

Automated Flush Bottom Valves 1800SERIES



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SUDE[®]

Automated **Flush Bottom Valves**

Index

Introduction	01
Disc Type Flush Bottom Valve	
Characteristics	02
Standard Features	02
General Features & Advantages of Flush Bottom Valve	04
Specifications	05
Optional Configurations	05
Remotely Actuated Flush Valves	06
GA Drawings	07
Exploded View of Flush Bottom Valve.....	10

Sude offers a unique valve that is typically used for On-Off bottom drain Tank applications, where flushing or fluid transfer is necessary. The valve mounts flush to the tank with a plug extending into the tank and the seat rings flush with the inner Wall. The valve's compact, lightweight design is ideal for in-line maintenance under the Tank. It can be specified with either a 45° or 60° outlet angle. Other options include Bellows seal normalizing fins a special body without pockets, steam jacketing or a plug that retracts in to body

- Ordinary Diaphragm Valves when mounted in a vertical or angled position will have the content (Media or Fermentation) of the tank till the diaphragm. This creates a dead leg, a very serious issue in Bioprocess.
- But this valve can be used in the places where the sterility is not critical (Media Preparation Vessels Buffer formulation vessels) wherein the contents of the tank may either be sterilized in the next process or will be filtered using a 0.2 Micron Filter.
- Sometimes Steam is connected to this type of valves and sterilization is done before the harvest.

The above mentioned question and answers lead us to a new Kind of valve call Flush Bottom Valve

- The valve is normally welded to the bottom most portion of the bottom dish. The term Flush comes because the valve body is flush welded to the vessel dish.
- Though many types of Flush bottom valves are available, the diaphragm type is more commonly used.
- The valve is independently Steam sterilizable



Applications

- Industrial Vessels
- Pharmaceutical Fermentation Reactor
- Primary Food Processing
- Cosmetics Mixing Vessels
- Chemical feedstock Tank
- Biotech Reactors
- Petro-Chemical Processes
- Pressure Cooker on Food Processing

Features

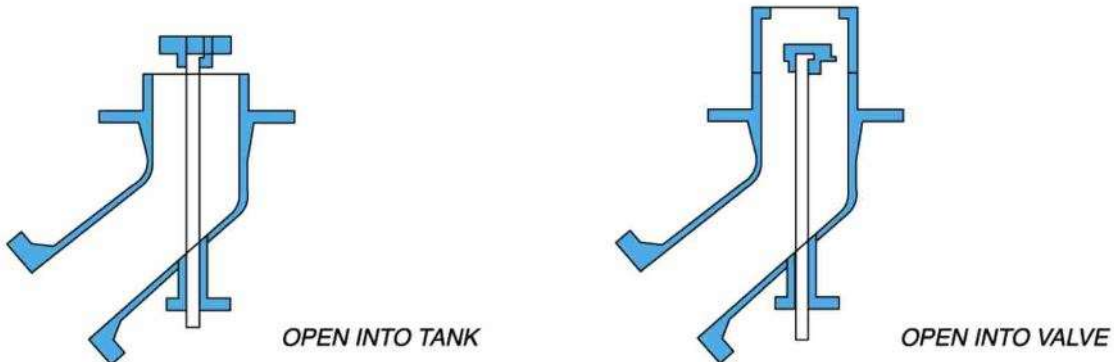
- Able to withstand high sterilization temperatures
- Full ports allow unobstructed product flow
- Positive shut off eliminates leakages In-Line adjustment to compensate for seat wear
- Easy assemble and dismantle

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Disc Type Flush Bottom Valve Characteristic

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2 Types of Disc type flush bottom valve Left Rising Disc Type Right Lowering Disc Type



Standard Features

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Flush fit mounting flanges to eliminated media trap areas

Mounting flanges are designed to be welded flush into the tank bottom. They are also designed to that the ball closes up into the tank.

Smooth tapered-bore mounting flanges eliminate media build-up:

Has eliminated raised edges that can allow media build-up from the valve entry port. This is accomplished by reducing the transition from the tank bottom to the valve entry port.

