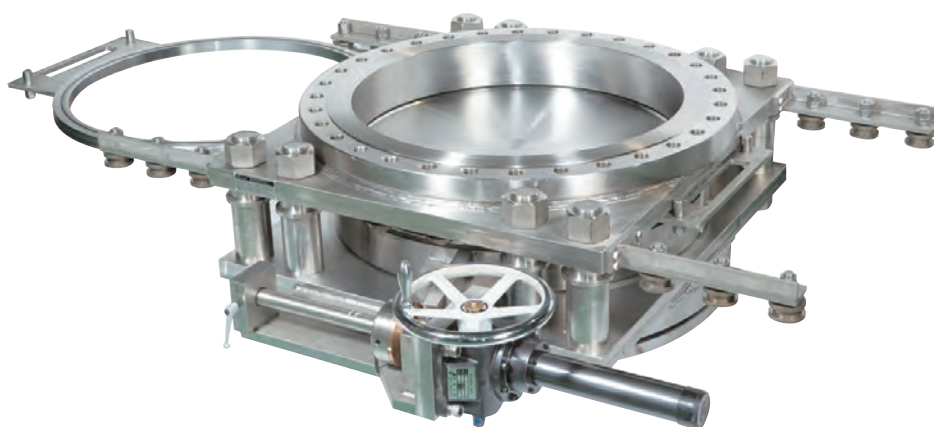




Line Blind **Sammi**



# World Wide Customer

## ■ Europe

- NESTLE
- LAFARGE ZEMENT KARSDORFER GMBH
- REFINERY BP
- THYSSENKRUPP STEEL EUROPE AG
- BASF
- LINDE ENGINEERING
- EAU ET FEU
- ARCELOR MITTAL
- S.F.D.M
- VOST ALPINE
- PETROCHEM
- STATEOIL PERTOLEUM
- SARLIN FURNACES AB
- NESTE FINLAND
- OIL TANKING MALTA
- BLUEWATER ENERGY ENGINEERING
- AVICO B.V
- SINGLE BUOY MOORINGS INC(FPSO)
- EXXON MOBILE
- HAMWORTHY CONBUSTION
- TATA STEEL
- VALERO PEMBROKE REFINERY
- BBS INDUSTRIAL
- COMBRIAN FISHER

## ■ Asia / Persian Gulf

- FORMOSA PETROCHEMICAL CORPORATION
- CHUNG HUNG STEEL CO
- BASF ELECTRONIC MATERIALS TAIWAN LIMITED
- CHINESE PETROLEUM CORPORATION
- CHANG CHUN PETROCHEMICAL
- FORMOSA PLASTICS
- BLUESCOPE STEEL
- ROHM AND HAAS INDIA(DOW INDIA)
- FINOLEX
- HORIZON SINGAPORE TERMINAL
- GLAXO WELLCOME MFG
- NESTE OIL
- ERIKS
- AUDEX PTE LTD
- BLUESCOPE STEEL
- PETRONAS
- TECHNIP

## ■ Korea

- SK CORP
- YNCC
- SAMSUNG SEMI CONDUCTOR
- HANHWA PETRO
- KUMHO P&B
- LG CHEMICAL
- GS CALTEX
- DAELIM PETRO
- HONAM PETRO
- DONGYANG CHEMICAL
- GS CONSTRUCTION
- SAMSUNG TOTAL
- SK CHEMICAL
- ISOO CHEMICAL
- SAMNAM PETRO
- LG DOW POLYCARBONATE
- DAELIM INDUSTRIAL
- SAMSUNG ENGINEERING
- S-OIL
- AKYOENG PAINTING
- SK ENERGY
- SANGSUNG HEAVY INDUSTRY
- SAMSUNG EVERLAND
- STX SHIPBUILDING
- KOLONG CHEMICAL
- TOYO ENGINEERING
- AKYEONG PETROCHEMICAL
- POSCO

## ■ Middle East

- ENOC
- BOROUGE
- VOPAK HORIZON FUJAIRAH LIMITED
- FUJAIRAH REFINERY COMPANY LIMITED

## ■ Africa

- SEREPT
- TEKFEN

## ■ Australia

- V&I AUSTRALIA
- QUEENSLAND NIKEL
- QUEENSLAND
- ALUMINA
- ORICA
- AUSTRALIA BLS
- INDEPENDENT CEMENT
- BLUESCOPE STEEL
- ERRARING POWER STATION
- MINARA RESOURCES
- SANTOS

A large, light gray world map composed of a grid of small dots, serving as a background for the text.

