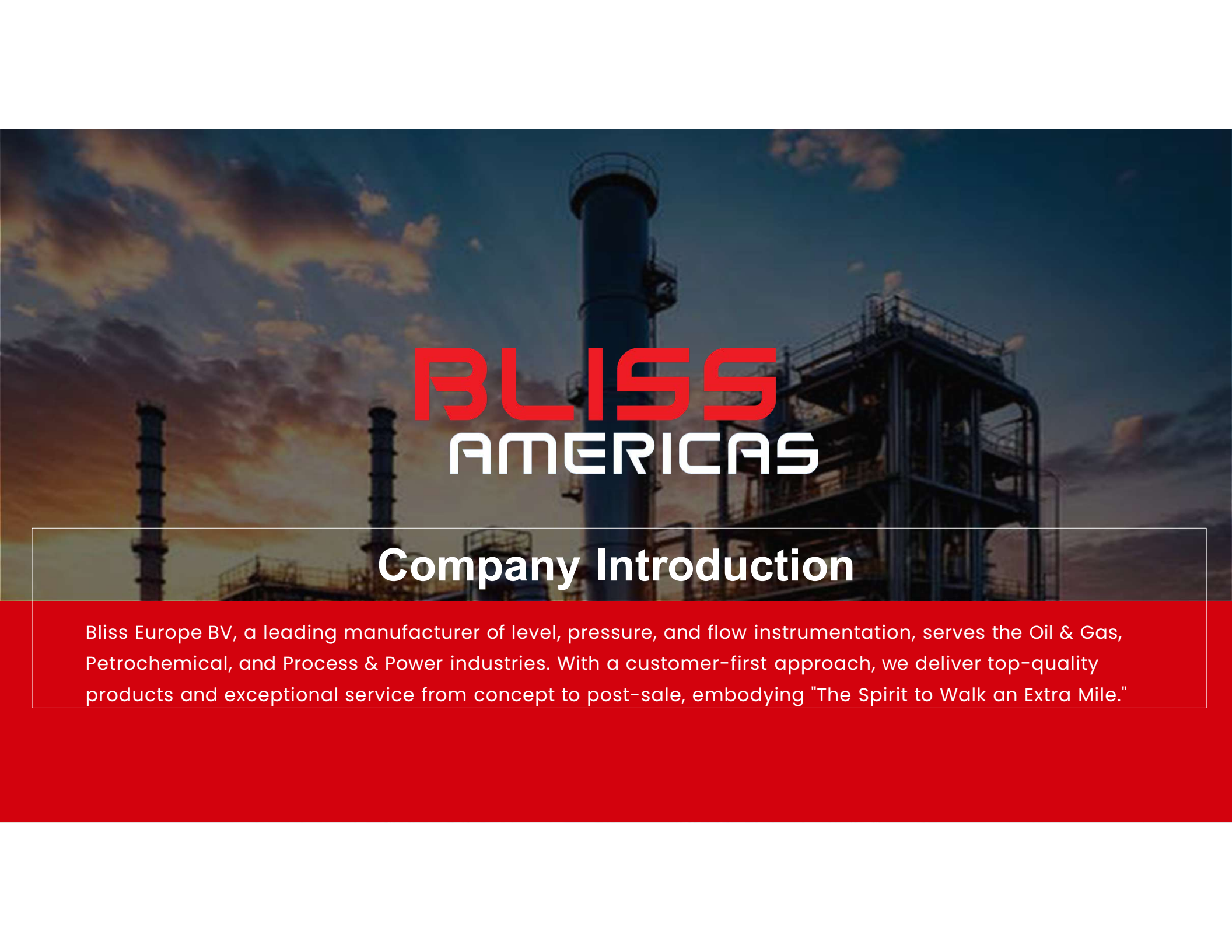


The background of the slide is a photograph of an industrial facility, likely a refinery or chemical plant, featuring tall distillation columns and complex piping. The scene is captured during sunset or sunrise, with a sky filled with orange and blue clouds. The company logo is overlaid on the center of the image.

BLISS AMERICAS

Company Introduction

Bliss Europe BV, a leading manufacturer of level, pressure, and flow instrumentation, serves the Oil & Gas, Petrochemical, and Process & Power industries. With a customer-first approach, we deliver top-quality products and exceptional service from concept to post-sale, embodying "The Spirit to Walk an Extra Mile."

Timeline

BLISS
AMERICAS

- Established in 1975 – “49 Years” of manufacturing experience
- Specializes in Field Instrumentation for Oil & Gas, Petrochemical & Power industries
- 300+ employees
- 5 Production facilities globally
- Production – floor area: 1.2 MM ft²

Product Range

BLISS
AMERICAS



Magnetic Level
Gauge



Sight Flow
Indicator



Instrument
Chamber



Glass Level
Gauge



Gauge Valve



Plug Valve

Magnetic Level Gauges

BLISS
AMERICAS

Introduction:

Magnetic level gauges are highly accurate, low-maintenance alternatives to sight glasses and other outdated level indicators. They provide redundant, non-invasive level indication while eliminating leak points and fugitive emissions. Their robust design is ideal for high temperatures, high pressures and corrosive services.

Principle of Operation:

Magnetic level gauges consist of a float chamber with process connections suitable for installation to the vessel. The process connections may be side couplings, flanges or other configurations.

The magnetic bar graph indicator is externally mounted to the float chamber; therefore, it is not a wetted part and is isolated from the process. Flipper-style indicators are standard with bright, contrasting colours for clear and concise level indication.

The bar graph indicators are operated by the custom float installed in the chamber. Contained within the float is a 360° magnet assembly, which operates the external bar graph indicators through the chamber pipe wall. Floats are designed to meet the application process specific gravity and pressure, and are sized accordingly.