- Manual or automated operation
- A choice of Seat & Seal materials
- A variety of downstream pipe ends
- All stainless steel materials with 316L mounting flange
- Full porting offered
- Design and Performance Features
- High flow capacity
- Best Suited for drainage system
- Wide selection of actuators to meet most system requirement
- Flexible design capabilities allow fitting any vessel nozzle configuration
- Disc rising or lowering
- Fit exactly to the wall for Disc lowering type
- Crust breaking for Disc rising type
- Pneumatic cylinder / Diaphragm (Spring return or Double acting/with or without Hand wheel
- Electric Actuators
- Jacketed valve type (Full jacketed, Semi jacketed) Non jacketed (single) type

Flush Bottom Valves are designed to provide drainage, and dead space free shutoff is accomplished by placing the valves seat flush at the bottom of the vessel. This eliminates any buildup of product within the vessel nozzle itself. Advantage of Disc type is short stroke for open/close operation.

Flush Bottom Tank Valves are used in the Bottom of Reactor Vessels Autoclaves & other Process Vessels for handling abrasive Slurry, Viscous Material or Semi Solid Media. The valves seating are generally Teflon/Neoprene and optionally Viton depending on the process requirement

Flush Bottom Valves Opening Option: Inside Vessels or Inside Valve opening Available in the size from 15MM to 250MM with different material of construction like Cast Iron, Cast Steel, SS 304/316 or any special alloy to suit user requirements. Also available in Jacketed Design & Teflon lined Design.

General Features & Advantages of Flush Bottom Valve

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Standard Features

Advantages

Flush Pad Made from Solid Bar	: Machined from 316L stainless steel. Eliminates porosity and flaws commonly associated with cast materials. Increases resistance to corrosion.
Angle Engineered Design	: Allows ball to extend into tank resulting in reduced dead space where media may accumulate.
Variety of Port Configurations	: Valves and their corresponding pads are available in full and standard port pipe dimensions or full port tube dimensions, assuring proper sizing of piping system.
Fully Encapsulated	: Allows pad to be directly welded to tank without disassembly of valve.
Fully Encapsulated	: Ideal for actuation. Centering lip feature assures precise alignment of bracket stem and coupler
Integral Mounting pad	: Allows in-line maintenance of valve with out having to remove actuator.
Variety of End Combinations	: A wide choice of optional end connections are available, including but not limited to Tri Clamp**, Threaded, Socket weld, Butt Weld, Grooved, and 150# and 300# flanged
Choice of Seats & Seals	: A wide variety of seat and seal material are readily available for the most demanding applications, including Buna, Delran, EPDM, Viton, UHMWPE, Teflon etc.
Self Draining	: Special seats and balls can be supplied to allow the valve to completely drain in the open or closed position.
Purge Ports	: Valves can be supplied with purge connections for SIP (steam in place) or CIP (clean in place) applications.
Polishing	: Valves can be manually and/or electronically polished
Automation	: Valves can be supplied with either pneumatic or electric actuation.

The Flush Bottom Valves are provided with Heating/Cooling Jackets, extra long spindle and with automation. Arrangements can be made for valves opening and closing.

DESIGN	:	Inside Tank Open, Inside Valve Open Type.
TYPE	:	Rising/Non Rising Stem.
MOC	:	Cast Iron/Cast Steel/SS 304/316, 304 L, 316 L / PTFE, PP, HDPE Lined.
PRESSURE RATING	:	ASA 150#, 300#.
END CONNECTION	:	Flanged End, Flush Bottom.
OPERATION TYPE	:	Pneumatic / Electric Operated in on / off as well as Proportional mode.

Optional Configurations

Cavity-Filled Versions :

For applications involving viscous liquids, powders or monomers and chemicals that tend to polymerize, cavity-filled versions are available. The cavity-filled option is also offered as self-draining and steam purge able.

Multi-port ball, self-draining configurations:

For Pharmaceutical, biotech food processing, valves can be configured to be self-draining in both the open and closed position. Special seats and multi-ported balls allow the valve to completely drain to the downstream side. Steam or water purges can also be added to sterilize or flush media between batches.

Steam-in-Place Versions :

Tank bottom valves can also be equipped with single or multiple purge connections to allow purging between cycles or sterilization for aseptic processes.

