE BELOW				
2	GASKET	1					
3	RETAINER	1	STEEL				
4	WINDOW	1	BOROSILICATE				
5	STUD		STEEL				
6	NUT		STEEL				
7	CUSHION	1	FIBER				

PRESSURE/TEMP RATINGS							
TEMP	15	O PSIG MO	DELS				
F	STEEL	316 SS	304 SS				
-20 TO 100	150	150	150				
150	150	150	150				
200	150	150	150				
250	150	150	150				
300	150	150	150				
350	150	150	150				
400	150	150	150				
450	150	150	150				
500	150	150	150				

STANDARD DESIGN MATERIALS:

BODY: ASTM A516-70,A216-WCB,A106 (STEEL) ASTM A240,A351-CF8M (316 SS) □

RETAINER: ASTM A516-70 (STEEL)
FASTENERS: CARBON STEEL WELD STUD AND NUT

304/316 SS TRIM AVAILABLE

OPTIONAL ALLOYS FURNISHED UPON REQUEST

DRAWN: TFK CHECKED: DEP SCALE: NONE DATE: 06/12/97



SIGHT WINDOW 5200 PVQ-ASME VIII SERIES

T400 Section: T400.56 Bulletin:

Date: 12/01/00 Supersedes: 11/10/98

150, 300, 600 PSIG MODELS FILE NO.: T400-56.DWG

						0, 00	\circ	/ 	10 11	
	CONSTANT DIMENSIONS				150	LB.	300	LB.	600	LB.
SIZE	A(IN)	A(mm)	B(IN)	B(mm)	C(IN)	C(mm)	C(IN)	C(mm)	C(IN)	C(mm)
#2	3.88	99	1.25	32	2.31	32	2.44	62	2.44	62
#3	5.00	127	2.00	64	2.50	64	2.63	67	2.63	67
#4	6.50	165	2.56	65	3.28	83	3.40	86	3.40	86
#5	7.50	191	3.19	81	3.28	83	3.65	93	3.40	86
#6	8.25	210	4.19	107	3.16	80	3.40	86	3.91	99
#7	9.38	238	5.25	133	3.72	94	4.22	107	4.47	113
#8	11.00	279	6.75	171	3.97	101	4.97	126	5.47	138
#10	14.00	355	8.00	203	4.22	107	5.22	132	5.72	145
#12	16.75	425	11.00	279	5.28	134	5.91	150	TBD	TBD

	PARTS LIST						
PIECE NO.	NAME OF PART	QUAN.	MATERIAL	COMMENTS			
1	BODY	1	SEE BELOW				
2	GASKET	1					
3	RETAINER	1	STEEL				
4	WINDOW	1	BOROSILICATE				
5	STUD		STEEL				
6	NUT		STEEL				
7	CUSHION	1	FIBER				

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	OP'	TIONS	
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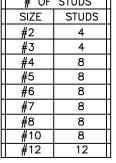
WINDOWS (SEE T400.57)

FULL VIEW DUAL **WINDOWS** (SEE T400.57)

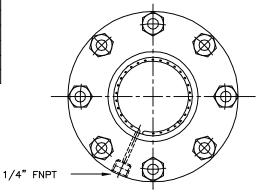
UNIGLAS WINDOW

	lyl		
	lyi		
- y		lyi	
		141	222
- 77		- 777	
	141		

# OF	STUDS
SIZE	STUDS
#2	4
#3	4
#4	8
# 5	8
#6	8
#7	8
#8	8
#10	8
#12	12







RETAINER PATTERN SHOWN WITH OPTIONAL SS SPRAY RING

TEMP		ALL MATERIALS(PSI)								
F	150#	300#	600#							
-20 TO 100	150	300	600							
150	150	300	600							
200	150	300	600							
250	150	300	600							
300	150	300	600							
350	150	300	600							
400	150	300	600							
450	150	300	600							
500	150	300	600							

DRECCI DETEMBRATINGS

STANDARD DESIGN MATERIALS:

BODY: ASTM/ASME SECTION II SA516-70/SA216-WCB/SA106 (STEEL) ASTM/ASME SECTION II SA240/SA351-CF8/CF8M (304/316 SS) RETAINER: ASTM/ASME SECTION II SA516-70/SA216-WCB/SA106 (STEEL)

FASTENERS: ASTM A193-B7/A194-2H

304/316 SS TRIM AVAILABLE

OPTIONAL ALLOYS FURNISHED UPON REQUEST

MIN. PAD THICKNESS "C" IS CALCULATED PER UG-44 FOR BOLTED FLANGE AND STUDDED CONNECTIONS. THE CLIENT IS RESPONSIBLE FOR VERIFICATION THAT THE WELD PAD THICKNESS WILL MEET THE PERFORMANCE REQUIREMENTS

OF THE APPLICATION

-	A
 - - - - - - - - -	7 3
	5
c	2
	1
DISHED HEAD	
INSIDE SHELL RADIUS OR SPHERICAL SURFACE	E AS REQUIRED
☐ MODELS: 5200 PVQ (FLAT PAD)	VESSEL SHELL —

☐ MODELS: 5200 PVQ-SPH (DISHED SPHERICAL)

NAME OF PART

BODY

PIECE

DRAWN: TFK CHECKED: DEP SCALE: NONE DATE: 9/15/95



OBROUND SIGHT WINDOW 5300 PVQ ASME VIII SERIES

Section: T400 Bulletin: T400.58

Date: 09/01/03 Supersedes: 12/01/00

FILE NO.: T400-58.DWG

150 PSIG MODELS

	— —	_
		Г
COMMENTS		Г
		r
		H

	וטטטו		3LL DLLOW	
2	GASKET	1		
3	RETAINER	1	STEEL	
4	WINDOW	1	BOROSILICATE	
5	STUD		STEEL	
6	NUT		STEEL	
7	CUSHION	1	FIBER	

PARTS LIST

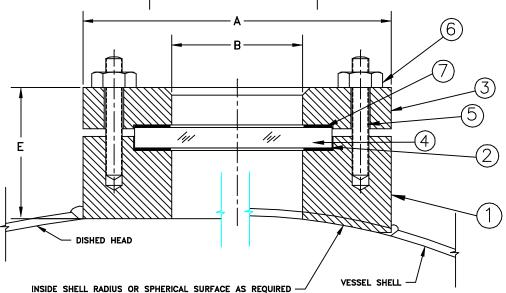
QUAN. MATERIAL

1 SEE BELOW

CONSTANT DIMENSIONS—SINGLE WINDOW									DUAL	WINDOW		
SIZE	A(IN)	A(mm)	B(IN)	B(mm)	C(IN)	C(mm)	D(IN)	D(mm)	E(IN)	E(mm)	E(IN)	E(mm)
1 X 6	3.63	92.2	1.00	25.4	6.00	152	8.63	219	2.16	54.9	2.81	71.4
2 X 12	5.00	127	2.00	50.8	12.00	305	15.00	381	2.40	61.0	3.06	77.7
3 X 12	6.00	152	3.00	76.2	12.00	305	16.00	406	2.81	71.4	3.69	93.7
3 X 18	6.00	152	3.00	76.2	18.00	457	22.00	559	2.81	71.4	3.69	93.7
4 X 24	7.00	178	4.00	102	24.00	610	28.00	711	3.16	80.3	4.19	106

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OPTIONS	///	///
FULL VIEW DUAL WINDOWS	///	///



□ MODELS:	5300	PVQ	(FLAT	PAD)
-----------	------	-----	-------	------

	MODELS:	5300	PVQ-CYL	(PIPE	RADIUS)
_				· · · · –	

_				
		#	OF	STUDS
		SIZ	Έ	STUDS
	1	Χ	6	8
Γ	2	Χ	12	12
	3	Χ	12	12
	3	Χ	18	14
	4	Χ	24	22

Pressure/temp. Ratings							
TEMP	150 PSIG M	ODELS					
F	STEEL	316 SS					
-20 TO 100	150	150					
150	150	150					
200	150	150					
250	150	150					
300	150	150					
350	150	150					
400	150	150					
450	150	150					
500	150	150					

STANDARD DESIGN MATERIALS:

BODY: ASTM/ASME SECTION II SA516-70 (STEEL)
ASTM/ASME SECTION II SA240 (316 SS)

RETAINER: ASTM/ASME SECTION II SA516-70 (STEEL)

FASTENERS: ASTM A193-B7/A194-2H (STEEL)

304/316 SS TRIM AVAILABLE

OPTIONAL ALLOYS FURNISHED UPON REQUEST
MIN. PAD THICKNESS "C" IS CALCULATED PER UG-44 FOR
BOLTED FLANGE AND STUDDED CONNECTIONS. THE CLIENT
IS RESPONSIBLE FOR VERIFICATION THAT THE WELD PAD
THICKNESS WILL MEET THE PERFORMANCE REQUIREMENTS
OF THE APPLICATION

DRAWN: TFK CHECKED: DEP SCALE: NONE DATE: 9/15/95



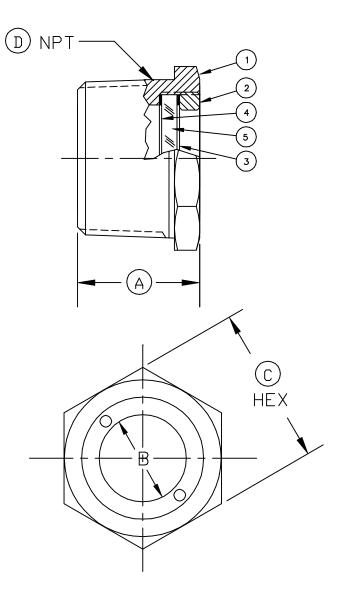
THREADED SIGHT WINDOW STYLE S-5400

Section: T400 Bulletin: T400.59

Date: 12/01/00 Supersedes: 11/10/98

FILE NO.: T400-59.DWG

150 PSIG MODELS



□STYLE S-5400

	PARTS LIST								
PIECE NO.	NAME OF PART	QUAN.	MATERIAL	COMMENTS					
1	BODY	1	SEE BELOW						
2	RETAINER	2	BRASS						
3	CUSHION	2	FIBER						
4	SEAL GASKET	2							
5	WINDOW	2	BOROSILICATE						
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PRESSURE/TEMP. RATINGS TEMP 150 PSIG MODELS F STEFL 316 SS -20 TO 100 150 150 150 150 150 200 150 150 250 150 150 300 150 150 350 150 150

150

150

150

150

150

150

400

450

500

STANDARD DESIGN MATERIALS:

BODY: AISI C1015 (CARBON STEEL)
AISI A276 (316 SS)
UNS C36000 HO2 BRASS
OPTIONAL ALLOYS FURNISHED UPON REQUEST

RETAINER: UNS C36000 HO2 BRASS 316 SS RETAINER AVAILABLE

DIMENSIONS									
D SIZE	A(IN)	A(mm)	B(IN)	B(mm)	C(IN)	C(mm)	WGT.(#)	WGT.(KG)	
1	1.06	26.9	.625	15.9	1.50	38.1	2	.91	
1-1/4	1.25	31.8	.875	22.2	1.75	44.4	3	1.36	
1-1/2	1.31	33.3	1.06	26.9	2.00	50.8	3	1.36	
2	1.44	36.6	1.31	33.3	2.50	63.5	3	1.36	
2-1/2	1.69	42.9	1.75	44.4	3.00	76.2	4	1.81	
3	1.75	44.4	2.38	60.4	3.50	88.9	4	1.81	

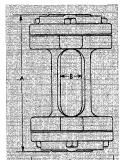
CYLINDRICAL SHEATHED **INDICATORS**



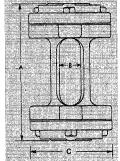
Style 1000-S Threaded Connections



Style 4000-S Threaded Connections



Style 860-F Flanged Connections



Procesure

100

14#

Pipe	וע	MENSIO			
Size	Α	В	С	Weight	Rating PSIG
1/4"	7"	7/8"	2-3/4"	4#	150
1/2"	7"	7/8"	2-3/4"	4#	150
3/4"	7"	1-1/8"	3-1/8"	5#	150
1"	7"	1-1/8"	3-1/8"	5#	150
1-1/4"	7-5/8"	1-1/2"	4-1/8"	9#	150
1.1/2"	7.5/9"	1.1/2"	4-1/8"	9#	150

STYLE 1000-S

DIMENSIONS

3"

7-5/8"

'A' Dimension ± 1/8"

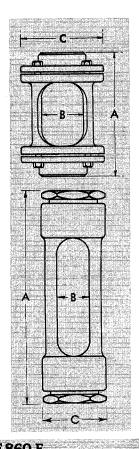
Cylindrical Sheathed Sight Flow Indicator

All of the units on this page are designed for use in either horizontal or vertical pipe lines which may be subject to some mechanical

They are all fabricated using borosilicate tubes and cylinders. Styles 1000-S and 860-F are provided with a rugged cast iron body and the ends are heavy castings of metals required for a specific service. The joints around the cylinders are made through a stuffing box type seal.

Style 4000-S is also a tube type of a lighter construction, using bronze bodies with heads made from bar stock of various metals. This construction allows semi-automatic production with resulting lower costs.

In all units illustrated on this page, the solution or gas does not come in contact with the bodies—only the heads, glass and gasket material.



gliuli. I	9111		Access to the survey
DI	MENSION	IS	Appro
	В	С	Weigh

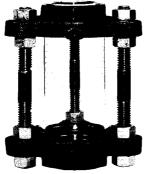
Pine	Pipe DIMENSION		DIMENSIONS		IS	Арргох.	Pressure
Size	A	ВС		Weight	Rating PSIG		
1/2"	6-1/8"	13/16"	3-1/2"	5#	150		
3/4"	6-3/8"	1-1/16"	3-7/8"	8#	150		
1"	6-3/8"	1-1/16"	4-1/4"	11#	150		
1-1/2"	6-3/4"	1-5/8"	5″	16#	150		
2"	7-5/8"	2"	6"	23#	120		
2-1/2"	7-7/8"	2-3/8"	7"	31#	100		
3"	8-1/8"	2-3/4"	7-1/2"	33#	100		

5tyle 40005							
Pipe	DI	MENSIO	ENSIONS Approx				
Size	Α	В	С	Weight			
1/4"	4-7/8"	5/8"	1-1/2"	1#			
3/8"	4-7/8"	5/8"	1-1/2"	1#			
1/2"	6"	3/4"	1-3/4"	2#			
3/4"	6-5/8"	1"	2"	2-1/2#			
1"	6-5/8"	1"	2"	2-1/2#			
1-1/4"	8-7/8"	1-3/8"	2-7/8"	6#			
1-1/2"	8-7/8"	1-3/8"	2-7/8"	6#			

Pressure Rating-150 PSIG

FULL VIEW LOW PRESSURE SIGHT FLOW INDICATORS

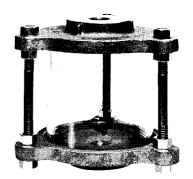
Threaded Ends



Style 805-S Pipe Sizes 1/8" thru 2"



Style 805-SD Drip Type



Style 850-SPipe Sizes 1/4" thru 2"

Pipe Sizes 1/8" thru 2"

The styles illustrated here are all low pressure tube type Sight Flow Indicators and, although best adapted to vertical pipe lines, they may be installed horizontally as well. These units are recommended where maximum visibility is desirable and where mechanical strains in the pipe lines are not present.