Model Selection Guide



MAGNETIC LEVEL GAUGE SELECTION GUIDE - BAM 92 Series

Selection	Suffix Codes																Description
A Orientation Style	A																Side-Side Flanged
	B																Side-Side Screwed
	C																Top & Bottom
	D																Side-Side with Top Flanged
	E																Side-Side Screwed with Top Flanged
	F																Top & Side Flanged
	G																Top & Side Screwed
	H																Top Mounted
B Chamber Material	x																Special
	S1																316 SS
	S2																316 SS
	S6																Inconel 625
	S8																Inconel 625
	HA																Hastelloy-C 276
	KY																PVDF
	PP																Polypropylene
	PV																PVC/CPVC
	xx																Special
C Float Material	S2																SS-316 / 316L
	TI																Titanium
	PV																PVC/CPVC
	PP																Polypropylene
	KY																PVDF
	HA																Hastelloy
	xx																Special
	F																Flanged
D Process Connection Type	S																Screwed
	W																Welded
	x																Special
E Process Connection Size	1																1/2"
	2																3/4"
	3																1"
	4																1 1/2"
	5																2"
	6																2 1/2"
	7																3"
	8																4" (Only Top Mounted)
	A																150#
	B																300#
F Process Connection Rating	C																600#
	D																900#
	E																1500#
	F																2500#
	T																NPT(F) - 3000#
	x																Special
	TH																Threaded
	RF																RF
	WN																WNRF
	WU																WNRTJ
G Indicator Type	SI																SCRTJ
	xx																Special
	F																Flipper
	S																Shuttle
I Indicator Construction	AL																Aluminum Enclosure With AL Flap
	SS																St. Steel Enclosure With SS Flap
J Scale	xx																Special
	NS																No Scale
	SM																St. Steel in mm
	SI																St. Steel in inches
	xx																Special

MAGNETIC LEVEL GAUGE SELECTION GUIDE - BAM 92 Series

Selection	Suffix Codes																Description
K Vert Connection	PL																Plugged
	FL																Flanged
	FV																Flanged with Valve
	SV																Screwed with Valve
L Vert Connection Size	XX																Special
	1																1/2"
	2																3/4"
	3																1"
M Vert Connection Rating	X																Special (Specify)
	A																150#
	B																300#
	C																600#
	D																900#
	E																1500#
	F																2500#
	T																NPT(F) - 3000#
N Vert Connection Type	X																Special (Specify)
	TH																Threaded
	RF																RF
	WN																WNRF
O Drain Connection	SJ																SCRTJ
	WU																WNRTJ
	xx																Special (Specify)
	PL																Plugged
P Drain Connection Size	PL																Flanged
	FV																Flanged with Valve
	SV																Screwed with Valve
	XX																Special
Q Drain Connection Rating	1																1/2"
	2																3/4"
	3																1"
	X																Special (Specify)
R Drain Connection Type	A																150#
	B																300#
	C																600#
	D																900#
	E																1500#
	F																2500#
	T																NPT(F) - 3000#
	X																Special (Specify)
	TH																Threaded
	RF																RF
S Options & Specials	WN																WNRF
	SJ																SCRTJ
	WU																WNRTJ
	XX																Special (Specify)
T C/C Distance	NA																No Optional Accessories
	HT																Heat Tracing (External)
	MX																Transmitter Magnetostrictive
	SW																Point Switch (SPDT Reed)
U Indicating Range	IN																Insulation
	FS																Frost Shield
	CY																Cryogenic Application
	XX																Special
V Application	XXXX																Specify with unit
	L																Specify with unit
	I																Interphase
	XXX																To Specify
W Liquid Density (Upper)																	To Specify
X Liquid Density (Lower)																	To Specify

MAGNETIC LEVEL GAUGE

ORDERING INFORMATION

The following information is required to order or request a quotation for Magnetic Level Gauges. Use the following configuration Guide to select the model number.

Required Information

- Magnetic Level Gauge to be used for : A) Level
B) Interface Level
C) Level & Interface
- Service Liquid, please specify
A) Upper Liquid & Specific Gravity
B) Lower Liquid & Specific Gravity
- Operating Pressure _____
Maximum Pressure _____
- Operating Temperature _____
Maximum Temperature _____
Minimum Temperature _____

Model No. Configuration

BAM92 A/B/C/D/E/F/G/H/I/J/K/L/M/N/O/P/Q/R/S/T/U/V/W/X

SPECIAL APPLICATION

All gauge dimensions are nominal except CL or measuring θ

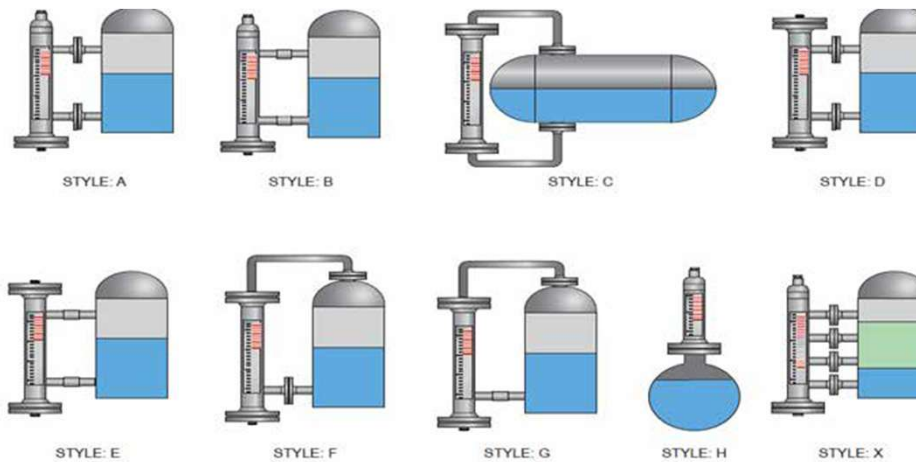
Standard chamber size is 2. Schedule 40.

(Consult Factory)

Basic Information Required to Obtain the Quote

- Service (Fluid or application)
- Specific gravity
- Process conditions Design/Operating Temperature and Design/Operating pressure
- Material of construction
- Size/type of process connection
- Scale graduation requirements (Optional)

Type of MAG Gauges Installations



Engineered Solutions

BLISS
AMERICAS

Application: Flashing

Service Fluid: Liquid Ammonia Standard chamber

- Causes floats to sink
- Incorrect indication
- No space for vapors to pass
- Erratic movement of float inside the chamber
-

Bliss's Solution

- Smooth operation
- Oversized chamber (3")
- Accurate level indication
- Float held between guide rods, closer to indicator
- Guide rods to allow vapors to pass through the vacant area
-



What is Cryogenics?