High-Purity Versions:

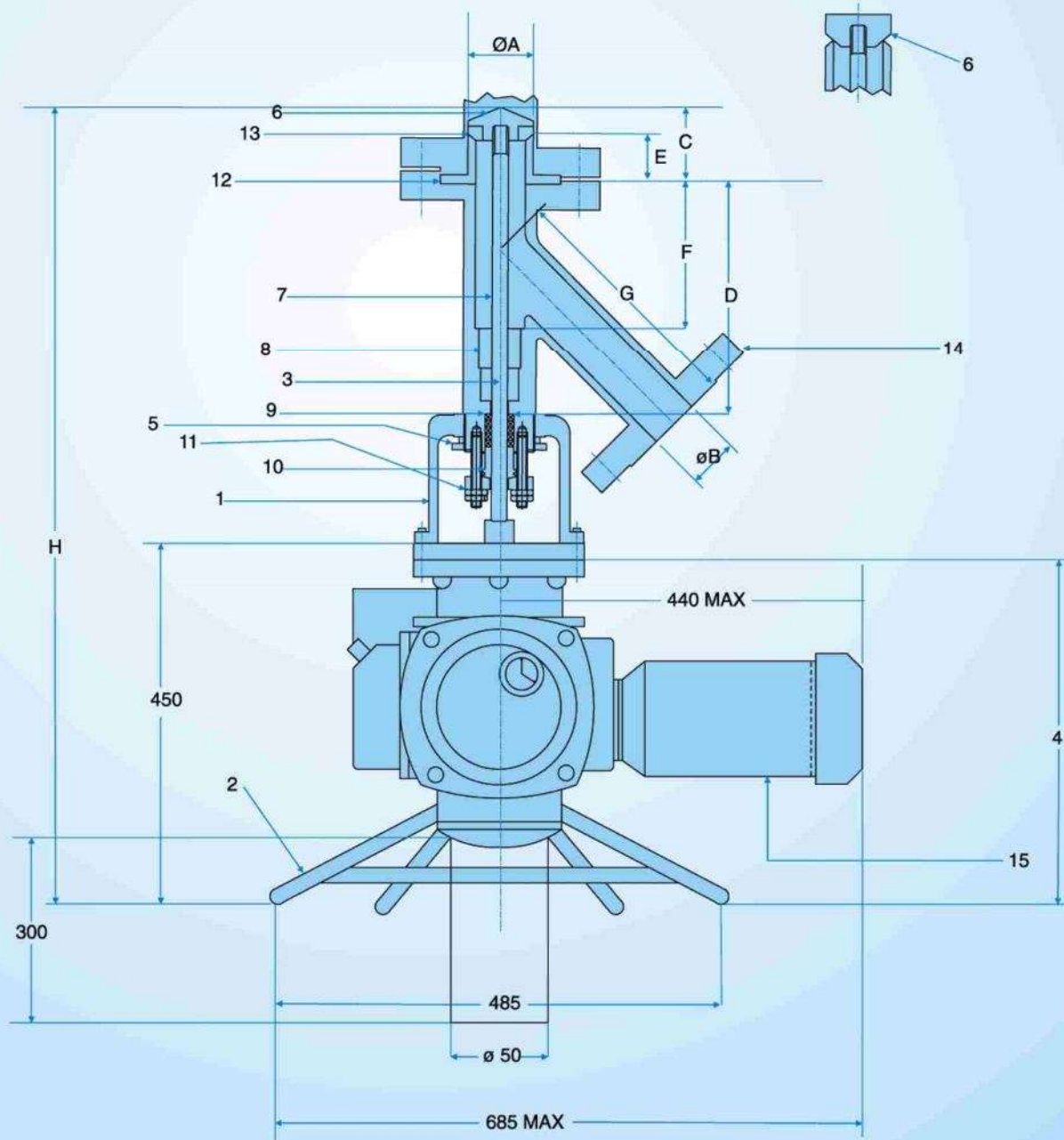
- Electro polished upon request
- Clean Room Assembled
- Cavity-fillers & Purge Ports (optional)
- Self-Draining Versions available
- Quick Disconnect End Connections

Remotely Actuated Flush Valves

The flush valve is located behind a wall and is pneumatically / electrically actuated by a push button flush bottom valves (referred to as Tank valve, Angle bottom valve, Bottom drain valve Flush mount valve etc.) are designed to provide drainage and dead space free shut off for any buildup of product within the vessel nozzle itself.