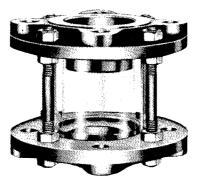
All sizes in Style 850-S are provided with 5" OD cylinders and are suitable where a large observation area is required. Style 830-F and 830-FD are flanged end units faced and drilled to match 150# ASA flanges and are intended for installations similar to those of the screwed end units described.

Available in varying lengths to 48". With graduated or clear cylinders



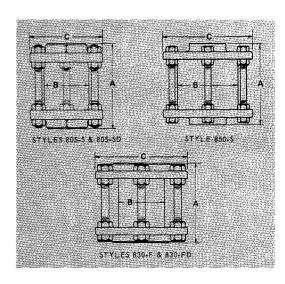
Style 830-F Pipe Sizes 1/2" thru 12"

Flanged Ends



Style 830-FD Drip Type

Pipe Sizes 1/2" thru 12"



STYLES 805-S & 805	

Pine	Pipe Dimensions				Pressure	
Size	A	В	С	Approx. Weight	Rating PSIG	
1/8"	41/2"	13/4"	33/4"	2#	150	
1/4"	41/2"	13/4"	33/4"	2#	150	
3/8"	41/2"	13/4"	33/4"	2#	150	
1/2"	41/2"	13/4"	33/4"	2#	150	
3/4"	41/2"	13/4"	33/4"	2#	150	
1"	41/2"	2"	41/4"	3#	150	
11/4"	43/4"	21/2"	43/4"	4#	120	
11/2"	43/4"	21/2"	43/4"	4#	120	
2"	51/2"	3"	53/4"	7#	100	

'A' Dimension ± 1/8"

STYLE 850-S

Pipe	D	imensio	ns	Арргож.	
Size	Α	В	С	Weight	
1/4"	63/4"	5″	81/4"	13#	
3/8"	63/4"	5″	81/4"	13#	
1/2"	63/4"	5″	81/4"	13#	
3/4"	63/4"	5″	81/4"	13#	
1"	63/4"	5″	81/4"	13#	
11/4"	63/4"	5″	81/4"	13#	
11/2"	68/4"	5″	81/4"	13#	
2"	63/4"	5″	81/4"	13#	

Pressure Rating—70 PSIG A: Dimension ± 1/8"

STYLES 830-F & 830-FD

Pipe	D	imensio	ns	Approx. Pressu	
Size	A	В	С	Weight	Rating PSIG
1/2"	37/8"	11/4"	31/2"	31/2#	150
3/4"	37/8"	11/2"	37/8"	4#	150
1"	4"	13/4"	41/4"	5#	150
11/2"	4"	21/2"	5″	6#	120
2"	43/4"	3"	6"	111/2#	100
$2^{1/2''}$	$5^3/8''$	31/2"	7"	15#	85
3″	5³/s"	4"	71/2"	19#	100
4"	$7^{1/2}$	5″	9″	22#	70
6"	103/8"	7"	11"	56#	45
8″	14"	$9^{1/8}$ "	131/2"	68#	25
10"	141/8"	11"	16"	87#	20
12"	141/4"	13"	19″	131#	20

'A' Dimension ± 1/8"

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ACOBY·TARBOX®

16633 FOLTZ PARKWAY STRONGSVILLE, OH 44149 USA PH: +1 440-572-1500 www.clark-reliance.com

SIGHT FLOW INDICATOR MODEL 910-FA, 608-FA, 935-FA **ASME CLASS 150 SERVICE**

SECTION: T400 **BULLETIN: T400.02**

DATE: 03/07/11 SUPERSEDES: 07/29/09

FILE NO.: T400-02.DWG

DRAWN: FWK CHECKED: DEP

SCALE: NONE

-	—(A)—	-
_	(B) DIA.	-

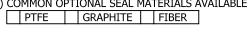
	PARTS LIST							
PIECE NO.	PART NAME	QTY.	STANDARD DESIGN MATERIALS					
1	BODY	1	ASTM A216-WCB (CARBON STEEL)					
	(SEE NOTE (1))		ASTM A351-CF8M (316 SS)					
	ASTM B62 (BRONZE)							
2	RETAINER (2)	2	ASTM A216-WCB (CARBON STEEL) (1 / 2" - 6")					
	ASTM A516 GR.70 (CARBON STEEL) (8" & UP)							
3	BOLT (2), (3)	4	ASTM A354-BD (ALLOY STEEL)					
4	NUT (2), (3)	4	ASTM A194-2H (ALLOY STEEL)					
5	WINDOW (4)	2	TEMPERED BOROSILICATE					
6	SEAL GASKET (5)	2	NEOPRENE					
7	CUSHION GASKET	2	FIBER					
8	INDICATOR	1	FLAPPER (316SS) DRIP TUBE (316SS)					
			ROTOR (PTFE) FLUTTER (PTFE)					

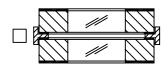
NOTES (REFERENCE PARTS LIST)

- (1) a. ADDITIONAL ALLOYS AVAILABLE PER REQUEST b. OPTIONAL PFA (TEFLON®) LINING PER T400.10
 - c. BRONZE AVAILABLE TO 8" SIZE MAX
 - d, BRONZE FLANGES MACHINED PER ASME B16,24 CLASS 150 FF
- (2) ADDITIONAL ALLOYS AVAILABLE PER REQUEST
- (3) BOLT & NUT QUANTITIES FOR 10" SIZE UNITS AND LARGER INCREASE TO (16) EACH
- (4) a. OPTIONAL MATERIALS AVAILABLE PER PROCESS CONDITIONS
 - b. ADDITIONAL WINDOW OPTIONS AVAILABLE SEE SIDE SECTION FOR DETAILS
- (5) COMMON OPTIONAL SEAL MATERIALS AVAILABLE

DESIGNED IN ACCORDANCE WITH ASME B31.1 & B31.3

FOR PRESSURE VERSUS TEMPERATURE RATINGS USING ONLY LISTED METALS IN FABRICATION





DUAL UNIGLAS WINDOW

UNIGLAS WINDOW



MODEL 910-FA



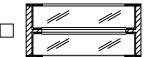
MODEL 935-FA



DRIP TUBE MODEL 608-FA

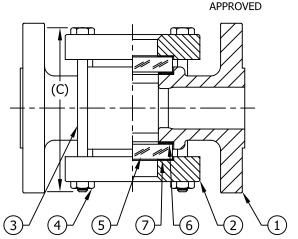


MODEL 910-FA-FLTR



FULL VIEW DUAL WINDOW (FM)

NO INDICATOR MODEL 910-FA(NF) (AS SHOWN)



PSIG / °F (BAR / °C)							
TEMP		PRESSURE					
°F (°C)	STEEL	316 SS	BRONZE				
-20 TO 100	285	275	225				
(-29 TO 37)	(19.65)	(18.96)	(15.51)				
150 (66)	270 (18.61)	255 (17.58)	225 (15.51)				
200 (93)	260 (17.92)	235 (16.20)	210 (14.48)				
250 (121)	245 (16.89)	225 (15.51)	195 (13.44)				
300 (149)	230 (15.86)	215 (14.82)	180 (12.41)				
350 (177)	215 (14.82)	205 (14.13)	165 (11.38)				
400 (204)	200 (13.79)	195 (13.44)	150 (10.34)				
450 (232)	185 (12.76)	180 (12.41)	UNRATED				
500 (260)	170 (11.72)	170 (11.72)	UNRATED				

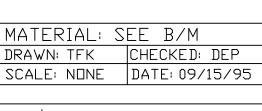
ASME PRESSURE / TEMP RATINGS

FOR TEMPERATURES ABOVE 500°F (260°C) REFER TO ASTM B16.5 FOR PRESSURE RATINGS

	DIMENSIONS								
FLANG	E SIZE	Α ((*)	Е	3	C (**)	APPROX.	WEIGHT
IN	DN	IN	mm	IN	mm	IN	mm	LBS	KGS
1/2	15	4.62	118	1.12	28	4.00	102	6.00	2.70
3/4	20	4.62	118	1.12	28	4.00	102	6.00	2.70
1	25	5.62	143	1.25	32	4.50	114	8.00	3.60
1 1/2	40	6.50	165	2.00	51	5.88	146	15.00	6.80
2	50	7.88	200	2.00	51	6.25	152	22.00	10.00
2 1/2	65	9.38	238	3.18	81	8.50	203	44.00	20.00
3	80	9.38	238	3.18	81	8.50	203	44.00	20.00
4	100	11.00	279	4.38	111	10.50	260	67.00	30.40
6	150	14.25	362	6.88	175	14.75	343	155.00	70.30
8	200	16.12	410	8.25	210	17.50	419	230.00	104.30
10	250	24.75	630	11.00	279	24.12	613	405.00	183.70
12	300	25.75	65 4	11.00	279	24.12	613	460.00	208.70
14	350	26.75	679	11.00	279	27.38	695	505.00	229.00
16	400	26.75	679	11.00	279	27.38	695	555.00	257.10

(*) FOR BRONZE BODIES, REDUCE "A" DIMENSION BY .125 (3mm)

(**) STANDARD BOLT LENGTH SHOWN. OPTIONAL WINDOW MATERIALS OR USE OF STUDS MAY INCREASE LENGTH



4

3

5

2

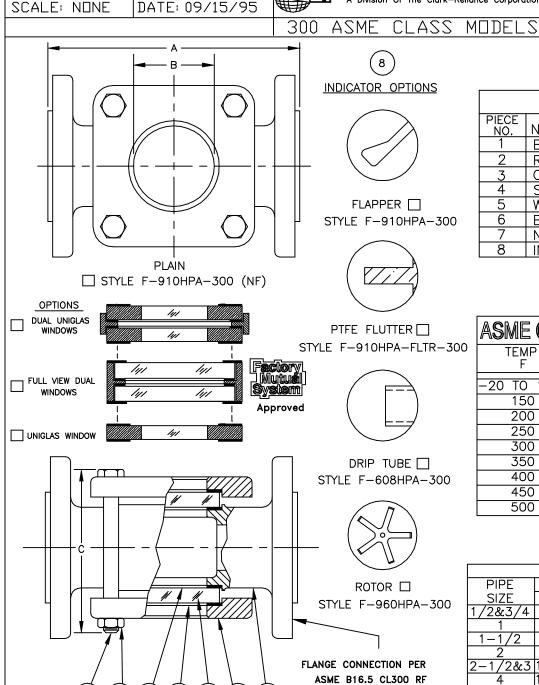
SIGHT FLOW INDICATOR STYLES F-910HPA-300 F-608HPA-300, F-960HPA-300

T400 Section: Bulletin: T400.04 12/01/00

11/10/98 Supersedes:

FILE NO.: T400-04.DWG

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	PARTS LIST									
PIECE NO.	NAME OF PART	QUAN.	MATERIAL	COMMENTS						
1	BODY	1	SEE BELOW							
2	RETAINER	2	STEEL							
3	CUSHION	2	FIBER							
4	SEAL GASKET	2								
5	WINDOW	2	BOROSILICATE							
6	BOLT		STEEL							
7	NUT		STEEL							
8	INDICATOR									

ASME CLASS P/T RATINGS

TEMP	300 CLASS				
F	STEEL	316 SS			
-20 TO 100	740	720			
150	705	670			
200	675	620			
250	665	590			
300	655	560			
350	645	535			
400	635	515			
450	615	495			
500	600	480			

STANDARD DESIGN MATERIALS:

BODY: ASTM A216-WCB (CARBON STEEL)

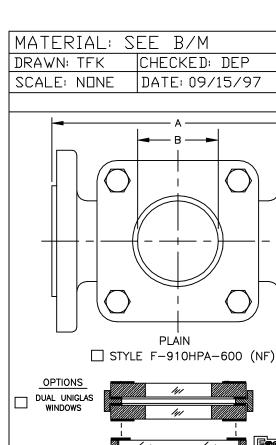
ASTM A351-CF8M (316 SS) □

RETAINER: ASTM A516 GR. 70 (STEEL) FASTENERS: A354-BD/A194-2H (STEEL) INDICATOR: 316 SS FLAPPER & DRIP TUBE INDICATOR: PTFE ROTOR & FLUTTER

304/316 SS TRIM AVAILABLE

OPTIONAL ALLOYS FURNISHED UPON REQUEST

DIMENSIONS										
PIPE	Α	١	В		С		APPROX. WGT.		#	
SIZE	IN.	mm	IN.	mm	IN.	mm	LBS.	KGS.	BOLTS	
1/2&3/4	5-7/8	149	1	25	5-1/4	133	9-1/2	4.3	4	
1	6-7/8	175	1-1/4	32	5-1/4	133	17	7.7	4	
1-1/2	7-1/2	191	2	51	7-3/8	187	24	10.9	4	
2	8-5/8	219	2	51	7-5/8	194	35	15.9	4	
2-1/2&3	11-3/8	289	3-3/16	81	10-5/8	270	64	29	4	
4	13-1/4	337	4-1/4	108	13	330	135	61.3	4	
6	21-3/8	543	5-1/2	140	17-1/8	435	250	113.4	12	
8	23	584	5-1/2	140	19	483	335	152	12	