- Cryogenic liquids have boiling points below -240°F
- It is a study of production of extremely low temperatures
- All Cryogenic liquids are gases at normal temperatures and pressures
- E.g.: Nitrogen, Argon, Helium, Hydrogen, Methane, LNG, Oxygen, etc.



Engineered Solutions

BLISS
AMERICAS

- In order to guarantee the LNG cold temperature of - 256 °F high quality insulation is required
- Insulation systems consisting of Polyisocyanurate (PIR) rigid foam applied in multiple layers, in combination with high performance vapour barriers are used in order to produce the necessary degree of insulation.
- Mechanical and weather protection to the installed insulation is achieved by the application of specified cladding materials, which include stainless steel; Aluminised steel.



Engineered Solutions

BLISS
AMERICAS

Bliss's Solution

- Oversized chamber (3")
- Guide rods to ensure floats are closer to the indicating assembly
- Acrylic frost extensions are provided
- Prevents frost accumulation and ensures clear visibility
- Special insulating material ensures the process fluid remains in liquid state at temp. up to -320°F Float held between guide rods, closer to indicator

Application: Cryogenic
Service Fluid: LNG
Temp.: 36°F - 320
°F



Other Highlights



- Level indication viewable up to 150 feet away
- No process liquid in contact with indicator glass
- Ideal for high-temperature, high-pressure and corrosive applications
- Manufactured to meet ASME B31.1/B31.3 or PED 97/23 as specified
- Magnetostrictive and radar transmitter options for non-invasive and/or redundant level control
- Float failure indication (Standard)
- All external parts SS316 or as specified
- 360° magnetic coupling
- Full corrosion resistance system
- Measurement is unaffected by pressure, vacuum, temperature, foam and viscosity at design condition
- Minimum sensitivity to density variation
- Permanent local indication without external power supply
- Optional adjustable alarm switches
- Safe, environment friendly and trouble-free design
- Indicating assembly certified to IP-66

Acurage™ with GWR

BLISS
AMERICAS

Introduction:

Acurage™ with GWR: Auto-Calibrating Unique Radar Gauge for True Level Reading and Online Smart Calibration of Process Applications.

Specification:

A Blend of Mechanical and Electronic Components Allowing End Users to Determine Real Time True Level Indication/Output of Process Liquids with Added Advantage Feature of Safety Ball Checks.

Key Features:

- Blend of mechanical and electronic components
- Enables end users to determine real-time true level indication/output
- Specifically designed for process liquids
- Added advantage feature of safety ball checks for enhanced safety
-



Glass Level Gauge

BLISS
AMERICAS

Introduction:

Level Gauge standard construction includes a solid one-piece chamber machined from carbon steel with covers, toughened glass and chrome molybdenum bolts and nuts. All metal parts are rust proofed. Recessed gasket seat prevent movement and insure leak-free service.

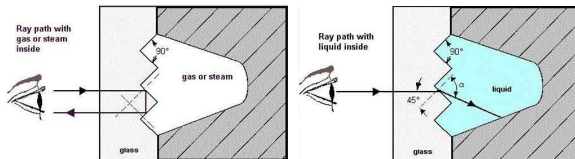


Glass Level Gauge

Principle of Operation:

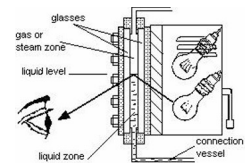
REFLEX

- Works on the principle of Total Internal Reflection.
- These gages are equipped with glasses which have "prisms" that are molded & fitted into the wetted side.
- **Recommended for:**
 - Clean, Light liquids, high pressure, & medium temperature.
 - **Not recommended for Steam Applications above 300 WSP.**



TRANSPARENT

- These gages are equipped with flat glasses.
- The glasses can be shielded from the process (because of flat glasses), by using MICA or PCTFE (Kel-F) Sheets.
- Illuminators to supplement ambient light.
- **Recommended for:**
 - Liquid-liquid interface
 - Dark and thick liquids.
 - High Temperature & Medium Pressure applications, where shielding of glass is required.
- **Steam applications above 300 WSP is to be supplied with expansion loop.**



Model Selection Guide



GLASS LEVEL GAUGE SELECTION GUIDE

Gauge Column

Selection		Suffix Codes										Description	
A	Gauge Type	R											Reflex Gauge
		T											Transparent Gauge
		U											Tubular Gauge
B	No. Of Sections	W											Weld Pad
		1											Section 1
		2											Section 2
		3											Section 3
		4											Section 4
		5											Section 5
		6											Section 6
		7											Section 7
		8											Section 8
C	Glass Size	9											Section 9
		1											115 mm
		2											140 mm
		3											165 mm
		4											190 mm
		5											220 mm
		6											250 mm
		7											280 mm
		8											320 mm
D	Liquid Chamber type	9											340 mm
		L											Large Chamber
		M											Mid Pressure Chamber
E	Material of Chamber	H											High Pressure Chamber
		C											CS (A696)
		S											SST. 316
F	Cover Material	X											Special (specify)
		1											A105
		2											F316
G	Fasteners	X											Special (specify)
		1											B7 & 2H
		2											B8 & 8M
H	Glass	X											Special (specify)
		B											T. Eurosilicate
		X											Special (specify)
I	Gasket							N					IFG 5500
								P					Oraflo SS316 Reinforced
								P					PTFE
								X					Special (specify)
J	Cushion							N					IFG 5500
								G					Oraflo SS316 Reinforced
								P					PTFE
K	Gauge / Chamber Conn. Size							X					Special (specify)
									1				1/2 NPT (F)
									2				1/2" NPT with Union
L	Gauge / Chamber Connection								X				Special (specify)
										PN			Plain Nipple Screwed
										SU			Spherical Union
										PU			Plain Union
M	Gauge connection Orientation									XX			Special (specify)
										E			Top & Bottom (End)
										X			Side /Side(Close Hookup)
N	Visible Distance												Special (specify)
											XXXX		Specify with Units