Trouble Shooting Chart

<i>Fault</i>	<i>Possible Cause</i>	<i>Remedy</i>
Stem motion impeded	<ol style="list-style-type: none"> 1 Packing excessively tightened 2 Operating temperature too high for selected 3 Supply pressure inadequate 4 Positioner defective 	<ol style="list-style-type: none"> 1 Tighten gland nut slight more then" finger- 2 Note operating data and contact dealer 3 Check system for leaks in the supply pressure or signal lines. Retighten the connection. If necessary replace leaky lines. 4 See operating instructions for positioner
Excessive leakage	<ol style="list-style-type: none"> 1 Worn or damaged seat ring/plug 2 Inadequate actuator thrust 3 Plug in correctly adjusted 4 Incorrect direction of flow 5 Hand wheel in correctly adjusted (acts like end stop) 	<ol style="list-style-type: none"> 1 Re-machine or replace seat ring/plug. 2 Check air feed. If air feed is ok, contact Sude. 3 Correctly adjust plug. 4 Check specification contact Sude. 5 Adjust hand wheel
Inadquate flow	<ol style="list-style-type: none"> 1 Plug in correctly adjusted (shortstroke) 2 Positioner defective 3 Operating requirements too high 	<ol style="list-style-type: none"> 1 Correctly adjust plug 2 See operating instructions for positioner 3 Check operating data contact Sude.
Plugsrams	<ol style="list-style-type: none"> 1 Plug adjustment in correct 2 Inadequate supply pressure 3 Trim too large for flow rate 	<ol style="list-style-type: none"> 1 Correctly adjust plug 2 Check supply pressure seal leakes remove blockage. 3 Replace trim.



S.No.	PART
1	SUPPORTING BRACKETS (MS OR STAINLESS STEEL)
2	HAND WHEEL
3	ACTUATOR STEM
4	ELECTRIC ACTUATOR STAY PUT TYPE SDTORK MAKE
5	LOCKING RING
6	PLUG METAL TO METAL ARRANGEMENT
7	PLUG STEM
8	GUIDE BUSH