■ **USA/Canada**

- CHEVRON BORGER
- EXXON MOBILE
- JINFEX
- ARKEMA
- CHEVRON ETHYLENE
- SHELL
- LUBRIZOL
- GE POWER SYSTEMS
- RMC&ASSOCIATES
- CHEVRON PHILLIPS CHEMICAL
- DOW
- CHEVRON MISSISSIPI
- NAUGHTON POWER PLANT
- MONSANTO LOUISIANA
- KAO SPECIALTIES AMERICA
- RHODIA
- HONSBY-SEATHERFORD
- EXXON HOUSTON
- CARPENTER CHEMICAL
- ROCHE CAROLINA INC
- PUMA ENGERGY GUATEMALA
- DUPONT VIRGINIA
- DUPONT BAYPORT
- PROCESS STEAM AND SPECIALTIES
- SINGLE BUOY MOORINGS INC(FPSO)
- BP TEXAS
- FORMOSA PLASTIC

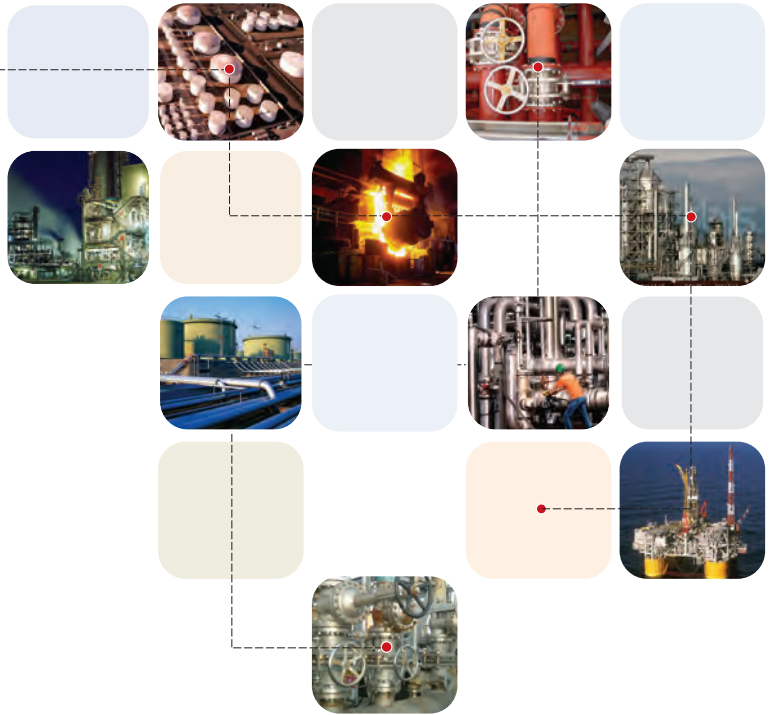
■ **South America**

- PETROBRAS
- OCCIDEDNTAL DE COLOMBIA LLC
- PEMEX

# About Sammi Machinery

## ■ Company Profile..

- April, 1993 Established
- Sep. 2000 Quality Certification from KOREA Gas Safety Authority
- Oct. 2002 Licensed new product of the Line Blind Valve
- Nov. 2002 Licensed Utility Model of the Line Blind Valve
- Aug. 2003 CE-PED approved from Bureau Veritas
- Mar. 2005 Certificated "Venture Company" from KOREA government
- May. 2007 ISO 9001 Approved
- Aug. 2009 Fire Safety Test approved
- Sep. 2009 CRN(Canada Registration Number) approved
- Feb. 2010 API Spec. Q1 Certificate, ISO / TS 29001 approved



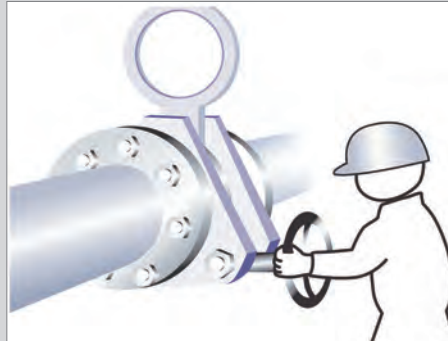
*Sammi Machinery Co., Ltd. a Line Blind Valve fabricator and machine shop, is a wholly owned subsidiary of line blocking technology and products.*



# What is Line Blind Valve?



[Typical Process]



[Sammi Line Blind]

Line blinding has been used to pipe lines in various industries wherever either positive shut-off is most concerned or full flow should be achieved without pressure drop.

The usual practice for line blinding by using typical materials such as spectacle blinds, spool piece, blind flange valves etc. with gasket inserted between flanges has however been labour intensive & time consuming and thus resulted in making expenses factors which include the time required for the blinding / debinding process, loss of product caused by long blinding time and also the operators of the production line have been unavoidably exposed to the potential hazard of explosion fire and inhalation.

The Sammi Line Blind Valves incorporating a touch and simple design have been developed to provide absolute shut-off, long service life and trouble-free service with minimum maintenance.

The unique and simple opening-closing mechanism of Sammi line blind valves allow one person to blank or blind heavy pipe work with ease, rapidity and safety without any tools or hoisting apparatus etc.