GLASS LEVEL GAUGE SELECTION GUIDE

Auto Shutoff-Valves

Selection	Suffix Codes						Description
0 Valve Model	00						No Valve
	10						Tubular LG Valve (Straight)
	20						Integral Bonnet
	26						Tubular LG Valve (Offset)
	40						Union Bonnet
	83						Straight Pattern With NPT(F) Gauge Connection
	84						Straight Pattern With NPT(F) Union Gauge Connection
	86						Offset Pattern With NPT(F) Gauge Connection
	87						Offset Pattern With NPT(F) Union Gauge Connection
	XX						Special (Specify)
P Body Material	C						Al306
	S						F316
	X						Special (specify)
Q Trim		S					SST 316
		X					Special (specify)
R Closing			P				Plain
			Q				Quick
S Vessel / Tank Connection			SUM				Spherical Union Male
			SUF				Spherical Union Female
			PUM				Plain Union Male
			PUF				Plain Union Female
			SSM				Solid Shank Male
			FLG				Flanged
			XXX				Special (specify)
T Vessel / Tank Conn. Size				1			1/2" NPT
				2			3/4" NPT
				3			3/4"150#
				4			3/4"300#
				5			1"150#
				6			1"300#
				X			Special (specify)
U Ball Check					0		No Ball Check
					1		Ball Check Provided
V Valve Packing						1	Graphite
						2	Grafol
						3	PTFE
						X	Special (specify)
W Body-Bonnet Gasket					1		Sp. Wound SS316 + Graphite Filler
					2		Sp. Wound SS316 + Grafol Filler
					3		Sp. Wound SS316 + PTFE Filler
					X		Special (specify)
X Accessories						00	NI
						10	Illuminator IIA IIB
						11	Illuminator IIC
						20	Scale SST304, mm
						21	Scale SST316, mm
						30	Frost Shield
						40	Mica Shield
						41	KEL-F Shield
						50	Support Bracket
						60	Heating Jacket External
						61	Heating Jacket Internal
						70	Vent Plug 1/2" NPT
						71	Vent Valve 1/2" Ball NPT
						7X	Vent Valve Special
						80	Drain Plug 1/2" NPT
						81	Drain Valve 1/2" Ball NPT
						8X	Drain Valve Special
						90	PTFE Lined
						95	NACE Wetted Parts
						XX	Special (specify)

Sight Flow Indicator

BLISS
AMERICAS

Introduction:

"Sight Flow Indicators provide an effective way to view the condition of liquids or solids flowing through pipelines at most any flow, pressure, or temperature, a major advantage over electronic devices where it is difficult to distinguish if there is a flow problems or malfunction in the device. Bliss Europe Sight Flow Indicators assure a direct and positive indication of flow rate, flow direction and condition of the medium being transported plus enable a means of inspecting pipelines for dirt, scale and foreign matter."



MODEL – Flapper, Rotary & Drip Designs

Flapper models indicate flow by the position of a vane or flapper in the center of the viewing window and are recommended for applications involving transparent or slightly opaque solutions. Frequently specified to indicate the variations in the flow rate of gases as well as liquids. Flapper models are bi-directional designed for horizontal and upward vertical flow applications. When it is not necessary to visualize flow motion, the same basic sight flow indicator is supplied without a flapper component.

Rotary models indicate flow by the spinning of a rotor and are suitable for any flow direction and are especially suited for applications involving dark solutions. The rotor motion is easily seen, even from great distances and recommended for uses with transparent solutions or gases. Rotors are supplied in materials that are impervious to many kinds of fluids and should be used if the flow rate is to be detected.

Drip models are for vertical downward flow applications in distillation and similar systems involving extremely low or intermittent flow. A strong advantage of a drip model is absolutely no obstruction to downward flow. Plain models without drip tubes operate effectively with flow in any direction and those with tubes have them positioned in the center window area for ease of observation.

Model Selection Guide



DOUBLE WINDOW SIGHT FLOW INDICATORS

FLANGED

MODELS - 1000F

For pipe size 1" thru 6" with any flow direction. Best suited to lines motion is easily detected. It can be used with transparent solutions observations must be made at a distance.

MODEL - 1000F



MODEL - 2000F

For pipe sizes 1/2" thru 12" in horizontal lines or vertical lines with upward flow. Style 2000F is best suited to transparent or slightly opaque solutions and may be used for gases. Variation in flow rates is indicated by position of the flapper. All sizes are supplied without flapper on order. 14" and 16" sizes are available without flapper only.

MODEL - 2000F



MODEL - 3000F

For pipe sizes 1/2" thru 10" in lines with vertical downward flow. Drip type indicators are particularly suited to distillation or similar apparatus with intermittent flow

MODEL - 3000F



MODEL - 1000-2000-3000F - 150

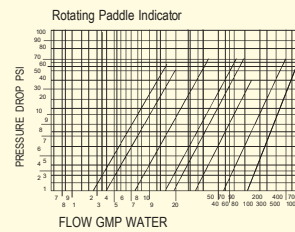
PIPE SIZE	DIMENSIONS				PR. RATING PSIG
	mm	inch	mm	inch	
1/2" & 3/4"	117	4.60	29	1.14	150
1"	143	5.63	32	1.25	150
1 1/2"	165	6.49	50	1.96	150
2"	200	7.87	50	1.96	150
2 1/2" & 3"	239	9.40	81	3.18	150
4"	280	11.02	111	4.37	150
6"	362	14.25	175	6.88	50/150
8"	410	16.14	214	8.42	50/150
10"	629	24.76	240	9.44	50/150
12"	655	25.78	280	11.02	50/150
14"	679	26.73	280	11.02	50/150

MODEL - 1000-2000-3000F - 150

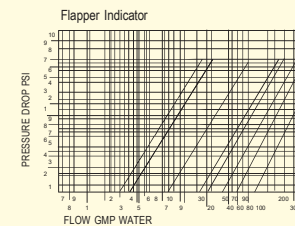
PIPE SIZE	DIMENSIONS				PR. RATING PSIG
	mm	inch	mm	inch	
1/2" & 3/4"	150	5.90	25	0.98	
1"	175	6.88	32	1.25	
1 1/2"	190.5	7.50	50	1.96	
2"	219	8.62	50	1.96	300
2 1/2" & 3"	289	11.37	81	3.18	
4"	336	13.22	108	4.25	
6"	543	21.37	140	5.51	
8"	585	23.03	140	5.51	