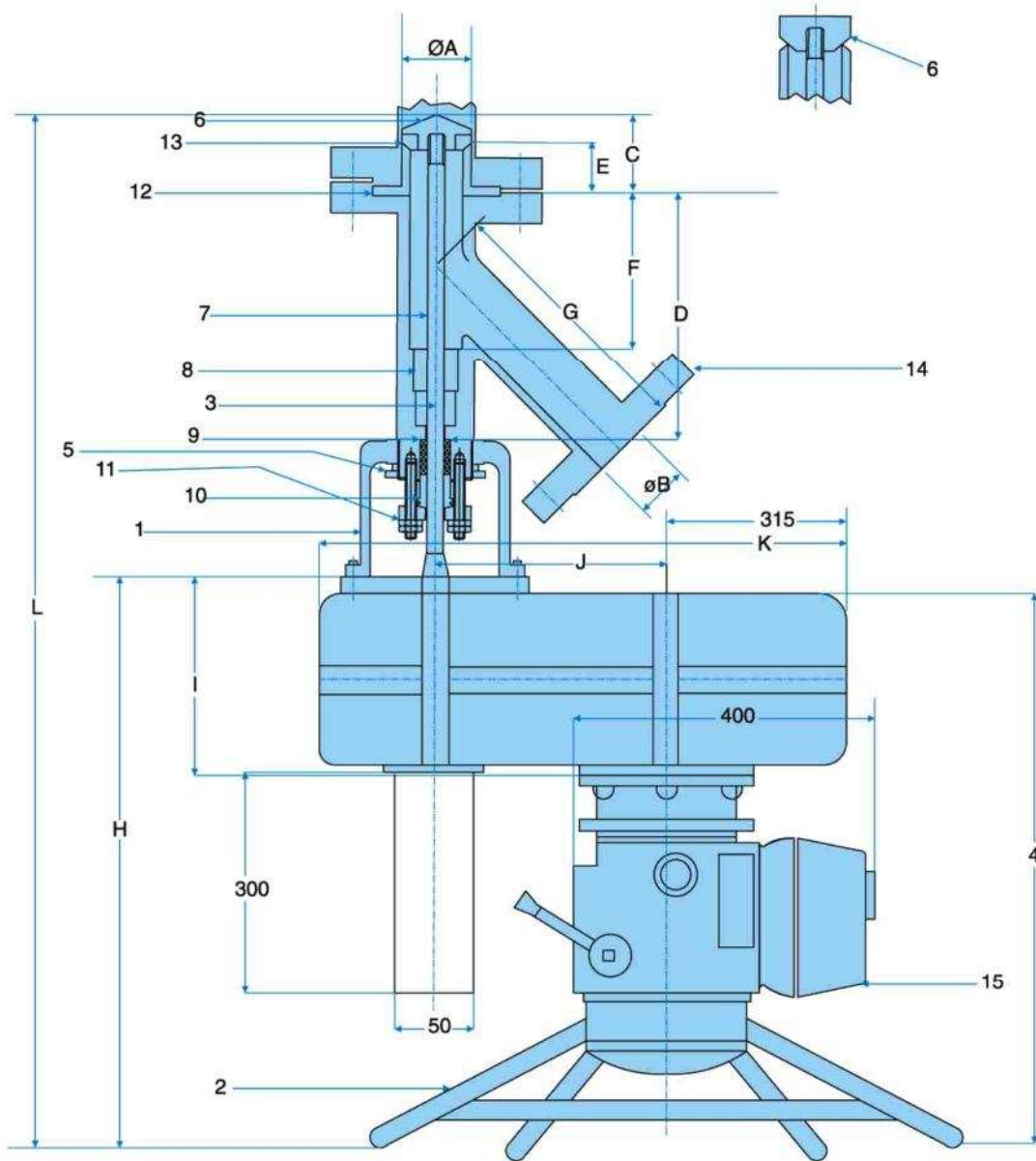
S.No.	PART
9	GLAND PACKING
10	GLAND
11	GLAND PUSHER
12	SEAT RING
13	FLUON FACE
14	FLUSH BOTTOM BODY
15	MOTOR (TEFC/TESC)

Important :

Design the installation of a valve on a tank so that the valve seat and the bottom of the Tank will be on the same level taking 'E' Dimensions into consideration.

Note : 1) Inlet Flanges is always one size larger than Outlet Flange.

VALVE SIZE	MODEL NUMBER	APPROX VALVE STROKE	DIMENSIONS (mm)								HAND WHEEL DIA	VALVE Cy US-GPM	WEIGHT OF THE ASSEMBLY
			A	B	C	D	E	F	G	H			
25/40	1858FBV/25/40/S4/S4/ON/OFF/SD-3000-20	14.7	38	25	65	145	40	35	160	735	50	16	80
40/50	1858FBV/40/50/S4/S4/ON/OFF/SD-3000-20	19	50	40	65	160	40	40	180	750	50	35	80
50/65	1858FBV/50/65/S4/S4/ON/OFF/SD-3000-20	19	65	50	70	182	40	52	200	777	50	60	100
65/80	1858FBV/65/80/S4/S4/ON/OFF/SD-3000-20	28	80	65	70	200	40	55	220	795	50	95	115
80/100	1858FBV/80/100/S4/S4/ON/OFF/SD-3000-20	28	100	80	72	220	40	65	260	817	50	130	150