## • Application industries •



• Petrochemical plant •



• Oil refinery plant •



• Flooding Production Storage and Offloading •



• Iron & Steel mill •



• Oil & Gas terminal •



• Thermal & Nuclear power plant •



• Offshore Facility •



• Cement & Pulp industries •

## Product Line

### Sliding Type

A heavy pipe line can be blinded by operating the hand wheel with safety and ease. It takes 20 Second ~ 5 minutes by one untrained person without line spreading.

One turns the hand wheel and then sliding the blind plate to secure the blind by hand wheel.



### Swing Type

A pipe line is blinded by a spectacle plate by swing the open / close position.

It allows one person to blind / deblind a heavy pipe line within 5 minutes by operating a hand wheel.



### Compact Type

This type is proper to a large size of pipe line. It has compact structure and very short face to face dimension. It allows one person to blind a heavy pipe line within 5 minutes by operating the hand wheel without line spreading.

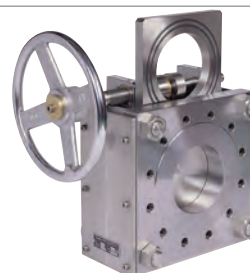
One turns the hand wheel and then slide the blind plate to secure the blind by hand wheel.



### Non-Spill Type

The body of a line blind is covered to prevent hazard or pollution during open/ close procedure. It has very short face to face dimension and compact design.

One turns the hand wheel and then lift up & turn around the blind plate to set in position, and then secure the blind plate by hand wheel.



### Jack Bolt Type

After a couple of turning of the 3~7 jack bolt around the body to move back a pipe line by use of round bar and then change the blind plate position.

It has basical structure for line blinding and lower cost than hand wheel operating types.

Widely applicable to extreme pressure / temperature service.

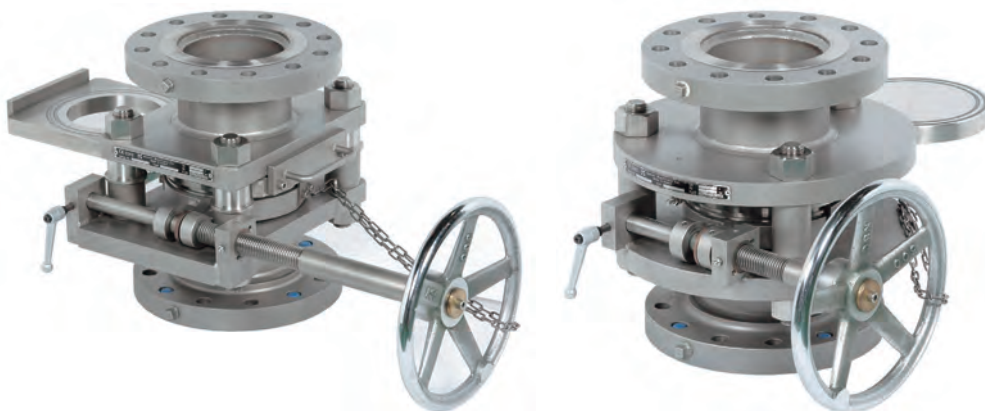


# Why choose Sammi Line Blind

*Sammi quick blind valves have the successful combination of two essential criteria – zero leakage to the downstream and safe & easy blinding with untrained one person and our products are manufactured under the strict quality control system*

- Absolute shutoff**  
In the closed status, any liquid or gas can not leak to the downstream.
- Quick change**  
Heavy pipe line can be blinded safely within 30 sec. ~ 5 min.
- Only one operator**  
Untrained one person can operate with ease and safety up to 24" pipe line.
- Non line spread**  
Sammi' s unique gear -set system which performs the blinding operation without spreading the process pipe.

- Cost saving**  
Not only saving man-hours, but increasing the production time.
- No tools**  
Turns hand wheel, then swing or sliding the blind plate without tools and cranes.
- Safety working**  
Line blinding with Sammi is not labor intensive and no more jeopardizes safety with few people around the pipework.
- Simple structure**  
Simple and solid structure need minimum maintenance only for sealing gasket replacement.



# Sliding type

*line blinds, line blind valves*



- No line spread**  
Unique & powerful mechanism make a gap to turn the spectacle plate without spreading the line.
- Auto positioning of blind plate**  
The blind plate shall be set at its position without fail by end stop plate.
- Hand wheel torque indicator**  
Prevent incorrect operation such as turning the hand wheel tighten or loosen.
- Double safety locking**  
Locking devices are double installed to avoid operator's carelessness and one of them can be locked with a key.
- Self stick free mechanism**  
Unique gear set mechanism shall free the blind plate from sticking problem.
- Gasket protection cover**  
The exterior of blind plate is protected from injured with a protection cover.
- Double Sealing (optional)**  
Depend on media and operating conditions, seal ring can be placed in double for safety.
- Open /close position sensor(optional)**  
Blind plate position indicating sensor can be installed.