PRESSURE DROP CHART

Rotating Indicator



Flapper Indicator



MATERIAL OF CONSTRUCTION

Body - Material

A 216 Grade WCB
A 351 Grade CF8
A 351 Grade CF8M
A 351 Grade CF3
A 351 Grade CF3M
A 217 Grade WC6
A 182 F 11
A 182 F 51
A 182 F 5
Special

Cover - Material

A 216 Grade WCB
A 351 Grade CF8
A 351 Grade CF8M
A 351 Grade CF3
A 351 Grade CF3M
A 217 Grade WC6
A 182 F 11
A 182 F 51
A 182 F 5
Special

* Steam Jack available on request

* Teflon lined Sight Glass also available on request

Instrument Chambers

BLISS
AMERICAS

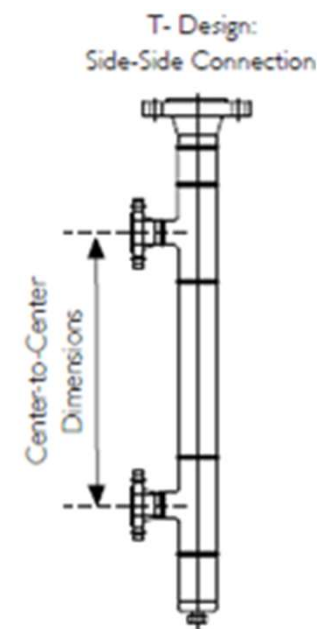
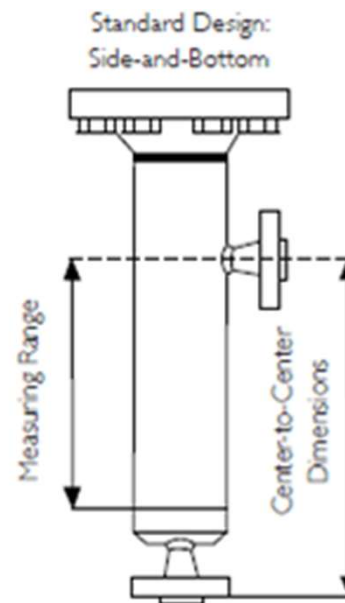
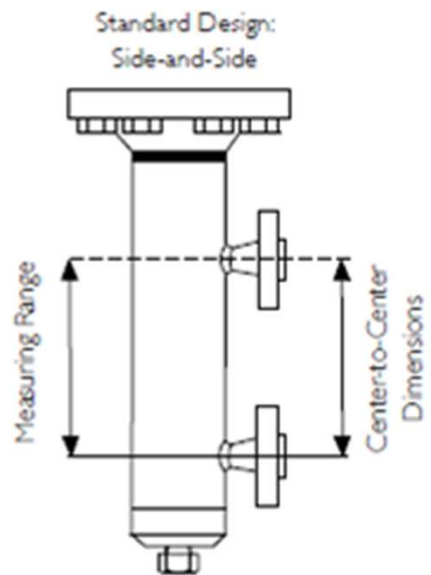
Introduction:

"Also known as a cage, it houses the liquid process being measured and instrument's sensing element. There are many types of process connections on the body of the chamber which allow mounting to the vessel.

This configuration allows an instrument to be isolated with valves for maintenance without disturbing plant operation. It is also useful for in-tank restrictions that do not allow mounting of the instrument in a vessel. This approach offers many advantages when solving application challenges. The instrument is mounted on top of the chamber with the flanged or threaded instrument connection. A thread version is available for the vertical float level switch."



Various Configurations



Model Selection Guide



INSTRUMENT CHAMBER SELECTION GUIDE BAC 92 SERIES

Selection	Suffix Codes	Description
A Instrument Type	G	GWR
	V	Vertical Level Switch
	H	Horizontal Level Switch
B Mounting Style	SS	Side-Side
	SB	Side-Bottom
	xx	Special (Specify)
C Chamber Material	CS	A106 Gr. B
	LF	A333
	S2	SS-316 / 316 L
	S8	Inconel 825
	xx	Special (Specify)
D Instrument Chamber Size	2	2"
	3	3"
	4	4"
	x	Special (Specify)
E Instrument Chamber Pipe Schedule	A	Sch. 10
	B	Sch. 40
	C	Sch. 80
	D	Sch. 160
	x	Special (Specify)
F Instrument Connection Size (Flanged)	2	2"
	3	3"
	4	4"
	x	Special (Specify)
G Instrument Connection Rating (Flanged)	A	150#
	B	300#
	C	600#
	D	900#
	E	1500#
	F	2500#
	x	Special (Specify)
H Instrument Connection Finish (Flanged)	RF	RF
	WN	WNRF
	SJ	SORTJ
	WU	WNRTJ
	xx	Special (Specify)
I Chamber Bottom Style	D	Dished End
	B	Bottom cover
	x	Special
J Process Connection Size	1	1/2"
	2	3/4"
	3	1"
	4	1.5"
	5	2"
	6	2.5"
	7	3"
	8	4"
	x	Special (Specify)
K Process Connection Rating	A	150#
	B	300#
	C	600#
	D	900#
	E	1500#
	F	2500#
	T	NPT(F) - 3000#
	x	Special (Specify)
L Process Connection Type	TH	Threaded
	RF	RF
	WN	WNRF
	SJ	SORTJ
	WU	WNRTJ
	xx	Special (Specify)