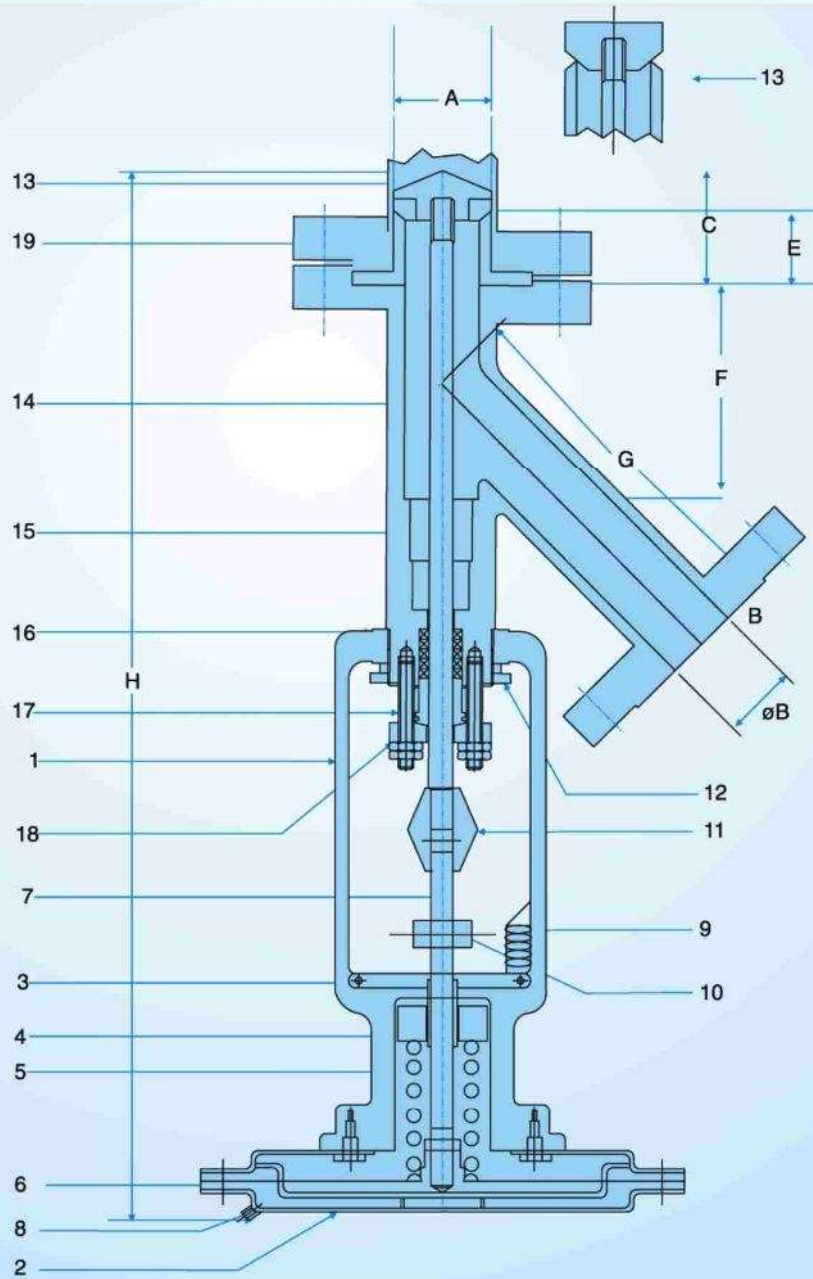


S.No.	PART	S.No.	PART
1	SUPPORTING BRACKETS (MS OR STAINLESS STEEL)	9	GLAND PACKING
2	HAND WHEEL	10	GLAND
3	ACTUATOR STEM	11	GLAND PUSHER
4	ELECTRIC ACTUATOR STAY PUT TYPE SDTORK MAKE	12	SEAT RING
5	LOCKING RING	13	FLUON FACE
6	PLUG METAL TO METAL ARRANGEMENT	14	FLUSH BOTTOM BODY
7	PLUG STEM	15	MOTOR (TEFC/TESC)
8	GUIDE BUSH		

Important :
Design the installation of a valve on a tank so that the valve seat and the bottom of the Tank will be on the same level taking 'E' Dimensions into consideration.

Note : 1) Inlet Flanges is always one size larger than Outlet Flange.

VALVE SIZE	MODEL NUMBER	APPROX VALVE STROKE	DIMENSIONS (mm)											VALVE Cv US-GPM	WEIGHT OF THE ASSEMBLY	
			A	B	C	D	E	F	G	H	I	J	K			L
100/125	1858FBV/100/125/S4/S4/ON/OFF/SD-3000-20-SG2.5	28	123	100	90	280	50	70	280	670	142	180	500	1115	240	250
125/150	1858FBV/125/150/S4/S4/ON/OFF/SD-3000-20-SG2.5	38	148	125	100	305	50	75	320	670	142	180	500	1115	350	260
150/200	1858FBV/150/200/S4/S4/ON/OFF/SD-3000-20-SG2.5	38	202	150	100	330	50	80	350	670	142	180	500	1115	490	280
200/250	1858FBV/200/250/S4/S4/ON/OFF/SD-3000-20-SG06	57	248	200	100	440	50	130	350	695	165	190	610	1310	780	365