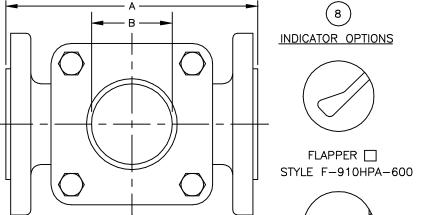
SIGHT FLOW INDICATOR STYLES F-910HPA-600 F-608HPA-600

T400 Section: Bulletin: T400.05

Date: 12/01/00 Supersedes: 11/10/98

FILE NO.: T400-05.DWG

600 ASME CLASS MODELS



Approved

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	PARTS LIST											
PIECE NO.	NAME OF PART	QUAN.	MATERIAL	COMMENTS								
1	BODY	1	SEE BELOW									
2	RETAINER	2	STEEL									
3	CUSHION	2	FIBER									
4	SEAL GASKET	2										
5	WINDOW	2	BOROSILICATE									
6	BOLT		STEEL									
7	NUT		STEEL									
8	INDICATOR											

/// FULL VIEW DUAL

///

3

4

5

2

WINDOWS

UNIGLAS WINDOW

PTFE FLUTTER STYLE F-910HPA-FLTR-600



DRIP TUBE STYLE F-608HPA-600

FLANGE CONNECTION PER **ASME B16.5 CL600 RF**

ASME CLASS P/T RATINGS

TEMP	600 CLASS					
F	STEEL	316 SS				
-20 TO 100	1480	1440				
150	1415	1340				
200	1350	1240				
250	1335	1180				
300	1315	1120				
350	1290	1075				
400	1270	1030				
450	1235	990				
500	1200	955				

STANDARD DESIGN MATERIALS:

BODY: ASTM A216-WCB (CARBON STEEL)

ASTM A351-CF8M (316 SS) □

RETAINER: ASTM A516 GR. 70 (STEEL) FASTENERS: A354-BD/A194-2H (STEEL) INDICATOR: 316 SS FLAPPER & DRIP TUBE INDICATOR: PTFE ROTOR & FLUTTER

304/316 SS TRIM AVAILABLE

OPTIONAL ALLOYS FURNISHED UPON REQUEST



	DIMENSIONS											
PIPE	ļ.	١	Е	}	С		APPF W(#				
SIZE	IN.	mm	IN.	mm	IN.	mm	LBS.	KGS.	BOLTS			
1/2&3/4	6-1/4	159	1	25	5-1/4	133	9-1/2	4.3	4			
1	7-1/4	184	1-1/4	32	5-3/4	146	17	7.7	4			
1-1/2	7-7/8	200	2	51	5-7/8	149	24	10.9	4			
2	9	229	2	51	8-1/8	206	35	15.9	4			
2-1/2&3	11 - 3/4	299	3 - 3 / 16	81	11-5/8	295	64	29	4			
4	14-1/4	362	4-1/4	108	14-1/4	362	135	61.3	4			
6	23-3/8	594	5-1/2	140	19-1/8	486	260	117.9	12			
8	25 - 1/4	641	5-1/2	140	21-7/16	545	350	158.8	12			
					·							

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> PH: +1 440-572-1500 www.clark-reliance.com

SIGHT FLOW INDICATOR MODEL F-910HPA-900/1500 & F-960HPA-900/1500 & F-608HPA-900/1500 W/ FLANGES

SECTION: **T400** BULLETIN: **T400.21**

DATE: 10/31/2017 SUPERSEDES: 09/01/03

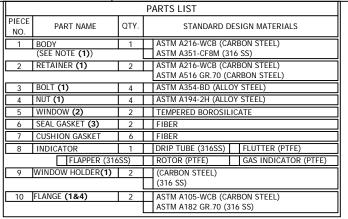
DRAWN: **MWS** CHECKED:**DEP**SCALE: **NONE**

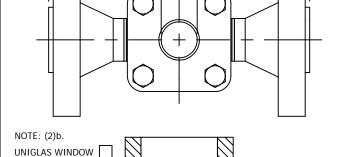
FILE NO.: **T400-21.DWG**

NOTES (REFERENCE PARTS LIST)

- (1) ADDITIONAL ALLOYS AVAILABLE PER REQUEST (2) a. OPTIONAL MATERIALS AVAILABLE PER PROCESS CONDITIONS
 - b. ADDITIONAL WINDOW OPTIONS AVAILABLE SEE SIDE SECTION FOR DETAILS
- (4) FLANGE TO MATCH BODY MATERIAL

DESIGNED IN ACCORDANCE WITH ASME B31.1 & B31.3 FOR PRESSURE VERSUS TEMPERATURE RATINGS USING ONLY LISTED METALS IN FABRICATION





Ø(B)





F-960HPA-900/1500









FULL VIEW DUAL

WINDOWS

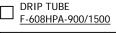






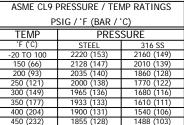
NO INDICATOR F-910HPA-900/1500(NF)

F-910HPA-900/1500



GAS INDICATOR <u>F-910HPA-900/1500-GI</u>

F-910HPA-900/1500-FLTR



1810 (125)

ı	ASIVIE CLTS PRESSURE / TEIVIP RATTINGS								
	PSIG / 'F (BAR / 'C)								
1	TEMP PRESSURE								
]	'F ('C)	STEEL	316 SS						
1	-20 TO 100	3705 (256)	3600 (248)						
1	150 (66)	3550 (245)	3348 (231)						
]	200 (93)	3395 (234)	3095 (213)						
]	250 (121)	3333 (230)	2945 (203)						
]	300 (149)	3270 (226)	2795 (193)						
1	350 (177)	3220 (222)	2683 (185)						
]	400 (204)	3170 (219)	2570 (177)						
]	450 (232)	3093 (213)	2480 (171)						
]	500 (260)	3015 (208)	2390 (165)						

FOR TEMPERATURES ABOVE 500°F (260°C) REFER TO ASTM B16.5 FOR PRESSURE RATINGS

DETAIL A
DETAILA

APPROVED

DIMENSIONS											
NPT SIZE	A (I	RF)	A (F	RTJ)	E	3	(APPROX. WEIGHT		
IN	IN	mm	IN	mm	IN	mm	IN	mm	LBS	KGS	
½" 900	9.75	248	9.75	248	1.06	27	6.50	165	27.20	12.34	
½" 1500	9.75	248	9.75	248	1.06	21	7.50	191	27.20	12.34	
¾" 900	10.50	267	10 E0	267	1.04	27	6.50	165	27.20	12.34	
¾" 1500	10.50	207	10.50	207	1.06	21	7.50	191	27.20	12.34	
1" 900	11.13	283	11.13	283	1.25	32	8.00	203	33.60	15.24	
1" 1500	11.13	203	11.13	203	1.23	32	8.00	203	33.00	13.24	
1½" 900	12.25	311	12.25	311	2.00	51	10.00	254	52.40	23.77	
1¼" 1500	12.23	311	12.23	311	2.00	31	10.50	267	32.40	23.11	
1½" 900	13.00	330	13.00	330	2.00	51	10.00	254	60.48	27.43	
1½" 1500	13.00	330	13.00	330	2.00	JI	10.50	267	00.46	27.43	
2" 900	14 50	240	14.42	240	2.00	F1	10.00	254	02.40	27.20	
2" 1500	14.50	368	14.63	368	2.00 51		10.50 267		82.40	37.38	

1435 (98.9)

(*) STANDARD BOLT LENGTH SHOWN. OPTIONAL WINDOW MATERIALS OR USE OF STUDS MAY INCREASE LENGTH FOR SINGLE WINDOW (1 PER SIDE) TEMPERED GLASS.

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OPTIONAL CONNECTION

SEE DIMENSIONAL NOTE



PIECE

16633 FOLTZ PARKWAY STRONGSVILLE, OH 44149 USA PH: +1 440-572-1500 www.clark-reliance.com

SIGHT FLOW INDICATOR MODEL 90-LR, 90-LR-D **ASME CLASS 150 SERVICE**

SECTION: T400 BULLETIN: **T400.107**

DATE: 3/5/2020 SUPERSEDES: 8/16/2018

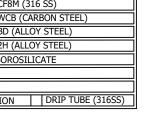
FILE NO.: **T400-107.DWG**

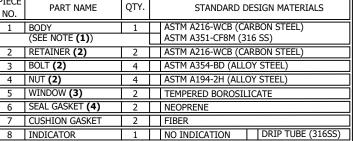
DRAWN: MWS CHECKED: DEP SCALE: NONE

NOTES (REFERENCE PARTS LIST)

- (1) a. STANDARD FLANGES FACED & DRILLED TO ASME B16.5 CLASS 150 RF DIMENSIONS
 - b. ADDITIONAL ALLOYS AVAILABLE PER REQUEST b. OPTIONAL PFA (TEFLON) LINING PER T400.307
- (2) ADDITIONAL ALLOYS AVAILABLE PER REQUEST
- (3) a. OPTIONAL MATERIALS AVAILABLE PER
 - PROCESS CONDITIONS b. ADDITIONAL WINDOW OPTIONS AVAILABLE
- SEE SIDE SECTION FOR DETAILS COMMON OPTIONAL SEAL MATERIALS AVAILABLE
- PTFE GRAPHITE FIBER

DESIGNED IN ACCORDANCE WITH ASME B31.1 & B31.3 FOR PRESSURE VERSUS TEMPERATURE RATINGS USING ONLY LISTED METALS IN FABRICATION





PARTS LIST











NO INDICATOR MODEL 90-LR

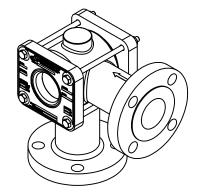
PSIG / `F (BAR / `C)									
TEMP	PRE	SSURE							
.Ł (.C)	STEEL	310							
-20 TO 100	285	2							
(-29 TO 37)	(19.65)	(18							
150 (66)	270 (18.61)	255 (
200 (93)	260 (17.92)	235 (
250 (121)	245 (16.89)	225 (
300 (149)	230 (15.86)	215 (

275 (18.96)255 (17.58) 235 (16,20) 225 (15.51) 215 (14.82) 350 (177) 215 (14.82) 205 (14.13) 400 (204) 200 (13,79) 195 (13,44) 450 (232) 185 (12.76) 180 (12.41) 500 (260) 170 (11.72) 170 (11.72) FOR TEMPERATURES ABOVE 500°F (260°C) REFER

ASME PRESSURE / TEMP RATINGS

316 SS

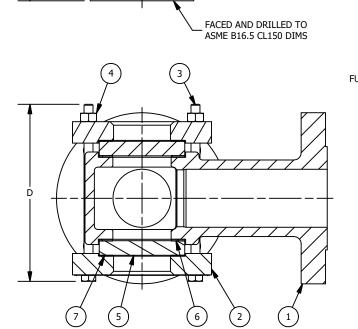
TO ASTM B16.5 FOR PRESSURE RATINGS

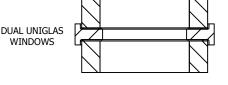


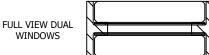
FLANG	E SIZE	Δ	١	E	3		2	D(**)	APPROX	. WEIGHT
IN	DN	IN	mm	IN	mm	IN	mm	IN	mm	LBS	KGS
1	25	5.00	127	1.25	32	6.88	175	4.67	119	7	3.2
1 1/2	40	6.00	152	2.00	51	8.38	213	6.20	158	15	6.8
2	50	6.50	165	2.00	51	9.06	230	6.20	158	26	11.8
3	80	7.75	197	3.18	81	11.13	283	8.30	211	48	21.8
4	100	9.00	229	4.25	108	13.16	334	9.83	250	70	31.8
6	150	11.50	292	6.38	162	16.97	431	14.50	368	155	70.3
	DIMENSIONS (TOL ± .125 (3mm))										

(**) STANDARD BOLT LENGTH SHOWN. OPTIONAL WINDOW MATERIALS OR USE OF STUDS MAY INCREASE LENGTH

DIMENSIONAL NOTE: 1/2", 3/4", AND 1" VENT CONNECTIONS AVAILABLE IN FEMALE NPT, MALE NPT, OR FLANGED CONNECTIONS. SEE BULLITON T100.90 TO CONFIGURE.