## ■ Operating sequence (Sliding type)

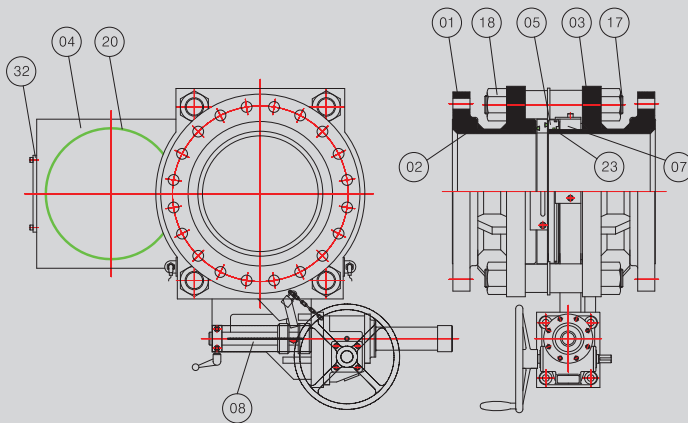


1. Unlock the key and clamp lever
2. Turn the hand wheel counter clockwise, it makes gap to slide the blind plate without line spreading
3. Slide the blind plate to change open / close position
4. Turn the hand wheel clockwise to secure the blind plate
5. Lock the clamp lever and key

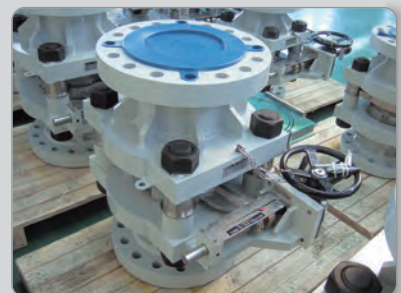




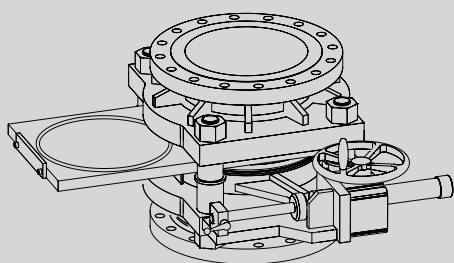
# Part description



No.	PART NAME	STANDARD MATERIAL	OPTIONAL MATERIAL
01	FLANGE	CARBON STEEL STAINLESS STEEL	Super Stainless Cr-Mo Alloy Steel Hastelloy Steel & etc.
02	PIPE	CARBON STEEL STAINLESS STEEL	Super Stainless Cr-Mo Alloy Steel Hastelloy Steel & etc.
03	STREAM PLATE	CARBON STEEL STAINLESS STEEL	Super Stainless Cr-Mo Alloy Steel Hastelloy Steel & etc.
04	BLIND PLATE	CARBON STEEL STAINLESS STEEL	Super Stainless Cr-Mo Alloy Steel Hastelloy Steel & etc.
05	SEAT	CARBON STEEL STAINLESS STEEL	Super Stainless Cr-Mo Alloy Steel Hastelloy Steel & etc.
07	GEAR SET	STAINLESS STEEL	STAINLESS STEEL
08	SCREW SHAFT	STAINLESS STEEL	STAINLESS STEEL
17	STUD BOLT	SA193-B7, SA193-B8	SA193-B7, SA193-B8
18	HEX NUT	SA194-2H, SA194-Gr.8	SA193-B7, SA193-B8
20	O-RING	SELECTION	SELECTION
23	WIPER RING	PTFE/GRAPHITE	PTFE/GRAPHITE
32	END PLATE	STAINLESS STEEL	STAINLESS STEEL



## Standard product range



### AVAILABLE SIZES AND STANDARD

- Standard size range is from 1/2" to 60"
- Standards; ASME 150 to 1500 lbs,
- Other pressure classes up to ASME 2500 # available upon request

### STANDARD MATERIALS

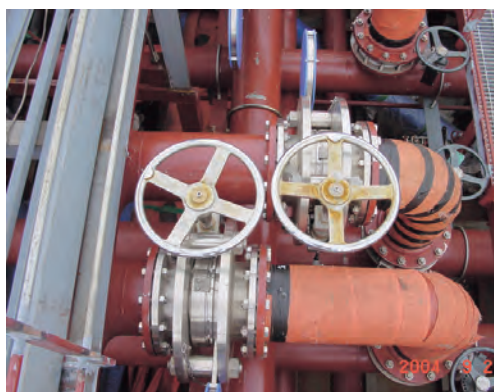
- Carbon steel Body with Stainless steel for wetted parts
- All stainless steel construction
- Special materials available upon request