INSTRUMENT CHAMBER SELECTION GUIDE BAC 92 SERIES

Selection	Suffix Codes	Description
M Vent Connection	PL	Plugged
	FL	Flanged
	FV	Flanged with Valve
	SV	Screwed with Valve
	XX	Special
N Vent Connection Size	1	1/2"
	2	3/4"
	3	1"
	X	Special (Specify)
O Vent Connection Rating	A	150#
	B	300#
	C	600#
	D	900#
	E	1500#
	F	2500#
	T	NPT(F) - 3000#
	X	Special (Specify)
P Vent Connection Type	TH	Threaded
	RF	RF
	WN	WNRF
	SJ	SORTJ
	WU	WNRTJ
	XX	Special (Specify)
Q Drain Connection	PL	Plugged
	FL	Flanged
	FV	Flanged with Valve
	SV	Screwed with Valve
	XX	Special
R Drain Connection Size	1	1/2"
	2	3/4"
	3	1"
	X	Special (Specify)
S Drain Connection Rating	A	150#
	B	300#
	C	600#
	D	900#
	E	1500#
	F	2500#
	T	NPT(F) - 3000#
	X	Special (Specify)
T Drain Connection Type	TH	Threaded
	RF	RF
	WN	WNRF
	SJ	SORTJ
	WU	WNRTJ
	XX	Special (Specify)
U Mounting Accessories	00	No Accessories
	SN	Studs & Nuts
	GS	Gasket Spiral Wound
	GF	Gasket Flat (Gra.)
	GX	Gasket Special
V C to C or C to B Distance	XXXX	Specify with unit

Note: Other information as per data sheet

Instrument Chambers



Key Features:

- Allows external mounting of process level instrumentation.
- Ideal for critical applications
- **Can be combined with Maggage & Sight Glass for dual indications.©**
- Ability to manufacture in Exotic MOC like Hastelloy C, Monel, etc.,.
- **Designed to ASME B31.3**
- Pressure Equipment Device (PED) compliant.
- Process connections are welded directly onto the chamber body, which ensures minimum no. of welds, for increased safety.
- **One Package for MLG+ X'r + LG©**

Flexibility & Highlights:

- Allows external mounting of process level instrumentation
- Ideal for critical area and general purpose applications
- Power, Petro-Chemical, Refining, Oil & Gas, Chemical and Process Steam
- 38 years of experience in designing and manufacturing chambers in accordance with international codes
- Variety of process connections and optional drain and vent connections
- Used by major industries worldwide
- Enables live maintenance
- Designed to ASME B31.3
- Pressure Equipment Directive (PED) complaint
- Custom designs service available
- For use in applications up to ASME B16.5 Class 2500 and EN1092 PN250
- Available in carbon steel, stainless steel and other alloys

Instrument Chambers



Chamber Design:

The Bliss instrument chamber is designed to the ASME B31.3 standard. Weld neck flanges and full penetration welds in accordance with EN ISO 15614-1:2004 and ASME Boiler and pressure Vessel Code Section IX are used throughout. All welders are qualified to EN 287-1:2004 and ASME Boiler and pressure Vessel code section IX. Every chamber is hydro-tested as standard. There are two designs available: **Standard Design and T-piece Design.**

Standard Design:

With the standard design, the process connections are welded directly onto the chamber body. This keeps the number of welds to a minimum for increased Safety. Pressure ratings up to and including ASME B16.5 Class 2500.

T-Piece Design:

T-Piece design is used, Unequal T's are used so the larger process connections can fit on the smaller chamber body. Pressure ratings of up to and including ASME B16.5 Class 2500.

Drain & Vent (Optional):

A drain allows liquid to be drained away and allows maintenance of the instrument. It is always specified for a side-and-side chamber. A vent is optional and allows gas in the upper zone above the liquid to be vented off. Both the drain and vent are available as threaded or flanged in a variety of sizes. Special types are also available upon request.

Gauge Valve

BLISS
AMERICAS

Introduction:

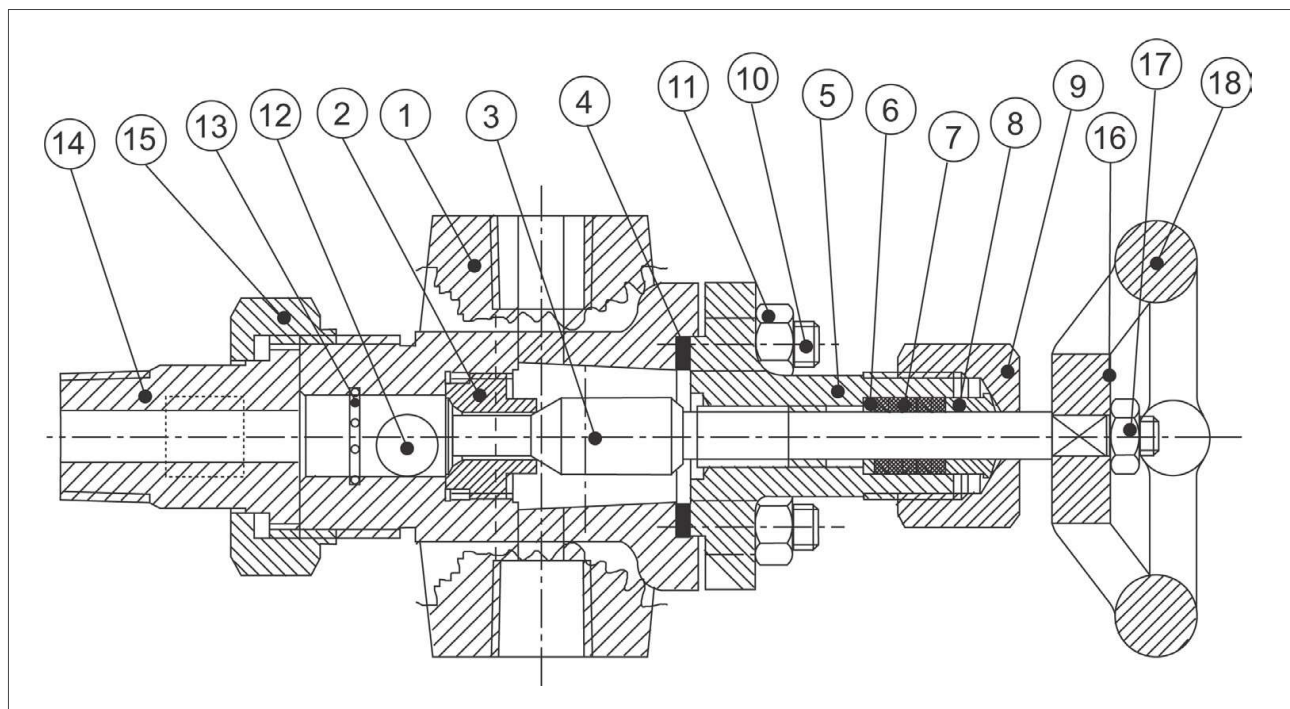
BLISS Europe Valves are designed in various construction. Valves are equipped with stainless steel ball checks, stem back seating and offset construction. Union gauge connections is optional.