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OPTIONAL CONNECTION

SEE DIMENSIONAL NOTE

D



16633 FOLTZ PARKWAY STRONGSVILLE, OH 44149 USA PH: +1 440-572-1500 www.clark-reliance.com

SIGHT FLOW INDICATOR MODEL 90-LR-300, 90-LR-D-300 ASME CLASS 300 SERVICE

SECTION: T400 BULLETIN: **T400.207**

DATE: 3/5/2020 SUPERSEDES: 8/16/2018

FILE NO.: **T400-207.DWG** DRAWN: MWS CHECKED: DEP SCALE: NONE

WWW.Clair	C TCHarice.com		
			PARTS LIST
PIECE NO.	PART NAME	QTY.	STANDARD DESIGN MATERIALS

INO.			
1	BODY	1	ASTM A216-WCB (CARBON STEEL)
	(SEE NOTE (1))		ASTM A351-CF8M (316 SS)
2	RETAINER (2)	2	ASTM A216-WCB (CARBON STEEL)
3	BOLT (2)	4	ASTM A354-BD (ALLOY STEEL)
4	NUT (2)	4	ASTM A194-2H (ALLOY STEEL)
5	WINDOW (3)	2	TEMPERED BOROSILICATE

SEAL GASKET (4) NEOPRENE CUSHION GASKET FIBER DRIP TUBE (316SS) INDICATOR NO INDICATION

b. ADDITIONAL WINDOW OPTIONS AVAILABLE SEE SIDE SECTION FOR DETAILS COMMON OPTIONAL SEAL MATERIALS AVAILABLE

NOTES (REFERENCE PARTS LIST)

ASME B16.5 CLASS 300 RF DIMENSIONS

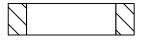
b. ADDITIONAL ALLOYS AVAILABLE PER REQUEST c. OPTIONAL PFA (TEFLON) LINING PER T400.407 (2) ADDITIONAL ALLOYS AVAILABLE PER REQUEST (3) a. OPTIONAL MATERIALS AVAILABLE PER PROCESS CONDITIONS

(1) a. STANDARD FLANGES FACED & DRILLED TO

PTFE GRAPHITE FIBER

DESIGNED IN ACCORDANCE WITH ASME B31.1 & B31.3 FOR PRESSURE VERSUS TEMPERATURE RATINGS USING ONLY LISTED METALS IN FABRICATION

UNIGLAS WINDOW





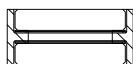


DUAL UNIGLAS WINDOWS



DRIP TUBE MODEL 90-LR-D-300 NO INDICATOR MODEL 90-LR-300







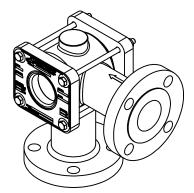
ASME PRESSURE / TEMP RATINGS PSIG / 'F (BAR / 'C)

FSIG / F (DAK / C)							
TEMP	PRESSURE						
.Ł (.C)	STEEL	316 SS					
-20 TO 100	740 (51.0)	720 (49.6)					
150 (66)	710 (49.0)	670 (46.2)					
200 (93)	680 (46.9)	620 (42.8)					
250 (121)	668 (46.1)	590 (40.7)					
300 (149)	655 (45.2)	560 (38.6)					
350 (177)	645 (44.5)	535 (36.9)					
400 (204)	635 (43.8)	515 (35.5)					
450 (232)	620 (42.7)	495 (34.1)					
500 (260)	605 (41.7)	480 (33.1)					

FOR TEMPERATURES ABOVE 500°F (260°C) TO ASME B16.5 FOR PRESSURE RATINGS



FACED AND DRILLED TO ASME B16.5 CL300 DIMS



FLANGE SIZE		Α		В		С		D (**)		APPROX. WEIGHT	
IN	DN	IN	mm	IN	mm	IN	mm	IN	mm	LBS	KGS
1	25	5.00	127	1.25	32	6.88	175	5.18	132	12	5.4
1 1/2	40	6.00	152	2.00	51	8.38	213	7.25	184	21	9.5
2	50	6.50	165	2.00	51	9.06	230	7.25	184	34	15.4
3	80	7.75	197	3.18	81	11.13	283	10.44	265	60	27.2
4	100	9.00	229	4.25	108	13.16	334	12.50	318	90	40.8
			D	IMENS	IONS (TOL ± .:	125 (3n	nm))			

(**) STANDARD BOLT LENGTH SHOWN. OPTIONAL WINDOW MATERIALS OR USE OF STUDS MAY INCREASE LENGTH

DIMENSIONAL NOTE: 1/2", 3/4", AND 1" VENT CONNECTIONS AVAILABLE IN FEMALE NPT, MALE NPT, OR FLANGED CONNECTIONS. SEE BULLITON T100.90 TO CONFIGURE.

PRESSURE VESSEL SIGHT WINDOW

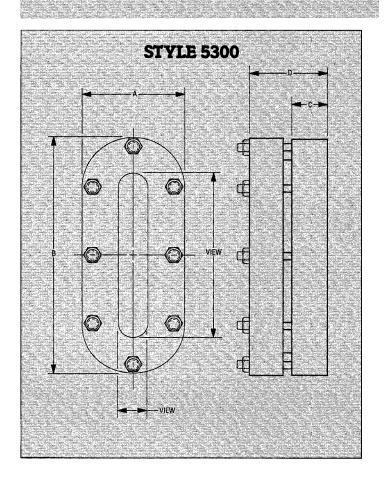


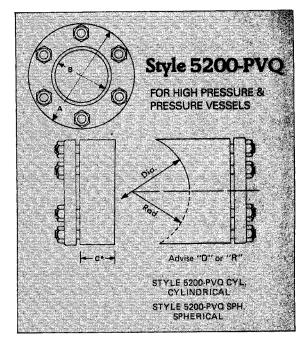
Style 5200-PVQ

These units are fabricated with code metals and are designed for attachment to pressure vessels conforming to Section VIII of the ASME Boiler and Pressure Vessel Code. They are usable in any orientation and are available with flat or curved pads. Also available with Uniglas, Dual Windows or Uniglas Dual Windows.

Size	A	В	c.
#2	3-7/8"	1-1/4"	1-3/4"
#3	5″	2"	1-3/4"
#4	6-1/2"	2-9/16"	2"
#5	7-1/2"	3-3/16"	2″
#6	8-1/4"	4-3/16"	2"
#7	9-3/8"	5-1/4"	2-1/4"
#8	11"	6-3/4"	2-1/4"

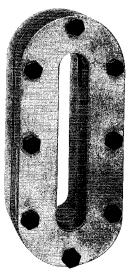
^{*}Dirnension C represents the minimum pad thickness. Thicker pads may be necessary to comply with the ASME reinforcement requirements.





Style 5300 Obround Sight Window

Fabricated with code metals, these Obround Sight Windows are suitable for use with vessels conforming to ASME code requirements. They are designed for 150 PSI working pressure and 500°F service. They may be specified with flat or curved welding pads for insertion into or attachment to tanks and vessels. Dual window units may also be specified for this style sight window.



View	A	В	С	D
1x6	3-5/8"	8-5/8"	1-1/4"	2-3/16"
2 x 12	5″	15"	1-1/4"	2-7/16"
3 x 12	6"	16"	1-1/2"	2-13/16"
3 x 18	6″	22"	1-1/2"	2-13/16"
4 x 24	7"	28″	1-1/2"	3-1/4"

Dimensions A. B. C. represent minimum welding pad dimensions, which may have to be increased to meet ASME requirements. It is the vessel designer's responsibility to determine reinforcement, corrosion allowance etc., for his particular application.

SECURITY SIGHT WINDOW

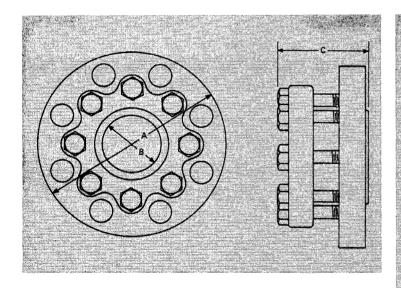


The Security Sight Window incorporates all the fine safety features of the patented Dual Window. It will add protection against stress concentration, thermal shock, corrosion or erosion, over pressure, and external mechanical forces.

Under severe corrosion conditions, request TFE lined Sight Windows Style 5005-TFE at reduced cost compared to glass lining. Special linings of rubber, FRP or PVC are also available.

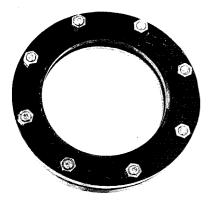
Style 5005-DW

These bolt-on type styles are designed for attachment to ANSI standard flanges or studding outlets with ANSI flange connection dimensions. There is no indicator so they are omni-positional.



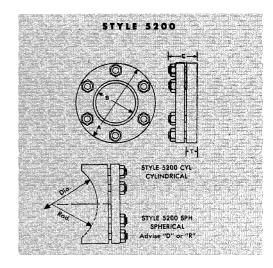
STYLE 5005-DW										
Size	Flange & Pressure Rating*	A B		С	Approx. Weight					
2"	150#	6″	2″	2-5/8"	7#					
2"	300#	6-1/2"	2"	2-23/32"	9#					
2"	600#	6-1/2"	2″	3-3/32"	10#					
3″	150#	7-1/2"	3″	3-1/16"	13#					
3″	300#	8-1/4"	3″	3-11/16"	20#					
3″	600#	8-1/4"	3″	4-5/16"	23#					
4"	150#	9″	4"	2-15/16"	21#					
4"	300#	10"	4"	4"	36#					
4"	600#	10-3/4"	4"	4-3/4"	45#					
6"	150#	11"	6"	3-9/16"	30#					
6"	300#	12-1/2"	6"	4-25/32"	54#					
6"	600#	14"	6"	6-19/32"	86#					
8″	150#	13-1/2"	8″	4-5/32"	47#					
8″	300#	15"	8″	6-3/32"	90#					
8″	600#	16-1/2"	8″	7-29/32"	137#					

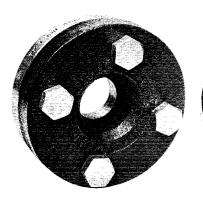
SIGHT WINDOWS—NORMAL SERVICE TO 150 PSIG



Style 5200 Weld Pad Window Style 5200

A weld pad type window to be welded directly to tank and vessel sides or covers. They are available with flat, cylindrical [5200-CYL], or spherically shaped [5200-SPH] weld pad. Specific welding instructions and requirements must be user specified for these omni-positional windows.



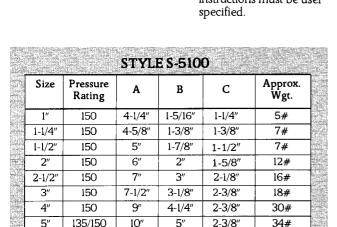


Style S-5100 Style W-5000 Female Threaded Weld neck window

Designed to be turned onto the ends of pipe for viewing in any position. window

An omni-positional sight window to be welded directly to pipe ends or into tanks and vessels. Specific welding instructions must be user

45#



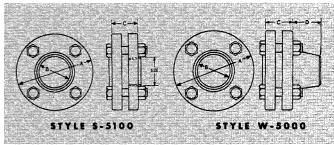
6-5/8"

2-5/8"

11"

90/150

6"



STYLE 5200

Size	A	В	С	Т	Pressure Rating	Approx. Wgt.
#2	3-5/16"	1-1/4"	1-3/4"	5/8"	150	2#
#3	4-7/16"	2"	1-13/16"	11/16"	150	3-1/2 #
#4	5-9/16"	2-9/16"	2-1/8"	3/4"	150	7#
#5	6-9/16"	3-3/16"	2-1/8"	3/4"	150	9#
#6	7-9/16"	4-1/4"	2-1/8"	3/4"	150	12#
#7	8-11/16"	5-1/4"	2-1/2"	7/8"	150	18#
#8	10-5/16"	6-7/8"	2-1/2"	7/8"	50/150	22#

STYLE W-5000

Size	Pressure Rating	A	В	С	D	Approx. Wgt.
1"	150	4-1/4"	1"	1-1/4"	1-5/8"	6#
1-1/4"	150	4-5/8"	1-3/8"	1-3/8"	1-5/8"	7#
1-1/2"	150	5″	1-5/8"	1-1/2"	1-3/4"	9#
2"	150	6"	2"	1-5/8"	1-3/4"	13#
2-1/2"	150	7"	3"	2-1/8"	1-7/8"	20#
3″	150	7-1/2"	3″	2-3/8"	1-13/16"	23#
4"	150	9″	4"	2-3/8"	2"	34#
5″	135/150	10"	5″	2-3/8"	2-1/2"	38#
6"	90/150	11"	6"	2-5/8"	2-1/2"	48#

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JACOBY-TARBOX®

16633 FOLTZ PARKWAY
STRONGSVILLE, OH 44149 USA
PH: +1 440-572-1500
www.clark-reliance.com

SIGHT FLOW INDICATOR MODEL 100-ST, 200-ST, 300-ST 150 PSIG NOMINAL SERVICE

SECTION: T400 BULLETIN: T400.15

DATE: 03/01/11 SUPERSEDES: 09/28/04 FILE NO.: T400-15.DWG

DRAWN: FWK CHECKED: DEP

SCALE: NONE

(A)———
DIA.

	PARTS LIST								
PIECE NO.	PART NAME	QTY.	STANDARD DESIGN MATERIALS						
1	BODY (SEE NOTE (1))	1	ASTM A216-WCB (CARBON STEEL) ASTM A351-CF8M (316 SS) ASTM B62 (BRONZE)						
2	RETAINER (1)	2	ASTM B16 (BRASS) ASTM A479 (316L SS)						
3	WINDOW (2)	2	ANNEALED BOROSILICATE						
4	SEAL GASKET (3)	2	NEOPRENE						
5	CUSHION GASKET	2	FIBER						
6	INDICATOR	1	FLAPPER (316SS) DRIP TUBE (316SS)						
ROTOR (PTFE) FLUTTER (PTFE)									

- (1) ADDITIONAL ALLOYS AVAILABLE PER REQUEST
 (2) a. OPTIONAL MATERIALS AVAILABLE PER
 PROCESS CONDITIONS
 - b. ADDITIONAL WINDOW OPTIONS AVAILABLE SEE BULLETIN (T400.16) FOR DETAILS



FLAPPER MODEL 100-ST



 \square ROTOR MODEL 300-ST

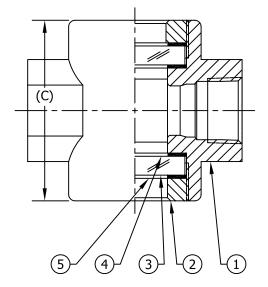
NO INDICATOR MODEL <u>100-ST(NF)</u> (AS SHOWN)



DRIP TUBE
MODEL 200-ST



TELUTTER
MODEL 100-ST-FLTR



PRESSURE / TEMP RATINGS PSIG / °F (BAR / °C) TEMP **PRESSURE** °F (°C) STEEL 316 SS **BRONZE** -20 TO 400 150 (10.34) (-29 TO 204) 150 (10.34) 150 (10.34) 401 TO 450 UNRATED (205 TO 232)

FOR ASME CLASS 150 SERVICE, AND FOR TEMPERATURES OVER 450°F (232°C), SEE BULLETIN (T400.16)

	DIMENSIONS										
NPT SIZE	А		В		С		APPROX. WEIGHT				
IN	IN	mm	IN	mm	IN	mm	LBS	KGS			
1/4	3.00	76	0.84	21	2.00	51	1.50	0.70			
3/8	3.00	76	0.84	21	2.00	51	1.50	0.70			
1/2	3.75	95	1.25	32	2.75	70	3.00	1.40			
3/4	3.75	95	1.25	32	2.75	70	3.00	1.40			
1	4.25	108	1.25	32	3.50	89	4.00	1.80			
1 1/4	5.50	140	2.00	51	4.75	114	9.00	4.00			
1 1/2	5.50	140	2.00	51	4.75	114	9.00	4.00			
2	6.25	159	2.00	51	5.00	127	11.00	5.10			

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SIGHT FLOW INDICATOR MODEL 100-SA, 200-SA, 300-SA ASME CLASS 150 SERVICE

SECTION: T400 BULLETIN: T400.16

DATE: 03/04/11 SUPERSEDES: 12/29/04

FILE NO.: T400—16.DWG

DRAWN: FWK CHECKED: DEP

SCALE: NONE

(A	A)——
— (E	3) [A.