### STANDARD SEALING

- Elastomer O-rings. ( FKM, EPDM, Aflas, FVMQ, FFKM, etc )
- Encapsulated O-rings ( FEP+Viton, PFA+Viton, PFA+Silicone )
- Spiral Wound or Graphite seal rings for high and low temperature applications
- Special seal ring material available upon request

# Swing type

*line blinds, line blind valves*



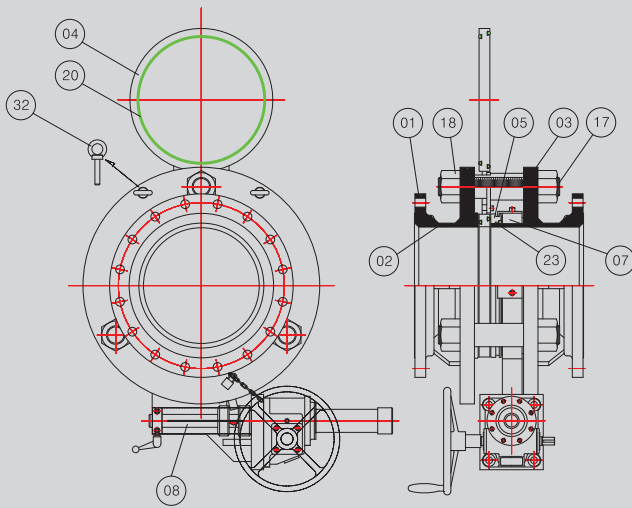
- No line spread
- Auto positioning of spectacle plate
- Hand wheel torque indicator
- Double safety locking
- Self stick free mechanism
- Gasket protection cover
- Double Sealing (optional)
- Open /close position sensor(optional)

## ■ Operating sequence (Swing type)

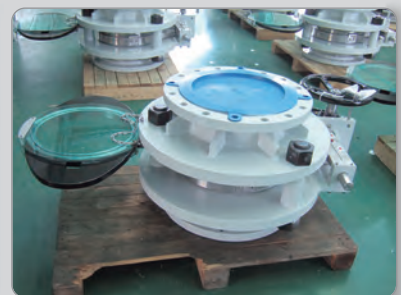
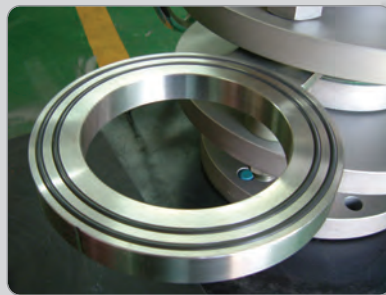
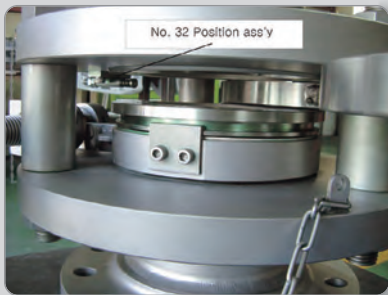


1. Unlock the key and clamp lever
2. Turn the hand wheel counter clockwise, it makes gap to turn the spectacle plate with out line spreading
3. Turn the sptacle plate to change open / colse position
4. Turn the hand wheel clockwise to secure the blind plate
5. Lock the clamp lever and key

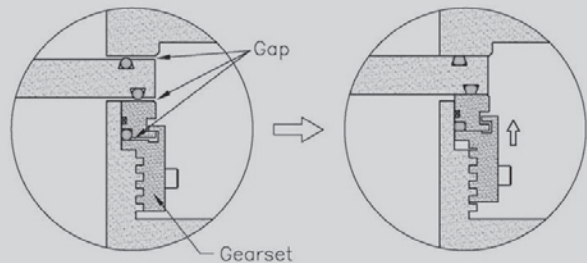
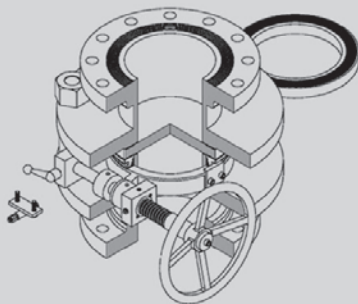
# Part description