Gauge Valve

BLISS
AMERICAS

PART NO.	PART NAME	STD MATERIAL
1	VALVE BODY	A-105 / F-316L
2	RENEWABLE SEAT	SS-316
3	SPINDLE	SS-316L
4	BONNET GASKET	SP WOUND SS 316+ GRAFOIL
5	BONNET	A-105/ F-316L
6	GLAND STOPPER	SS-316
7	PACKING RING	GRAPHITE
8	GLAND FOLLOWER	SS-316
9	GLAND NUT	STEEL
10	BONNET STUD	A-193 GR. B7
11	BONNET NUT	A-194 GR. 2H
12	BALL	SS 316
13	BALL STOPPER	SS 304
14	TAIL PIECE	STEEL
15	UNION NUT	STEEL
16	HAND WHEEL	WCB
17	NAME PLATE	SS 304
18	HAND WHEEL NUT	STEEL



Gauge Valve

BLISS
AMERICAS

Standard Features:

BACKSEATING STEM:

When the valve is opened to its limit, the stem seats against the bonnet allowing the valve to be repacked while under pressure.

STRAIGHT BODY PATTERN:

The straight body is of a straight forward angle pattern, with the gauge, drain and vessel connections on intersecting centrelines.

OFFSET BODY PATTERN:

The Offset body is an angle pattern valve, with the centreline of the gauge and drain connections offset 22mm from the centreline of the vessel connections. Hence by removing the vent/drain plugs, the interior of a top and bottom connected gauge glass may be cleaned without removing the gauge.

UNION GAUGE CONNECTION:

Both the straight and the offset can be furnished with a union gauge connection which allows a top and bottom connected gauge to be turned to any desired angle for convenient visibility. It also makes possible the removal of the gauge without removing the valves, a feature which saves time when the gauges must be cleaned or serviced.

Standard

Vessel Connections: 3/4" NPT male

I : 1/2" NPT female

Drain : 1/2" NPT female

Gauge

Optional

Connections:

Vessel

I

: 1/2" NPT male or 3/4" NPT male for socket weld or flanged to suit requirements.
Series 80 valves can be supplied with ANSI 150, 300 or 600 integral flanges.

**Gauge
s**

: On union connected valves 1/2" NPT male or 3/4" NPT male. On all valves 3/4" NPT female screwed and 1/2" or 3/4" female socket weld recess.

Vent/Drain

:

3/4" NPT female screwed and 1/2" or 3/4" female socket weld recess. vent & drain valves on request.

Connections are also available screwed.

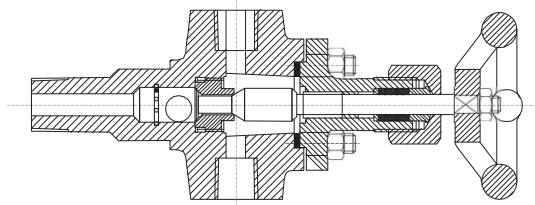
Safety Shut Off:

Valves may be provided with stainless steel ballcheck which instantaneously shuts off flow of the medium being gauged in the event of glass breakage. The ball operates upstream from the seat and can be furnished for vacuum seating if required.

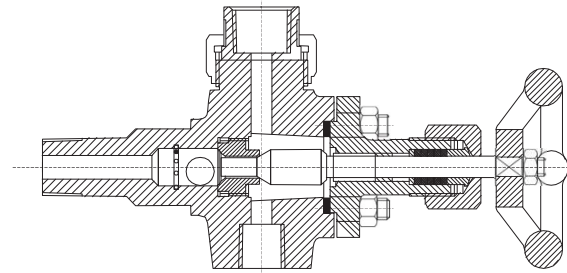
Gauge Valve

BLISS
AMERICAS

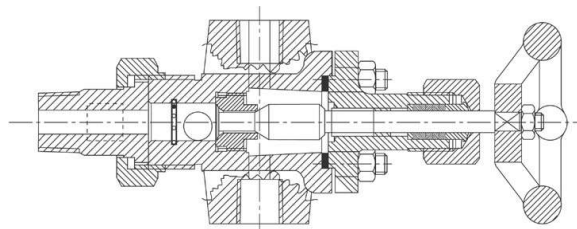
Pressure Rating per intermediate rating ANSI 1250



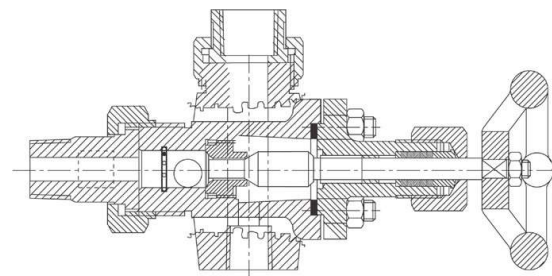
83 STRAIGHT PATTERN WITH FEMALE NPT GAUGE CONNECTION,
MALE VESSEL CONNECTION ON SOLID SHANK



84 STRAIGHT PATTERN WITH FEMALE NPT UNION GAUGE
CONNECTION, MALE VESSEL CONNECTION ON SOLID SHANK



86 OFFSET PATTERN WITH FEMALE NPT GAUGE CONNECTION,
MALE UNION VESSEL CONNECTION



87 OFFSET PATTERN WITH FEMALE NPT UNION GAUGE
CONNECTION, MALE UNION VESSEL CONNECTION

Plug Valves

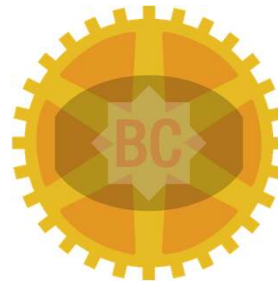


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Brdr Christensen is a privately owned PLC.