	PARTS LIST							
PIECE NO.	PART NAME	QTY.	STANDARD DESIGN MATERIALS					
1	BODY	1	ASTM A216-WCB (CARBON STEEL)					
	(SEE NOTE (1))		ASTM A351-CF8M (316 SS) ASTM B62 (BRONZE)					
2	RETAINER (1)	2	ASTM A216-WCB (CARBON STEEL)					
ASTM A516 GR.70 (CARBON STEEL)								
3	BOLT (1)	4	ASTM A354-BD (ALLOY STEEL)					
4	NUT (1)	4	ASTM A194-2H (ALLOY STEEL)					
5	WINDOW (2)	2	TEMPERED BOROSILICATE					
6	SEAL GASKET (3)	2	NEOPRENE					
7	CUSHION GASKET	2	FIBER					
8	INDICATOR	1	FLAPPER (316SS) DRIP TUBE (316SS)					
			ROTOR (PTFE) FLUTTER (PTFE)					

NOTES (REFERENCE PARTS LIST	Γ)
-----------------------------	----

- (1) ADDITIONAL ALLOYS AVAILABLE PER REQUEST
- (2) a. OPTIONAL MATERIALS AVAILABLE PER PROCESS CONDITIONS
 - b. ADDITIONAL WINDOW OPTIONS AVAILABLE SEE SIDE SECTION FOR DETAILS

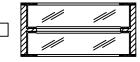
DESIGNED IN ACCORDANCE WITH ASME B31.1 & B31.3 FOR PRESSURE VERSUS TEMPERATURE RATINGS USING ONLY LISTED METALS IN FABRICATION



UNIGLAS WINDOW



DUAL UNIGLAS WINDOW



FULL VIEW
DUAL WINDOW

APPROVED



MODEL 100-SA



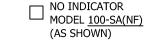
 \square ROTOR MODEL 300-SA

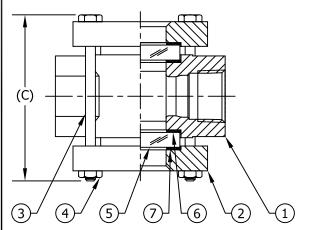


DRIP TUBE
MODEL 200-SA



コ FLUTTER MODEL <u>100-SA-FLTR</u>





/ / / / / / / / / / / / / / / / / / /							
PSIG / °F (BAR / °C)							
TEMP		PRESSURE					
°F (°C)	STEEL	316 SS	BRONZE				
-20 TO 100	285	275	225				
(-29 TO 37)	(19.65)	(18.96)	(15.51)				
150 (66)	270 (18.61)	255 (17.58)	225 (15.51)				
200 (93)	260 (17.92)	235 (16.20)	210 (14.48)				
250 (121)	245 (16.89)	225 (15.51)	195 (13.44)				
300 (149)	230 (15.86)	215 (14.82)	180 (12.41)				
350 (177)	215 (14.82)	205 (14.13)	165 (11.38)				
400 (204)	200 (13.79)	195 (13.44)	150 (10.34)				
450 (232)	185 (12.76)	180 (12.41)	UNRATED				
500 (260)	170 (11.72)	170 (11.72)	UNRATED				
FOR TEMPERATURES AROVE FORCE (2600C) REFER							

ASME PRESSURE / TEMP RATINGS

FOR TEMPERATURES ABOVE 500°F (260°C) REFER TO ASTM B16.5 FOR PRESSURE RATINGS

	DIMENSIONS							
NPT SIZE	A	4	Е	3	С	(*)	APPROX.	WEIGHT
IN	IN	mm	IN	mm	IN	mm	LBS	KGS
1/4	3.00	76	0.84	21	3.50	89	5.00	2.30
3/8	3.00	76	0.84	21	3.50	89	5.00	2.30
1/2	3.75	95	1.25	32	4.00	102	6.00	2.70
3/4	3.75	95	1.25	32	4.00	102	6.00	2.70
1	4.25	108	1.25	32	4.50	114	8.00	3.60
1 1/4	5.50	140	2.00	51	5.75	146	13.00	5.90
1 1/2	5.50	140	2.00	51	5.75	146	13.00	5.90
2	6.25	159	2.00	51	6.75	171	19.00	8.60

(*) STANDARD BOLT LENGTH SHOWN. OPTIONAL WINDOW MATERIALS OR USE OF STUDS MAY INCREASE LENGTH

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SIGHT FLOW INDICATOR MODEL S-100HPA-CL3 & S-200HPA-CL3 & S-300HPA-CL3 FOR ASME CL300 SERVICE

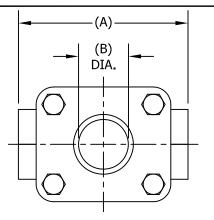
SECTION: T400 BULLETIN: T400.117

DATE: 04/22/2020 SUPERSEDES: 08/02/17

FILE NO.: T400-117.DWG

DRAWN: MWS CHECKED: DEP

SCALE: NONE

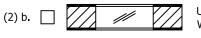


	PARTS LIST							
PIECE NO.	PART NAME	QTY.	STANDARD DESIGN MATERIALS					
1	BODY	1	ASTM A216-WCB (CARBON STEEL)					
	(SEE NOTE (1))		ASTM A351-CF8M (316 SS)					
2	RETAINER (1)	2	ASTM A216-WCB (CARBON STEEL)					
	ASTM A516 GR.70 (CARBON STEEL)							
3	BOLT (1)	4	ASTM A354-BD (ALLOY STEEL)					
4	NUT (1)	4	ASTM A194-2H (ALLOY STEEL)					
5	WINDOW (2)	2	TEMPERED BOROSILICATE					
6	SEAL GASKET (3)	2	NEOPRENE					
7	CUSHION GASKET	2	FIBER					
8	INDICATOR	1	DRIP TUBE (316SS) FLUTTER (PTFE)					
	FLAPPER (316SS)		ROTOR (PTFE) GAS INDICATOR (PTFE)					

NOTES (REFERENCE PARTS LIST)

- (1) ADDITIONAL ALLOYS AVAILABLE PER REQUEST
- (2) a. OPTIONAL MATERIALS AVAILABLE PER PROCESS CONDITIONS
 - b. ADDITIONAL WINDOW OPTIONS AVAILABLE SEE SIDE SECTION FOR DETAILS
- (3) COMMON OPTIONAL SEAL MATERIALS AVAILABLE GRAPHITE FIBER PTFE

DESIGNED IN ACCORDANCE WITH ASME B31.1 & B31.3 FOR PRESSURE VERSUS TEMPERATURE RATINGS USING ONLY LISTED METALS IN FABRICATION



UNIGLAS WINDOW



DUAL UNIGLAS WINDOW



FLAPPER S-100HPA-CL3



ROTOR S-300HPA-CL3



DRIP TUBE S-200HPA-CL3



GAS INDICATOR S-100HPA-CL3-GI



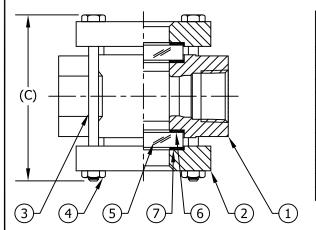
FLUTTER S-100HPA-CL3-FLTR



FULL VIEW DUAL WINDOW



NO INDICATOR S-100HPA-CL3-(NF)



ASME PRESSURE / TEMP RATINGS PSIG / °F (BAR / °C)

1							
TEMP	PRESSURE						
°F (°C)	STEEL	316 SS					
-20 TO 100	740 (51.0)	720 (49.6)					
150 (66)	710 (49.0)	670 (46.2)					
200 (93)	680 (46.9)	620 (42.8)					
250 (121)	668 (46.1)	590 (40.7)					
300 (149)	655 (45.2)	560 (38.6)					
350 (177)	645 (44.5)	535 (36.9)					
400 (204)	635 (43.8)	515 (35.5)					
450 (232)	620 (42.7)	495 (34.1)					
500 (260)	605 (41.7)	480 (33.1)					

FOR TEMPERATURES ABOVE 500°F (260°C) REFER TO ASME B16.5 FOR PRESSURE RATINGS

DIMENSIONS								
NPT SIZE	P	4	E		C	(*)	APPROX.	WEIGHT
IN	IN	mm	IN	mm	IN	mm	LBS	KGS
1/4	3.000	76	0.875	22	3.250	83	6.00	2.72
3/8	3.000	76	0.875	22	3.250	83	6.00	2.72
1/2	3.750	95	1.000	25	4.250	108	8.40	3.81
3/4	3.750	95	1.000	25	4.250	108	8.40	3.81
1	4.250	108	1.250	32	4.750	121	9.60	4.36
1 1/4	5.500	140	2.000	51	7.250	184	15.60	7.08
1 1/2	5.500	140	2.000	51	7.250	184	15.60	7.08
2	6.250	159	2.000	51	7.250	184	15.60	7.08

(*) STANDARD BOLT LENGTH SHOWN. OPTIONAL WINDOW MATERIALS OR USE OF STUDS MAY INCREASE LENGTH FOR SINGLE WINDOW (1 PER SIDE) TEMPERED GLASS THIS DRAWING AND ALL INFORMATION ON IT IS THE PROPERTY OF THE CLARK-RELIANCE CORPORATION. IT IS CONFIDENTIAL AND IS GIVEN TO YOU FOR A LIMITED PURPOSE AND MUST BE RETURNED UPON REQUEST. NEITHER THIS DRAWING NOR ANY PART OF IT NOR ANY INFORMATION CONCERNING IT MAY BE COPIED, EXHIBITED OR FURNISHED TO OTHERS NOR MAY PHOTOGRAPHS BE TAKEN OF ANY ARTICLE FABRICATED OR ASSEMBLED FROM THIS DRAWING WITHOUT CONSENT OF THE CLARK-RELIANCE CORPORATION.



|ACOBY-TARBOX®

16633 FOLTZ PARKWAY STRONGSVILLE, OH 44149 USA PH: +1 440-572-1500 www.clark-reliance.com

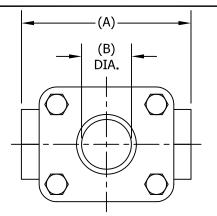
SIGHT FLOW INDICATOR MODEL S-100HPA-CL6 & S-200HPA-CL6 & S-300HPA-CL6 FOR ASME CL600 SERVICE

SECTION: T400 BULLETIN: T400.118

DATE: 08/02/17 SUPERSEDES: NEW RELEASE

FILE NO.: T400-118.DWG

DRAWN: MWS CHECKED: DEP SCALE: NONE

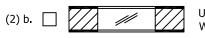


TEMPERED BOROSILICATE				
FE)				

NOTES (REFERENCE PARTS LIST)

- (1) ADDITIONAL ALLOYS AVAILABLE PER REQUEST
- (2) a. OPTIONAL MATERIALS AVAILABLE PER PROCESS CONDITIONS
 - b. ADDITIONAL WINDOW OPTIONS AVAILABLE SEE SIDE SECTION FOR DETAILS
- (3) COMMON OPTIONAL SEAL MATERIALS AVAILABLE GRAPHITE FIBER PTFE

DESIGNED IN ACCORDANCE WITH ASME B31.1 & B31.3 FOR PRESSURE VERSUS TEMPERATURE RATINGS USING ONLY LISTED METALS IN FABRICATION



UNIGLAS WINDOW



DUAL UNIGLAS WINDOW



FULL VIEW DUAL WINDOW



APPROVED



FLAPPER S-100HPA-CL6



ROTOR S-300HPA-CL6



DRIP TUBE S-200HPA-CL6



GAS INDICATOR S-100HPA-CL6-GI



FLUTTER S-100HPA-CL6-FLTR



NO INDICATOR S-100HPA-CL6-(NF)

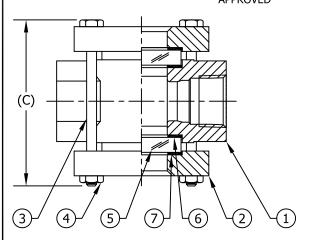
ASME PRESSURE / TEMP RATINGS PSIG / °F (BAR / °C)

, , , ,								
TEMP	PRESSURE							
°F (°C)	STEEL	316 SS						
-20 TO 100	1480 (102.0)	1440 (99.3)						
150 (66)	1420 (97.9)	1340 (92.4)						
200 (93)	1360 (93.8)	1240 (85.5)						
250 (121)	1335 (92.1)	1180 (81.4)						
300 (149)	1310 (90.3)	1120 (77.2)						
350 (177)	1288 (88.8)	1075 (74.1)						
400 (204)	1265 (87.2)	1025 (70.7)						
450 (232)	1235 (85.2)	990 (68.3)						
500 (260)	1205 (83.1)	955 (65.8)						

FOR TEMPERATURES ABOVE 500°F (260°C) REFER TO ASME B16,5 FOR PRESSURE RATINGS

DIMENSIONS								
NPT SIZE	A	4	E	3	С	(*)	APPROX	. WEIGHT
IN	IN	mm	IN	mm	IN	mm	LBS	KGS
1/4	3.750	95	0.813	21	4.250	108	7.20	3.27
3/8	3.750	95	0.813	21	4.250	108	7.20	3.27
1/2	4.500	114	1.063	27	5.000	127	13.20	5.99
3/4	4.500	114	1.063	27	5.000	127	13.20	5.99
1	4.880	124	1.250	32	5.500	140	14.40	6.53
1 1/4	6.000	152	2.000	51	7.500	191	24.00	10.89
1 1/2	6.000	152	2.000	51	7.500	191	24.00	10.89
2	6.000	152	2.000	51	7.500	191	24.00	10.89

(*) STANDARD BOLT LENGTH SHOWN. OPTIONAL WINDOW MATERIALS OR USE OF STUDS MAY INCREASE LENGTH FOR SINGLE WINDOW (1 PER SIDE) TEMPERED GLASS



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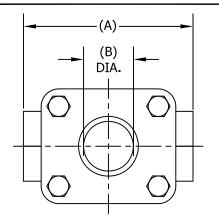
SIGHT FLOW INDICATOR MODEL S-100HPA-CL9 & S-200HPA-CL9 & S-300HPA-CL9 FOR ASME CL900 SERVICE