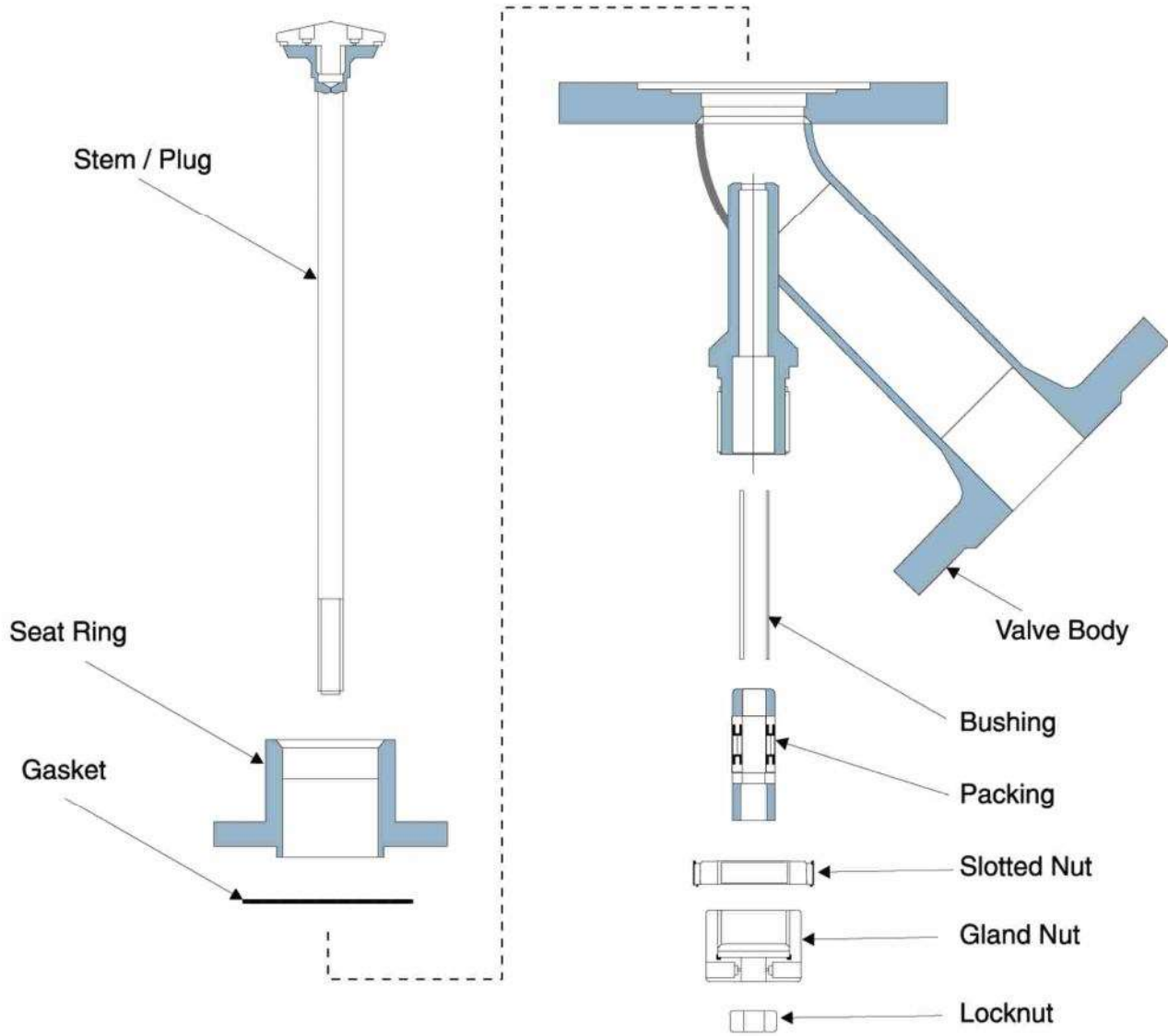
S.No.	PART	S.No.	PART
1	YOKE	11	COUPLING
2	DIA. CASING (TOP & BOTTOM)	12	LOCKING RING
3	SP. ADJUSTER	13	PLUG
4	SP. RETAINER	14	PLUG STEM
5	SPRING	15	GUIDE BUSH
6	AREA PLATE	16	GLAND PACKING
7	ACTUATOR STEM	17	GLAND
8	DIAPHRAGM	18	GLAND PASHER
9	TRAVEL PLATE	19	SEAT RING
10	TRAVEL INDICATOR	20	FLUON FACE