No.	PART NAME	STANDARD MATERIAL	OPTIONAL MATERIAL
01	FLANGE	CARBON STEEL STAINLESS STEEL	Super Stainless Cr-Mo Alloy Steel Hastelloy Steel & etc
02	PIPE	CARBON STEEL STAINLESS STEEL	Super Stainless Cr-Mo Alloy Steel Hastelloy Steel & etc
03	STREAM PLATE	CARBON STEEL STAINLESS STEEL	Super Stainless Cr-Mo Alloy Steel Hastelloy Steel & etc
04	BLIND PLATE	CARBON STEEL STAINLESS STEEL	Super Stainless Cr-Mo Alloy Steel Hastelloy Steel & etc
05	SEAT	CARBON STEEL STAINLESS STEEL	Super Stainless Cr-Mo Alloy Steel Hastelloy Steel & etc
07	GEAR SET	STAINLESS STEEL	STAINLESS STEEL
08	SCREW SHAFT	STAINLESS STEEL	STAINLESS STEEL
17	STUD BOLT	SA193-B7, SA193-B8	SA193-B7, SA193-B8
18	HEX NUT	SA194-2H, SA194-Gr.8	SA193-B7, SA193-B8
20	O-RING	SELECTION	SELECTION
23	WIPER RING	PTFE/GRAPHITE	PTFE/GRAPHITE
32	POSITIONER	STAINLESS STEEL	STAINLESS STEEL



## ■ Non-spreading design



The SAMMI line blinds offer a unique non-spreading design which performs the blinding operation without spreading the process pipe.

Therefore no stress is put to the process pipe while changing the spectacle plate and non-sticking of gasket plates for an easy and fast operation.

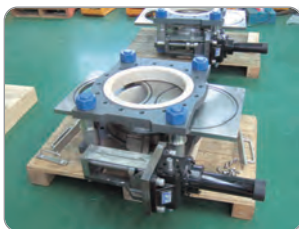
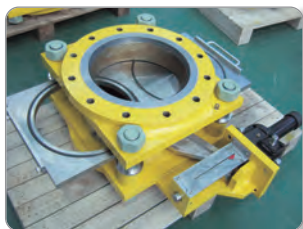
No tools are required to perform this operation!

# Compact type

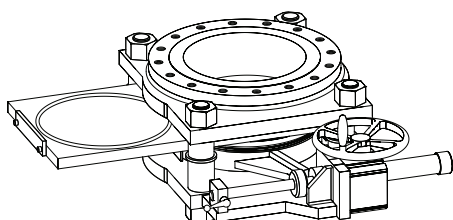
*line blinds, line blind valves*



- Compact & solid structure**  
This type is proper to a large size of pipe line. It has solid structure and very short face to face dimension and can be connected with counter flanges to its body directly.
- No line spread**
- Auto positioning of blind plate**
- Hand wheel torque indicator**
- Double safety locking**
- Self stick free mechanism**
- Gasket protection cover**
- Double Sealing (optional)**
- Open / Close position sensor (optional)**



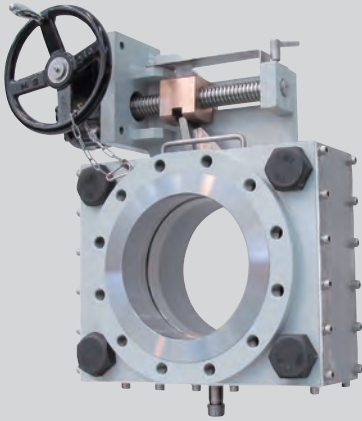
## ■ Sample applications



- |                          |                            |                      |
|--------------------------|----------------------------|----------------------|
| ■ Tankfarms              | ■ Shipboard lines          | ■ Pump isolation     |
| ■ Vessel inlets          | ■ Loading stations         | ■ Filtration systems |
| ■ Mixing lines           | ■ Clean out ports          | ■ Steam lines        |
| ■ Pig launching stations | ■ Tank vents               | ■ Flares             |
| ■ Fuel lines             | ■ Man ways                 | ■ LNG ships          |
| ■ Ethylene furnaces      | ■ Lock out tag out systems |                      |