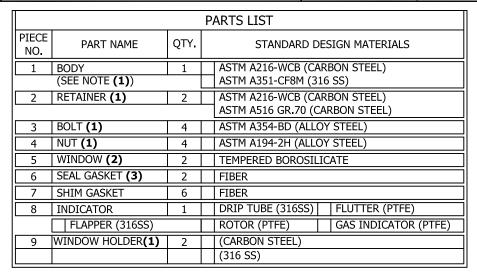
SECTION: T400 BULLETIN: T400,119

DATE: 10/13/2020 SUPERSEDES: 08/02/2017 FILE NO.: T400-119.DWG

DRAWN: MWS CHECKED: DEP

SCALE: NONE

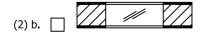




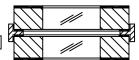
NOTES (REFERENCE PARTS LIST)

- (1) ADDITIONAL ALLOYS AVAILABLE PER REQUEST
- (2) a. OPTIONAL MATERIALS AVAILABLE PER PROCESS CONDITIONS
 - b. ADDITIONAL WINDOW OPTIONS AVAILABLE SEE SIDE SECTION FOR DETAILS

DESIGNED IN ACCORDANCE WITH ASME B31.1 & B31.3 FOR PRESSURE VERSUS TEMPERATURE RATINGS USING ONLY LISTED METALS IN FABRICATION



UNIGLAS WINDOW



DUAL UNIGLAS WINDOW



FULL VIEW DUAL WINDOW



APPROVED



FLAPPER S-100HPA-CL9



☐ ROTOR S-300HPA-CL9



DRIP TUBE
S-200HPA-CL9



GAS INDICATOR S-100HPA-CL9-GI

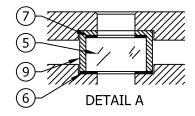


FLUTTER S-100HPA-CL9-FLTR





NO INDICATOR S-100HPA-CL9-(NF)



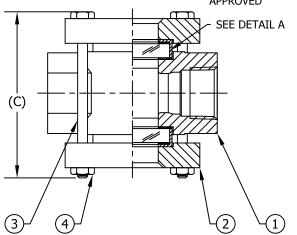
ASME PRESSURE / TEMP RATINGS PSIG / °F (BAR / °C)

TEMP	PRESSURE						
°F (°C)	STEEL	316 SS					
-20 TO 100	2220 (153.1)	2160 (148.9)					
150 (66)	2128 (146.7)	2010 (138.6)					
200 (93)	2035 (140.3)	1860 (128.2)					
250 (121)	2000 (137.9)	1770 (122.0)					
300 (149)	1965 (135.5)	1680 (115.8)					
350 (177)	1933 (133.3)	1610 (111.0)					
400 (204)	1900 (131.0)	1540 (106.2)					
450 (232)	1855 (127.9)	1488 (102.6)					
500 (260)	1810 (124.8)	1435 (98.9)					

FOR TEMPERATURES ABOVE 500°F (260°C) REFER TO ASME B16.5 FOR PRESSURE RATINGS

	DIMENSIONS											
NPT SIZE	A	4	Е	3	C (*)		APPROX. WEIGHT					
IN	IN	mm	IN	mm	IN	mm	LBS	KGS				
1/4	3.750	95	0.813	21	6.000	152	13.20	5.99				
3/8	3.750	95	0.813	21	6.000	152	13.20	5.99				
1/2	4.500	114	1.063	32	6.500	165	13.20	5.99				
3/4	4.500	114	1.063	32	6.500	165	13.20	5.99				
1	4.880	124	1.250	32	8.000	203	15.60	7.10				
1 1/4	6.000	152	2.000	51	10.500	267	32.40	14.69				
1 1/2	6.000	152	2.000	51	10.500	267	32.40	14.69				
2	6.000	152	2.000	51	10.500	267	32.40	14.69				

(*) STANDARD BOLT LENGTH SHOWN. OPTIONAL WINDOW MATERIALS OR USE OF STUDS MAY INCREASE LENGTH FOR SINGLE WINDOW (1 PER SIDE) TEMPERED GLASS.



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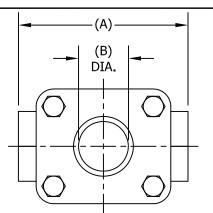
A Product of the Clark-Reliance Corporation 16633 FOLTZ PARKWAY STRONGSVILLE, OH 44149 USA PH: +1 440-572-1500 www.clark-reliance.com

SIGHT FLOW INDICATOR MODEL S-100HPA-CL15 & S-200HPA-CL15 & S-300HPA-CL15 FOR ASME CL1500 SERVICE

SECTION: T400 BULLETIN: T400.120

DATE: 10/13/2020 SUPERSEDES: 08/02/2017

FILE NO.: T400-120.DWG DRAWN: MWS CHECKED: DEP SCALE: NONE



			P	ARTS LIST					
PIECE NO.	PART NAME	QTY.		STANDARD DE	ES	IGN MATERIALS			
1	BODY	1		ASTM A216-WCB (CARBON STEEL)					
	(SEE NOTE (1))		ASTM A351-CF8M (316 SS)						
2 RETAINER (1) 2 ASTM A216-WCB (CARBON STEEL)									
				ASTM A516 GR.70 (CARBON STEEL)					
3	BOLT (1)	4		ASTM A354-BD (ALLOY STEEL)					
4	NUT (1)	4		ASTM A194-2H (ALLOY STEEL)					
5	WINDOW (2)	2		TEMPERED BOROSILI	[C/	ATE			
6	SEAL GASKET (3)	2		FIBER					
7	SHIM GASKET	6		FIBER					
8	INDICATOR	1		DRIP TUBE (316SS)		FLUTTER (PTFE)			
	FLAPPER (316SS)			ROTOR (PTFE)		GAS INDICATOR (PTFE)			
9	WINDOW HOLDER(1)	2	(CARBON STEEL)						
				(316 SS)		_			

NOTES (REFERENCE PARTS LIST)

- (1) ADDITIONAL ALLOYS AVAILABLE PER REQUEST
- (2) a. OPTIONAL MATERIALS AVAILABLE PER PROCESS CONDITIONS
 - b. ADDITIONAL WINDOW OPTIONS AVAILABLE SEE SIDE SECTION FOR DETAILS
- (3) COMMON OPTIONAL SEAL MATERIALS AVAILABLE GRAPHITE PTFE

DESIGNED IN ACCORDANCE WITH ASME B31.1 & B31.3 FOR PRESSURE VERSUS TEMPERATURE RATINGS USING ONLY LISTED METALS IN FABRICATION



UNIGLAS WINDOW

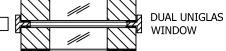




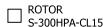






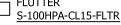


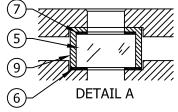




DRIP TUBE S-200HPA-CL15 **GAS INDICATOR** S-100HPA-CL15-GI





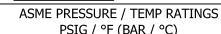




FULL VIEW DUAL WINDOW FM

APPROVED





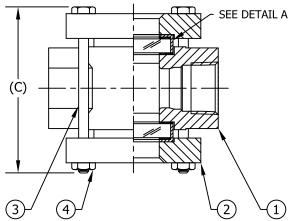
	310 / 1 (D/ III)	<u> </u>				
TEMP	PRESSURE					
°F (°C)	STEEL	316 SS				
-20 TO 100	3705 (255.5)	3600 (248.2)				
150 (66)	3550 (244.8)	3348 (230.8)				
200 (93)	3395 (234.1)	3095 (213.9)				
250 (121)	3333 (229.8)	2945 (203.1)				
300 (149)	3270 (225.5)	2795 (192.7)				
350 (177)	3220 (222.0)	2683 (185.0)				
400 (204)	3170 (218.6)	2570 (177.2)				
450 (232)	3093 (213.3)	2480 (171.0)				
500 (260)	3015 (207.9)	2390 (164.8)				

FOR TEMPERATURES ABOVE 500°F (260°C) REFER

TO ASME B16.5 FOR PRESSURE RATINGS

	DIMENSIONS											
NPT SIZE	A	4	В		C (*)		APPROX. WEIGHT					
IN	IN	mm	IN	mm	IN	mm	LBS	KGS				
1/4	3.750	95	0.813	21	6.000	152	14.40	6.53				
3/8	3.750	95	0.813	21	6.000	152	14.40	6.53				
1/2	4.500	114	1.063	27	7.500	191	15.60	7.08				
3/4	4.500	114	1.063	27	7.500	191	15.60	7.08				
1	4.880	124	1.250	32	8.000	203	16.80	7.62				
1 1/4	6.000	152	2.000	51	10.500	267	40.80	18.51				
1 1/2	6.000	152	2.000	51	10.500	267	40.80	18.51				
2	6.000	152	2.000	51	10.500	267	40.80	18.51				

(*) STANDARD BOLT LENGTH SHOWN. OPTIONAL WINDOW MATERIALS OR USE OF STUDS MAY INCREASE LENGTH FOR SINGLE WINDOW (1 PER SIDE) TEMPERED GLASS.



JACOBY·TARBOX[®]

PRODUCT OF CLARK-RELIANCE

Full-View Sight Flow Indicator Flanged Bulls-Eye Models

150 ASME Class

Section: T100 Bulletin: T100.20 Date: 01/2024

Supersedes: 12/2017

Jacoby-Tarbox's full ASME rated line of flanged bullseye sight flows have been engineered per the design criteria of the ASME B31.1 & 31.3 Power & Chemical Piping Codes, incorporating all ASTM listed materials for the pressure retaining components: bodies, fasteners, and retainers. This standard setting group of features include full ASME code compliance with regards to yield criteria, materials, and pressure / temperature ratings.

"Out-of-the-box Compliance"

ASME B31.1 & B31.3 **CRN** – All Provinces **API 614**

NACE MR0175 / ISO15156-1 MRO103*

PED (Specify when ordering for proper tagging)

*All Wetted Metals

Process View Maximized

View matches or exceeds pipe inside diameter, allowing 100% unobstructed process observation of liquids, slurries, gases and solids.

Minimal Pressure Drop

Non-rotor models have unrestricted flow as all internal openings are no smaller than the pipe's inside diameter.

Safely View process properties such as color, clarity, air entrainment, and interface.

Economically View drain, lube, hydraulic, condensate, food and return lines.



Standard Features:

- Single window tempered borosilicate (1 per side / 2 total)
- Body with integrally cast ASME flanges up to 8" (DN 200)
- 100% Hydrotest (See schedule T100.35)

Window and Shield Options:

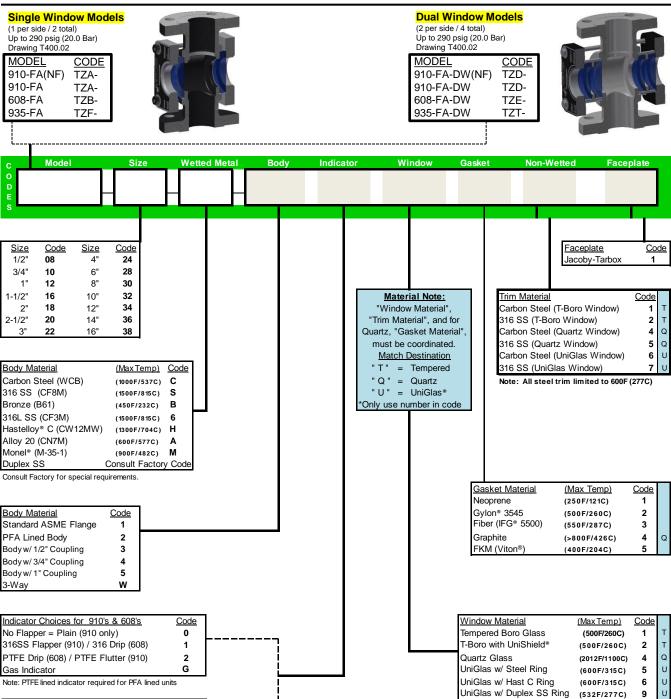
- FM Approved dual window tempered borosilicate (2 per side / 4 total)
- UniShield® Window Protection bonded PFA shielding for chemical resistance
- UniGlas® fused safety windows*
 - * Over 35 years without a single failure ask us for details.

	Plain		Flapper		Rotor		Drip		Gas Indicator	
Class 150	910-FA(NF)		910-FA		935-FA		608-FA		910-FA-GI	
Indicator	None		316 Weighted Flapper with 316 Pin		PTFE Rotor with 316 Pin		316 Drip Tube		Ultralight Weight PTFE Indicator with 316 Mount	
Flow	Bi- Directional	+	Uni- Directional	←	Bi- Directional	\	Uni- Directional	1	Uni- Directional	-
Orientation	Horizontal or Vertical		Horizontal or Vertical Upward	1	Horizontal or Vertical	+	Vertical Downward or Horizontal	T	Horizontal or Vertical Upward	4
Application	Observe presence or absence of fluid		Flow changes by flapper position		Indicates relative process velocity by rotation speed		Condensing gasses (drip) or partially full liquid lines		Gas flows. Low velocity liquid flow in full lines	

A PRODUCT OF CLARK-RELIANCE

Part Number Matrix

Class 150 Flanged Bulls-Eye Sight Flow Indicators



Rating Notes:

Indicator Choices for 935's

Note: ONLY use when PTFE is not compatible when process or temperature exceeds 500F (260C)

Standard PTFE Rotor 316 SS Rotor - (See Note) Code

2

Design Temperature: Unit Temperature rating based on the lowest "Max Temperature" of selected components (ie. body, glass, gaskets) **Design Pressure:** Actual Unit Pressure rating based on body material as defined by ASME B16.5 material group.

High Pressure Flanged Sight Flow Indicators

ASME Class 300, 600, 900, 1500

Section: T100 Bulletin: T100.25 Date: 01/2024 Supersedes: 08/2017

Jacoby-Tarbox's Full ASME rated line of high pressure flanged bulls-eye sight flow indicators are engineered per the design criteria of ASME B31.1 & B31.3, Power and Process Piping Codes, incorporating the listed ASTM materials for all metals in the unit construction.