Important :

Design the installation of a valve on a tank so that the valve seat and the bottom of the Tank will be on the same level taking 'E' Dimensions into consideration.

Note : 1) Inlet Flanges is always one size larger than Outlet Flange.

VALVE SIZE	MODEL NUMBER	APPROX VALVE STROKE	A	B	C	D	E	F	G	H	ALVE Cv US-GPM	ACT TYPE POO	SHUT - OFF PRESSURE RATING FOR AIR PRESSURE TO DIAPHRAGM		
													1.4 kg/cm ²	2 kg/cm ²	2.5 kg/cm ²
25/40	1868FBV/25/40/S4//S4ON/OFF	14.7	38	25	65	145	40	35	160	615	16	30/55	8/30	20/70	30/100
40/50	1868FBV/40/50/S4//S4ON/OFF	19	50	40	65	160	40	40	180	710	35	55/95	12/20	30/50	42/70
50/65	1868FBV/50/65/S4//S4ON/OFF	19	65	50	70	182	40	52	200	738	60	55/95	7/12	18/30	24/40
65/80	1868FBV/65/80/S4//S4ON/OFF	28	80	65	70	200	40	55	220	860	95	95/140	7/11	18/27	27/40
80/100	1868FBV/80/100/S4//S4ON/OFF	28	100	80	72	220	40	65	260	872	130	95/140	5/7	12/18	18/27
100/125	1868FBV/100/125/S4//S4ON/OFF	28	123	100	90	260	50	70	280	950	240	95/140	3/4.5	8/11.5	12/17
125/150	1868FBV/125/150/S4//S4ON/OFF	38	148	125	100	305	50	75	320	1090	350	140/250	3/5	8/13	12/20
150/200	1868FBV/150/200/S4//S4ON/OFF	38	202	150	100	330	50	80	350	1120	490	140/250	2/3.5	5/9	7.5/13.5
200/250	1868FBV/200/250/S4//S4ON/OFF	57	248	200	100	440	50	130	350	1555	780	250	2/4	5/10	7.5/15





OUR OTHER PRODUCTS



- Solenoid Valves.
- Pneumatically Operated Control Valves.
- Motorised Valves.
- Pneumatic & Electric Operated Ball / Butterfly Valves.
- Pneumatic & Motorised Dampers.
- Pneumatic & Motorised VIV Dampers.
- Motorised Rising & Non-rising Sluice valve.
- Heavy duty – Single phase & Three phase actuators for operating Gates & Chutes.
- Pneumatic & Motorised pinch valve.
- Pneumatic & Motorised Flush Bottom valve.
- Entire range of Electrical Actuator.
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Head Office, Bangalore

NOTE : TECHNICAL SPECIFICATIONS, DETAILS & DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE. DIMENSIONS IN THE TABLE ARE APPROXIMATE SUBJECT TO FINAL CONFIRMATION BY SUDE.



SUDE ENGINEERING CORPORATION

Registered Office / Works :

Shop No. 1106, 10th Main Road, R.P.C. Layout,
Near R.P.C. Layout Bus Stop, Hampinagar,
Bangalore 560 104. (Old Pin 560040) Karnataka, India

Tel. : +91 80 2330 2145 / 2314 1104 / 2340 2297

Fax : +91 80 2330 5729

Call : +91 80 45040810

Pune Office / Works :

Gat No. 94/2, Plot No.1, Alandi Markal Road,
Village - Dhanore, Tal - Khed, Pune 412105.
Maharashtra, India

Tel. : +91 9763719689, 9763719690

Call : +91 9763719689, 9763719690

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