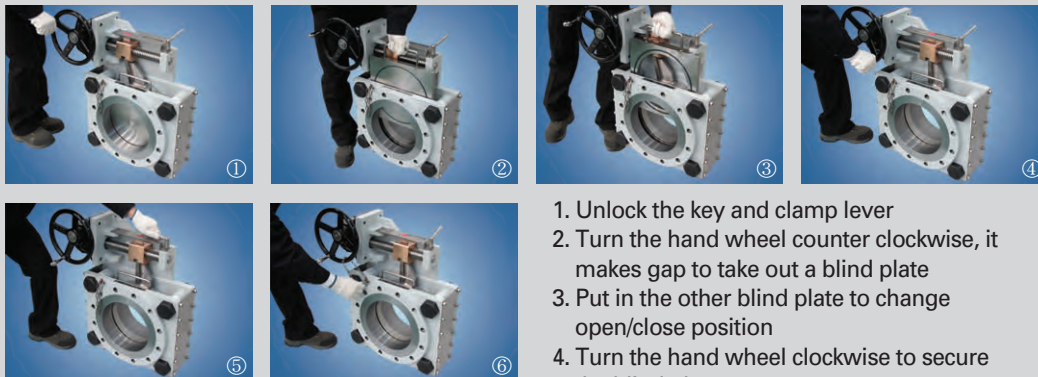
# Non-spill type

*line blinds, line blind valves*



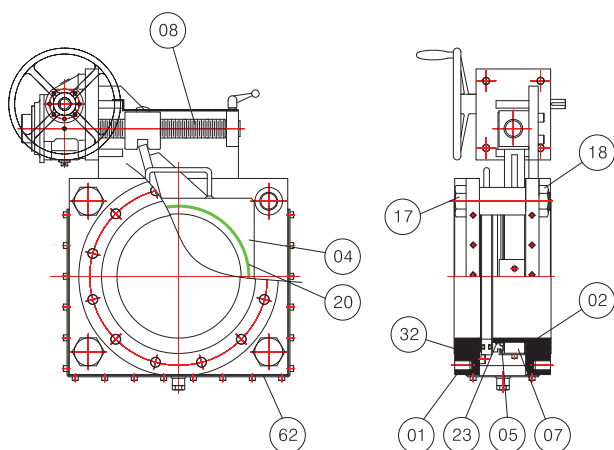
- Pollution prevention**  
Pollution is prevented from flow down of residues in pipe line during blinding/ deblinding procedure.  
Application is proper to onboard vessels or shore & offshore pipe line.
- No line spread**
- Auto positioning of blind plate**
- Hand wheel torque indicator**
- Double safety locking**
- Self stick free mechanism**
- Double Sealing (optional)**

## ■ Operating sequence (Non-spill type)

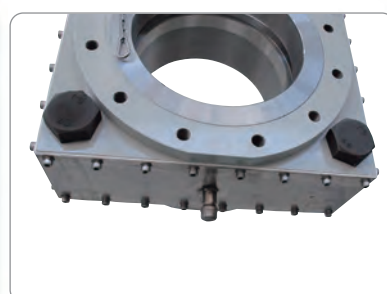


1. Unlock the key and clamp lever
2. Turn the hand wheel counter clockwise, it makes gap to take out a blind plate
3. Put in the other blind plate to change open/close position
4. Turn the hand wheel clockwise to secure the blind plate
5. Lock the clamp lever and key

## Part description



No.	PART NAME	STANDARD MATERIAL	OPTIONAL MATERIAL
01	BODY	CARBON STEEL STAINLESS STEEL	Super Stainless Cr-Mo Alloy Steel Hastelloy Steel & etc
02	PIPE	CARBON STEEL STAINLESS STEEL	Super Stainless Cr-Mo Alloy Steel Hastelloy Steel & etc
04	BLIND PLATE	CARBON STEEL STAINLESS STEEL	Super Stainless Cr-Mo Alloy Steel Hastelloy Steel & etc
05	SEAT	CARBON STEEL STAINLESS STEEL	Super Stainless Cr-Mo Alloy Steel Hastelloy Steel & etc
07	GEAR SET	STAINLESS STEEL	STAINLESS STEEL
08	SCREW SHAFT	STAINLESS STEEL	STAINLESS STEEL
17	STUD BOLT	SA193-B7, SA193-B8	SA193-B7, SA193-B8
18	HEX NUT	SA194-2H, SA194-Gr.8	SA193-B7, SA193-B8
20	O-RING	SELECTION	SELECTION
23	WIPER RING	PTFE/GRAPHITE	PTFE/GRAPHITE
32	POSITIONER	STAINLESS STEEL	STAINLESS STEEL
62	NON-SPILL COVER	STAINLESS STEEL	STAINLESS STEEL



### ■ Critical factors in safety

**(1) Working conditions based on specification of line blind :**

Working conditions like pressure, temperature and matters to be attended are specified in manual which makes sure to be used fittingly and inappropriateness to be corrected immediately.

**(2) The right sealing material (gasket) selection :**

Sealing material, specifications and part number are specified in manual which make it easy to secure spares.

**(3) Gasket replacement :**

Blind plate can be visually checked to decide replacement O-ring in seat be replaced at site.

Replacement interval can be different based on gasket kinds and working conditions it's specified in manual after checking the above.

**(4) Double locking device :**

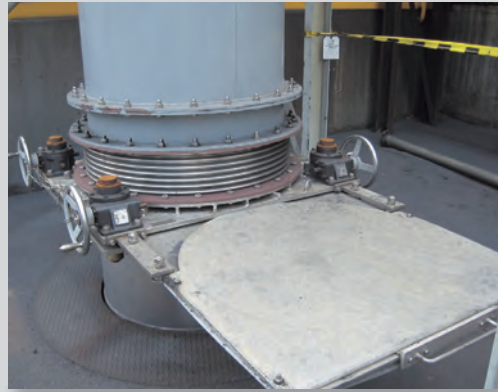
Locking device is double-installed to avoid operator's carelessness and mis-functions and one of them has a key.