Founded in 1942 by Frede and Charles Christensen.

Now wholly owned subsidiary of Bliss Anand Group



1942 Briquetts production

1949 Moped production

1958 Production of Plug valves

1975 Tapered plug valves

1994 Twin plug valves

2004 Diverter valves

2008 Valves for cement

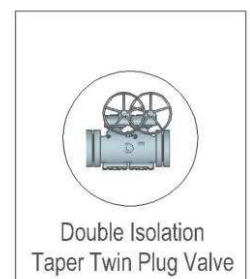
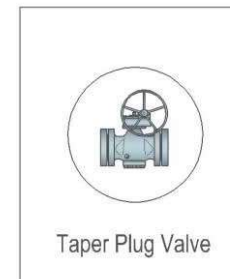
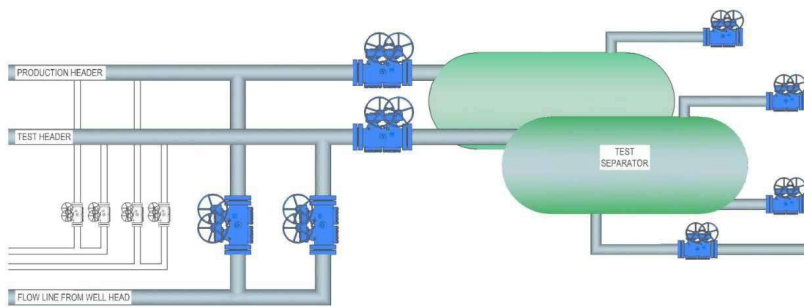
2009 Riser valves

Plug Valves



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Typical Installations Oil & Gas Production – Well Heads Manifold



Gas Transportation – Gas Compression Stations

Configuration Using Taper Plug Valves



Configuration Using Taper Twin Plug Valves



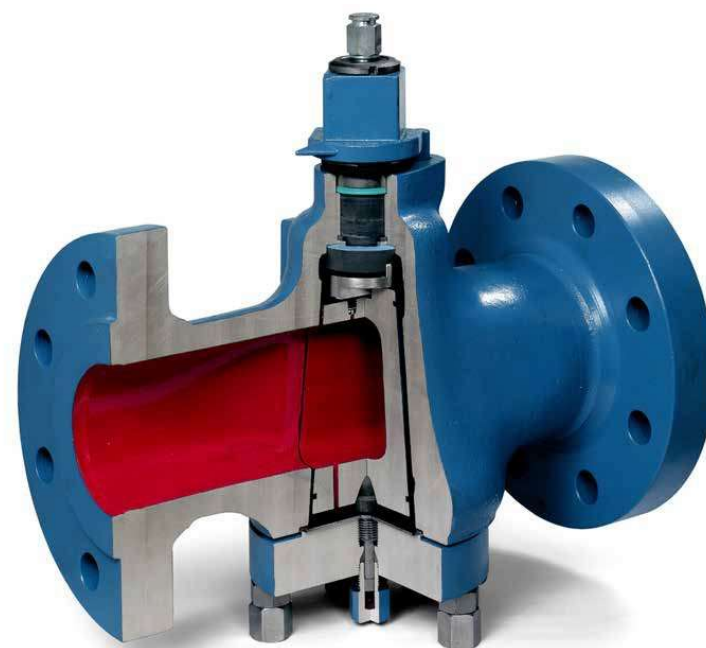
Plug Valves



BLISS
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Bro. Christensen Pressure Balanced Plug Valve Comparison Against
A Typical Metal Seated Ball Valve (Tirunio Mounted)

	PLUG VALVE	BALL VALVE
Seating area	Up to 30° on each side of the port	Seating area extends 3-5° on each side of port
Sealing	Metal to metal seating of plug to body to effect sealing	Small metal seat ring pushed up against Ball effects sealing
Sealant system	Fully contained sealant system used as a back up seat, this system is "contained" between the 30° seat of metal. This is a fully pressurized area of high pressure sealant	Sealant system is contained within the seat ring but the trapping is by way of only 1½-2½° of metal seats found in seat ring
Body cavities	Very few and small body cavities. Little chance of any sediment collection. Corrosion is less of a problem due to minimal line fluid collection points	Relatively large and numerous body cavities. These can fill with line sediments or precipitants
Exposure of seating area upon final closure or initial opening	Upon final closure or initial opening the entire seat cross section is not exposed to full line velocity across seats. This "shielding" of seat cross section minimizes possibility for damage at the most severe and critical seconds of any valves service life. It is at this time that line velocity is at it's maximum and erosion can damage valve seats	Upon cycling, at times, 100% of seat cross section is exposed to full line flow / velocity. Velocity at these moments is at the greatest and thus most erosive state. Also, this occurs at the same point on the seating area upon each and every cycle of valve



Plug Valves



BLISS
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Where Plug valves can be used ?

Oil & Gas Applications

- Manifolds – Flowlines and headers
- Emergency shutdown
- Separator drains
- Kicker valves to scraper traps
- Bypass valves to mainline ball valves –gas
- Water injection valves
- Gas injection valves
- WAG service
- Mud recovery systems / Slurry service
- Isolation valves to control valves
- Block valves on production pipes into the wells
- Riser valves with roundport – for pigging

Underground Gas Storage

- Isolation valves for Inlet Separator
- Isolation valves for Outlet Filter
- ESD valves
- Drain valves
- Bypass valves to mainline ball valves
- Isolation valves to control valves

Gas Pipelines

- Bypass Valves
- Blowdown Valves
- Kicker Valves
- Vents and Drains
- Distribution Valves

Refineries / Petrochem Plants

- Isolation Valves to Control Valves
- Loading Gantry Valves
- Hydrogen and other Gas Services
- Catalyst Handling Facilities
- Ethane, Methane, Ammonia Service
- Molten Sulphur
- Molten Wax, Asphalt, Bitumen etc.
- Hot oil systems



Thanks!

www.blissamericas.com