"Out-of-the-box Compliance"

ASME B31.1 & B31.3 **CRN** – All Provinces **API 614**

NACE MR0175 / ISO15156-1 MRO103*

PED (Specify when ordering for proper tagging)

*All Wetted Metals

Process View Maximized

View matches or exceeds pipe inside diameter, allowing 100% unobstructed process observation of liquids, slurries, gases and solids.

Minimal Pressure Drop

Non-rotor models have unrestricted flow as all internal openings are no smaller than the pipe's inside diameter.

Safely View process properties such as color, clarity, air entrainment, and interface.

Economically View drain, lube, hydraulic, condensate, food and return lines.



Standard Features:

- Single window tempered borosilicate (1 per side / 2 total)
- Body with integrally cast ASME flanges (CL300/600) up to 4" (DN100)
- 100% Hydrotest (See schedule T100.35)

Window and Shield Options:

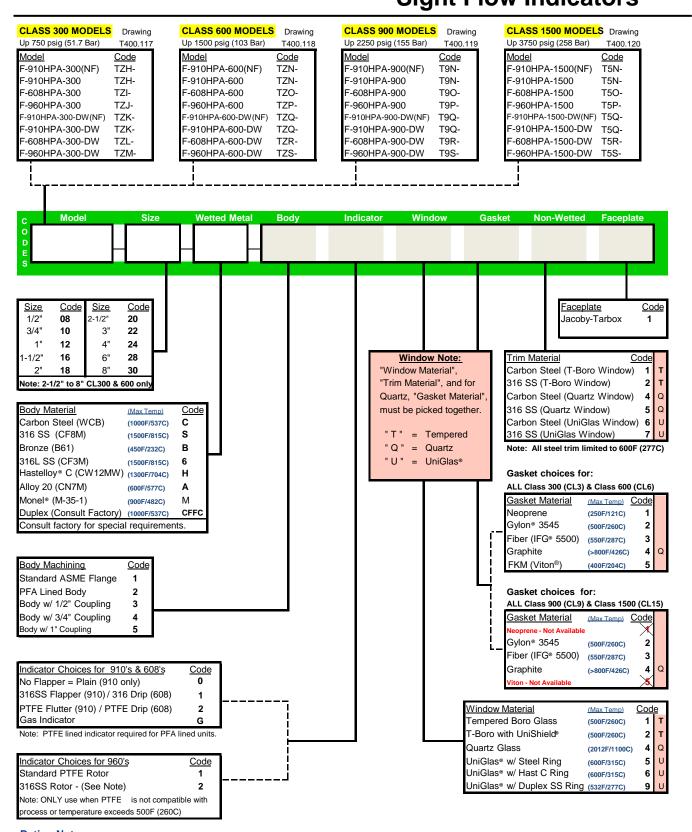
- FM Approved dual window tempered borosilicate (2 per side / 4 total)
- UniShield® Window Protection bonded PFA shielding for chemical resistance
- UniGlas® fused safety windows*

^{*}Over 35 years without a single failure – ask us for details.

	Plain		Flapper		Rotor		Drip		Gas Indicator		
Class 300	F-910HPA-300 (NF)		F-910H	PA-300	F-960HP	A-300	F-608HPA	A-300	F-910HP	\-300-GI	
Class 600	F-910HPA-600 (NF)		F-910HPA-600		F-960HP	A-600	F-608HPA	A-600	F-910HP	\-600-GI	
Class 900	F-910HPA-900 (NF)		F-910HPA-900		F-960HPA-900		F-608HPA-900		F-910HPA-900-GI		
Class 1500	F-910HPA-1	500 (NF)	F-910HPA-1500		F-960HPA	\-1500	F-608HPA	-1500	F-910HPA	-1500-GI	
Indicator	None		316 Weighted Flapper with 316 Pin		PTFE Rotor with 316 Pin		316 Drip Tube	e	Ultralight Wei		
Flow	Bi- Directional	+	Uni- Directional	+	Bi- Directional	*	Uni- Directional	+	Uni- Directional	-	
Orientation	Horizontal or Vertical	+	Horizontal or Vertical Upward		Horizontal or Vertical	+	Vertical Downward or Horizontal	T	Horizontal or Vertical Upward	1	
Application	Observe pres		Flow changes position	Flow changes by flapper		Indicates relative process velocity by rotation speed		Condensing gasses (drip) or partially full liquid lines		Gas flows. Low velocity liquid flow in full lines	

PRODUCT OF CLARK-RELIANCE

Part Number Matrix High Pressure Flanged Sight Flow Indicators



Rating Notes:

Design Temperature: Unit Temperature rating based on the lowest "Max Temperature" of selected components (ie. body, glass, gaskets) **Design Pressure:** Actual Unit Pressure rating based on body material as defined by ASME B16.5 material group.

DRAWN: TFK CHECKED: DEP SCALE: NONE DATE: 9/15/95



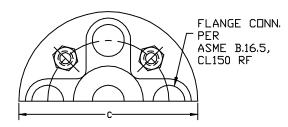
SIGHT FLOW INDICATOR STYLE 830-F, 830-FD

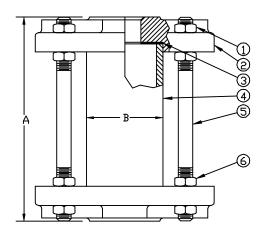
Section: T400 Bulletin: T400.36

Date: 09/01/03 Supersedes: 12/01/00

VARIOUS PRESSURES

FILE NO.: T400-36.DWG





STYLE 830-F

STANDARD DESIGN MATERIALS:

ODY: ASTM A216-WCB/A516 GR 70/A36/A576 (CARBON STEEL)

ASTM A351-CF8M/A240/A276 (316 SS) □

ASTM B62 (BRONZE) □

ASTM A126 CLASS B (CAST IRON)

FASTENERS: STEEL

DRIP TUBE: 316 SS/PTFE

OPTIONAL ALLOYS FURNISHED UPON REQUEST

OPTIONAL FEATURES:

SPECIAL LENGTHS UP TO 48 INCHES AVAILABLE ("A" DIM) PRESSURE RATINGS DECREASE WITH ADDITIONAL LENGTH

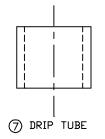
MODEL: 830-FL-TFE

SPECIAL ETCHED TUBES (VOLUME/LENGTH) PER APPLICATION 304/316 SS TRIM AVAILABLE

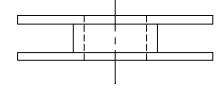
PARTS LIST

PIECE ND.	NAME OF PART	QUAN.	MATERIAL	COMMENTS
1	NUTS	8	STEEL	
2	HEAD	2	SEE BELOW	
3	SEAL GASKET	2		
4	CYLINDER	1	A-B□R□	
5	RODS	4	STEEL	
6	NUTS	8	STEEL	
7	INDICATOR	1		

STANDARD OPTIONS:



STYLE 830-FD (STD.) STYLE 830-FD-TFE (TFE LINED DRIP)* * ADD 3/8 (IN) TO "A" DIM



STYLE 830-F-TFE (PLAIN) ADD 1/4 (IN) TO "A" DIM

PTFE LINING

					DIME	DIMENSIONS					
PSI	IS	ZE		4		В		С		WEIGHT	
	IN	DN	IN	mm	IN	mm	IN	mm	LBS	KGS	
150	1/2	15	3-7/8	98	1-1/4	സ	3-1/2	89	3-1/2	1.6	
150	3/4	20	3-7/8	98	1-1/2	വ	3-7/8	98	4	1.8	
150	1	25	4	102	1-3/4	44	4-1/4	108	5	2.3	
120	1-1/2	40	4	102	2-1/2	64	5	127	6	2.7	
100	2	50	4-3/4	121	3	76	6	152	11-1/2	5.2	
85	2-1/2	65	5-3/8	137	3-1/2	89	7	178	15	6.8	
100	3	80	5-3/8	137	4	102	7-1/2	191	19	8.6	
70	4	100	7-1/2	191	5	127	9	227	22	10.0	
45	6	150	10-1/4	260	7	178	11	279	56	25.4	
25	8	200	14	356	9-1/8	232	13-1/2	343	68	30.8	
15	10	250	14-1/8	359	11	279	16	406	87	39.4	
15	12	300	14-1/4	362	13	330	19	483	131	59.4	

DRAWN: TFK CHECKED: DEP SCALE: NONE DATE: 9/15/95



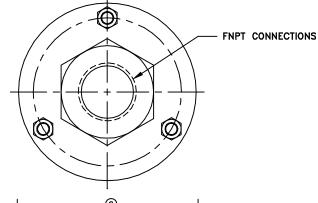
SIGHT FLOW INDICATOR STYLE 805-S, 805-SD

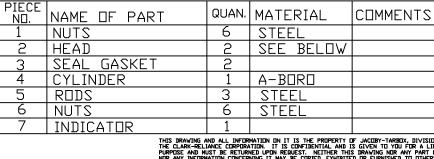
Section: T400 Bulletin: T400.37

Date: 09/01/03 Supersedes: 12/01/00

VARIOUS PRESSURES

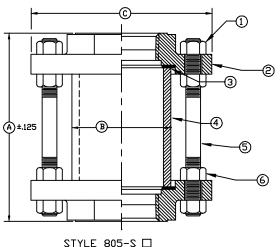
FILE NO.: T400-37.DWG



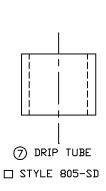


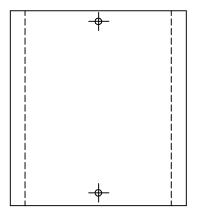
STANDARD OPTIONS:

PARTS LIST



PRESSURE/TEMP. RATINGS										
TEMP	ALL M	MATERIALS *								
F	1/8 T□ 1	1-1/4,1-1/2	2							
-20 TO 100	150	120	100							
150	150	120	100							
200	150	120	100							
250	150	120	100							
300	150	120	100							
350	150	120	100							
400	150	120	100							
450	150	120	100							





ACRYLIC SHIELD AVAIL ALL STYLES

STANDARD DESIGN MATERIALS:

HEAD: ASTM A216-WCB/A515 GR 70/A36/A576 (CARBON STEEL) □

ASTM A351-CF8M/A240/A276 (316 SS) □

ASTM B62 (BRONZE)

ASTM A126 CLASS B (CAST IRON)

FASTENERS: STEEL DRIP TUBE: 316 SS

OPTIONAL ALLOYS FURNISHED UPON REQUEST

OPTIONAL FEATURES:

SPECIAL LENGTHS UP TO 48 INCHES AVAILABLE ("A" DIM) PRESSURE RATINGS DECREASE WITH ADDITIONAL LENGTH

MODEL: 850-SL

SPECIAL ETCHED TUBES (VOLUME/LENGTH) PER APPLICATION

304/316 SS TRIM AVAILABLE

*	BRONZE	AND	CAST	IR□N	$N\Box T$	RECOMMENDED	FOR
	SERVICE	- ABI	1VF 4	00 F			

		DIMENSIONS								
					וויונע	-1121PI12				
PSI	SI	ZE		4	В		С		WEIGHT	
	IN	DN	IN	mm	IN	mm	IN	mm	LBS	KGS
150	1/8	15	4-1/2	114	1-3/4	44	3-3/4	95	2.0	.9
150	1/4	20	4-1/2	114	1-3/4	44	3-3/4	95	2.0	.9
150	3/8	25	4-1/2	114	1-3/4	44	3-3/4	95	2.0	.9
150	1/2	40	4-1/2	114	1-3/4	44	3-3/4	95	2.0	.9
150	3/4	50	4-1/2	114	1-3/4	44	3-3/4	95	2.0	.9
150	1	65	4-1/2	114	2	51	4-1/4	108	3.0	1.4
120	1-1/4	80	4-3/4	120	2-1/2	64	4-3/4	121	4.0	1.8
120	1-1/2	100	4-3/4	120	2-1/2	64	4-3/4	121	4.0	1,8
100	2	150	5-1/2	140	3	76	5-3/4	146	7.0	3.2

DRAWN: TFK CHECKED: DEP SCALE: NONE DATE: 9-15-95



SIGHT FLOW INDICATOR 860-F

Bulletin: T400.39 Date: 09/01/03

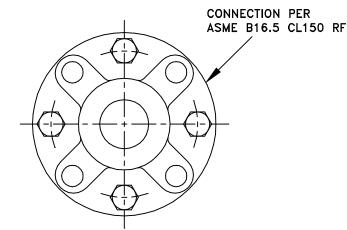
Section:

Date: 09/01/03 Supersedes: 06/01/01

T400

VARIOUS PRESSURES

FILE NO.: T400-39.DWG



5

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		PARTS LIST											
	PIECE ND.	NAME OF PART	QUAN.	MATERIAL	COMMENTS								
Ī	1	HEAD	2	SEE BELOW									
	N	B□DY	1	CAST IRON									
	თ	CYLINDER	1	ANN. BOROSILICATE									
	4	GASKET **	2										
	5	BUI IS	8	STFFI									

**NOTE: AVAILABLE W/ NEOPRENE STANDARD, VITON, SILICONE, AND TEFLON ENVELOPE WITH ONE OF THE ABOVE AS AN INSERT

STANDARD DESIGN MATERIALS:

HEAD: ASTM A216-WCB (CARBON STEEL) ☐
ASTM A351-CF8M (316 SS) ☐

ASTM B62 (BRONZE) □

ASTM A126 CLASS B (CAST IRON)

BODY: ASTM A278 CLASS 30 (IRON)

*BODY IS NOT A WETTED COMPONENT

FASTENERS: SAE GRADE 5 (ZINC PLATED STEEL)

INDICATOR: N/A

OPTIONAL ALLOYS FURNISHED UPON REQUEST

OPTIONAL LININGS:

PFA TEFLON 30-40 MILS FOR FULL VACUUM SERVICE

OPTIONAL FEATURES:

SPECIAL LENGTHS UP TO 48 INCHES AVAILABLE ("A" DIM) PRESSURE RATINGS DECREASE WITH ADDITIONAL LENGTH

MODEL: 860-FL

SPECIAL ETCHED TUBES (VOLUME/LENGTH) PER APPLICATION 304/316 SS TRIM AVAILABLE

PRESSURE/TEMP. RATINGS

TEMP	ALL MATERIALS *						
TEMP F	1/2 TO 1-1/2	Ω	2-1/2 3				
-20 T□ 100	150	120	100				
150	150	120	100				
200	150	120	100				
250	150	120	100				
300	150	120	100				
350	150	120	100				
400	150	120	100				
450	150	120	100				

* BRONZE AND CAST IRON ARE NOT RECOMMENDED FOR SERVICE ABOVE 400 F

	2
	4
A 1	R R

STYLE 860−F □

DIMENSIONS										
PIPE	<u> </u>	Α		В		C		APPROX. WGT.		SURE ING
SIZE	IN.	mm	IN.	mm	IN.	mm	LBS.	KGS.	PSIG	BAR
1/2	6-1/8	156	13/16	21	3-1/2	89	5	വ്	150	10.3
3/4	6-3/8	162	1-1/16	27	3-7/8	98	8	3.6	150	10.3
1	6-3/8	162	1-1/16	27	4-1/4	108	11	5	150	10.3
1-1/2	6-3/4	171	1-5/8	41	15	127	16	7.3	150	10.3
2	7-5/8	194	2	51	Ф	152	23	10.4	120	8.3
2-1/2	7-7/8	200	2-3/8	61	7	178	31	14	100	6.9
3	8-1/8	206	2-3/4	70	7-1/2	191	33	15	100	6.9

DRAWN: TFK CHECKED: DEP SCALE: NONE DATE: 9/15/95



SIGHT FLOW INDICATOR
4000-S

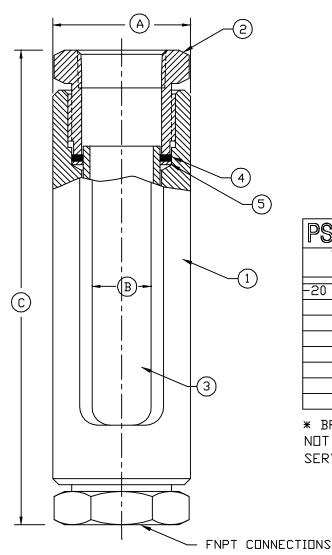
Section: T400 Bulletin: T400,41 Date: 09/01/03

Supersedes: 12/01/00

VARIOUS PRESSURES

FILE NO.: T400-41.DWG

☐ STYLE 4000-S



	PARTS LIST								
PIECE N□.	NAME OF PART	QUAN.	MATERIAL	COMMENTS					
1	B□DY	1	BRONZE						
N	HEAD	Ŋ	SEE BELOW						
W	CYLINDER	1	ANN. BOROSILICATE						
4	GASKET **	N							
5	GASKET SUPPORT	2	BR□NZE						

**NOTE: AVAILABLE W/ NEOPRENE STANDARD, VITON, SILICONE, AND TEFLON ENVELOPE WITH ONE OF THE ABOVE AS AN INSERT

PSIG/TEMP RATINGS TEMP ALL MATERIALS* 1/8 TD 1-1/2 -20 TD 100 150 150 150 200 150 250 150 150 300 350 150 400 150 450 150

* BRONZE AND CAST IRON NOT RECOMMENDED FOR SERVICE ABOVE 400°F STANDARD DESIGN MATERIALS:

HEAD: ASTM A216-WCB (CARBON STEEL) □

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ASTM A351-CF8M (316 SS) □

ASTM B62 (BRONZE) □

ASTM A126 CLASS B (CAST IRON)

BODY: ASTM B62 (BRONZE)

*BODY IS NOT A WETTED COMPONENT

GASKET SUPPORT: BRASS UNS C36000 H02

INDICATOR: N/A

OPTIONAL ALLOYS FURNISHED UPON REQUEST

				D	IMENSION:	S				
PIPE	1	4	E	}	С		APP V	ROX. GT.	PRES RAT	SURE ING
SIZE	IN.	mm	IN.	mm	IN.	mm	LBS.	KGS.	PSIG	BAR
1/8	1.50	38	.75	19	4,88	124	1	.45	150	10.3
1/4	1.50	38	.75	19	4.88	124	1	.45	150	10.3
3/8	1.50	38	.75	19	4.88	124	1	.45	150	10.3
1/2	1.75	45	1.00	25	6.00	152	2	.91	150	10.3
3/4	2.00	51	1,25	32	6.62	168	2.5	1.1	150	10.3
1	2.00	51	1.25	32	6.62	168	2.5	1.1	150	10.3
1-1/4	2.88	73	1.75	45	8.88	226	6	2.7	150	10.3
1-1/2	2.88	73	1.75	45	8,88	226	6	2.7	150	10,3

A PRODUCT OF CLARK-RELIANCE

Full-View Sight Flow Indicator Threaded Bulls-Eye Models

150 psig Nominal Rated & ASME Class 150

Section: T100 Bulletin: T100.10 Date: 01/2024 Supersedes: 12/2017

Jacoby-Tarbox's line of threaded bulls-eye sight flow indicators are engineered per the design criteria of ASME B31.1 & B31.3, Power and Process Piping Codes, incorporating the listed ASTM materials for all metals in the unit construction. Two families are available, one for nominally rated systems up to 150 PSIG and a second for full ASME rated systems.

"Out-of-the-box Compliance"

ASME B31.1 & B31.3 **CRN** – All Provinces **API 614**

NACE MR0175 / ISO15156-1 MRO103*

PED (Specify when ordering for proper tagging)

*All Wetted Metals

Process View Maximized

View matches or exceeds pipe inside diameter, allowing 100% unobstructed process observation of liquids, slurries, gases and solids.

Minimal Pressure Drop

Non-rotor models have unrestricted flow as all internal openings are no smaller than the pipe's inside diameter.

Safely View process properties such as color, clarity, air entrainment, and interface.

Economically View drain, lube, hydraulic, condensate, food and return lines.



Standard Features:

- Single Window (1 per side / 2 total)
- Cast Body
- 100% Hydrotest (See schedule T100.35)

Window and Shield Options (SA Only):

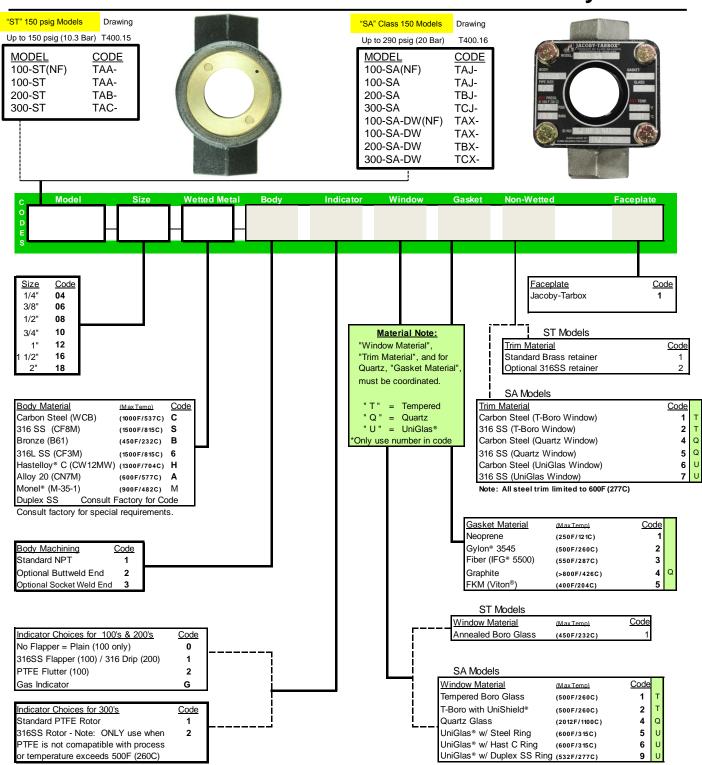
- FM Approved dual window tempered borosilicate (2 per side / 4 total)
- UniShield® Window Protection bonded PFA shielding for chemical resistance
- UniGlas® fused safety windows

*Over 35 years without a single failure – ask us for details.

(ST Models Shown)	Plain	Flapper	Rotor	Drip	Gas Indicator	
150 psig	100-ST(NF)	100-ST	300-ST	200-ST	100-ST-GI	
Class 150	100-SA(NF)	100-SA	300-SA	200-SA	100-SA-GI	
Indicator	None	Weighted Flapper With 316 pin	PTFE Rotor With 316 pin	316 Drip Tube	Ultralight Weight PTFE Indicator With 316 Mount	
Flow	Bi- Directional	Uni- Directional	Bi- Directional	Uni- Directional	Uni- Directional	
Orientation	Horizontal or Vertical	Horizontal or Vertical Upward	Horizontal or Vertical	Vertical Downward or Horizontal	Horizontal or Vertical Upward	
Application	Observe presence or absence of fluid	Judge flow changes by flapper position	Indicates relative process velocity by rotation speed	Condensing gasses (drip) or partially full liquid lines	Gas flows. Low velocity liquid flow in full lines	

PRODUCT OF CLARK-RELIANCE

150 psig & ASME Class 150 Threaded Bulls-Eye



Rating Notes:

Design Temperature: Unit Temperature rating based on the lowest "Max Temperature" of selected components (ie. body, glass, gaskets) **Design Pressure:** Actual Unit Pressure rating based on body material as defined by ASME B16.5 material group.

High Pressure Threaded Sight Flow Indicators

ASME Class 300, 600, 900, 1500

Section: T100 Bulletin: T100.15 Date: 01/2024 Supersedes: 12/2017

Jacoby-Tarbox's Full ASME rated line of high pressure threaded bulls-eye sight flow indicators are engineered per the design criteria of ASME B31.1 & B31.3, Power and Process Piping Codes, incorporating the listed ASTM materials for all metals in the unit construction.

"Out-of-the-box Compliance"

ASME B31.1 & B31.3 **CRN** – All Provinces **API** 614

NACE MR0175 / ISO15156-1 MRO103*

PED (Specify when ordering for proper tagging)

*All Wetted Metals

Process View Maximized

View matches or exceeds pipe inside diameter, allowing 100% unobstructed process observation of liquids, slurries, gases and solids.

Minimal Pressure Drop

Non-rotor models have unrestricted flow as all internal openings are no smaller than the pipe's inside diameter.

Safely View process properties such as color, clarity, air entrainment, and interface.

Economically View drain, lube, hydraulic, condensate, food and return lines.



Standard Features:

- Single window tempered borosilicate (1 per side / 2 total)
- Cast Body
- 100% Hydrotest (See schedule T100.35)

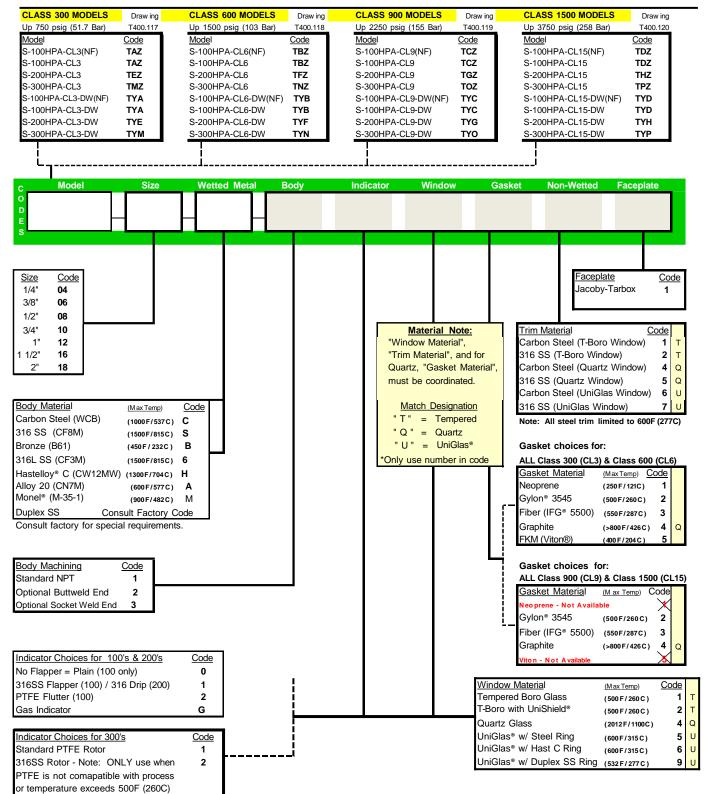
Window and Shield Options:

- FM Approved dual window tempered borosilicate (2 per side / 4 total)
- UniShield® Window Protection bonded PFA shielding for chemical resistance
- UniGlas® fused safety windows*
 - * Over 35 years without a single failure ask us for details.

	Plain		Flapper		Rotor		Drip		Gas Indicator	
Class 300	Class 300 S-100HPA-CL		S-100HP	A-CL3	S-300HF	A-CL3	S-200HPA	-CL3	S-100HPA	-CL3-GI
Class 600	S-100HPA-	CL6(NF)	S-100HPA-CL6		S-300HPA-CL6		S-200HPA-CL6		S-100HPA-CL6-GI	
Class 900	S-100HPA-CL9(NF)		S-100HPA-CL9		S-300HPA-CL9		S-200HPA-CL9		S-100HPA-CL9-GI	
Class 1500	S-100HPA-CL15(NF)		S-100HPA-CL15		S-300HPA-CL15		S-200HPA-CL15		S-100HPA-CL15-GI	
Indicator	None		316 Weighted Flapper with 316 Pin		PTFE Rotor with 316 Pin		316 Drip Tube		Light Weight PTFE Indicator with 316 Mount	
Flow	Bi- Directional	†	Uni- Directional	1	Bi- Directional	‡	Uni- Directional	1	Uni- Directional	1
Orientation	Horizontal or Vertical	+	Horizontal or Vertical Upward	1	Horizontal or Vertical	+	Vertical Downward or Horizontal	Ŧ	Horizontal or Vertical Upward	1
Application	Observe pre absence of f		Flow changes by flapper position		Indicates relative process velocity by rotation speed		Condensing gasses (drip) or partially full liquid lines		Gas flows. Low velocity liquid flow in full lines	

A PRODUCT OF CLARK-RELIANCE

Part Number Matrix High Pressure Threaded Sight Flow Indicators



Rating Notes:

Design Temperature: Unit Temperature rating based on the lowest "Max Temperature" of selected components (ie. body, glass, gaskets) **Design Pressure:** Actual Unit Pressure rating based on body material as defined by ASME B16.5 material group.