**(5) Protection from misalignment of spectacle plate :**

Spectacle plate is designed to be settled in the right position.

## Jack bolt type

*line blinds, line blind valves*



- **Simple & solid structure**

This basic model of line blind valve can reduce the binding / deblinding time drastically comparing with typical way. No need to take out flange bolts but to unscrew the 3~5 jack bolts for 2 or 3 turns to swing(sliding) the blind plate.

- **Wide range of application**

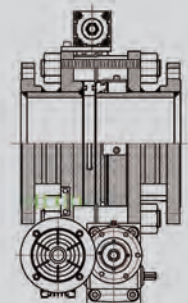
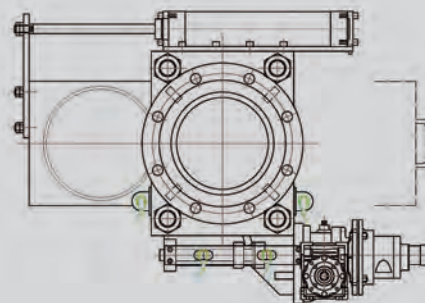
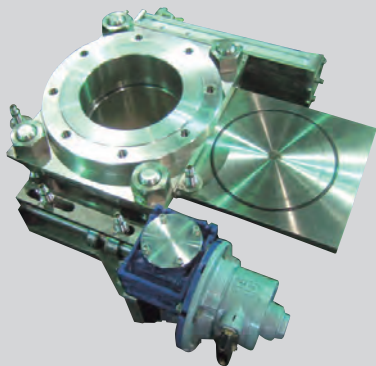
Simple structure can help its applications to the extreme high pressure & temperature service pipe line with wide range of media.

- **Operation**

After unscrew the 3~5 jack bolts for 2 or 3 turns around its body to move back their piping by use of round bar and swing (sliding) the blind plate in position. Then secure the body with blind plate by retightening the jack bolts.

## Automation

*line blinds, line blind valves*

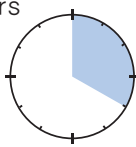
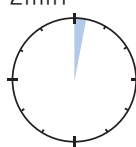
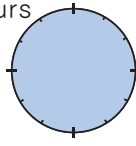
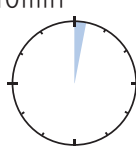


There is a strong point that it is possible automated operation like conventional control valves.

An Air Operated Valve is a type of power operated valve that uses air pressure against a actuator to produce linear movement to operate a valve.

## Cost effectiveness

### ■ Necessary time for blinding or debinding

Size Ranged	Blinding Technique		Saving Effect
	Solid Plate between flanges (typical)	Sammi line Blind	
1/2" ~ 14" (DN15 ~ DN350)	1~4 hours  by 2~4 men Tool, gaskets, wedges	20sec to 2min  by 1 man	<ul style="list-style-type: none"> <li>■ 2~16 man-hours</li> <li>■ Gasket, bolts &amp; nuts, tools</li> <li>■ Time for draining and line cooling</li> </ul>
16" ~ 48" (DN400 ~ DN1200)	1~12 hours  by 4~10 men Tool, gaskets, hoisting apparatus	2min to 10min  by 1 man	<ul style="list-style-type: none"> <li>■ 16~120 man-hours</li> <li>■ Gasket, bolts &amp; nuts, tools</li> <li>■ Time for draining and line cooling</li> </ul>

### ■ Increase productivity

Size	Blinding (typical)	Deblinding (typical)	More production
1/2" ~ 14"	1 to 4 hours	1 to 4 hours	2 to 8 hours
16" ~ 48"	4 to 12 hours	4 to 12 hours	8 to 24 hours

- Time saving for and draining and line cooling are not included
- Less pre-purge time
- Immediate work after stopping line

### ■ Saving cost for maintenance

- Long life and simple design criteria
- No consumable parts except gaskets
- It may be replaced in case of broken after visual checking
- No tools, wedges, crane, bolts are necessary

### ■ Positive shutoff

- Quick and positive response in emergency
- Prevent vacuum losing
- Prevent contamination by mixing
- Prevent leaking accident in service
- Prevent environmental pollution



# Engineering

*Sammi Line Blinds do extensive physical testing to prove designs. Designs are performed using developed design software and proven by finite element analysis.*



### ASTM Standard

- ASTM F1020-82 : Standard specification for Blind valve for Marine Application



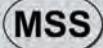
### ASME Standard

- ASME Sec.II : Materials
- ASME Sec.VIII Div. I : Rules for Construction of Pressure Vessels
- ASME Sec.IX : Qualification Standard for Welding and Brazing Procedures
- ASME B15.5 : Pipe Flanges and Flanged Fittings
- ASME B16.34 : Standard for valves-Flanges, Threaded and Welding end
- ASME B31.1 : Power Piping
- ASME B31.3 : Process Piping



### API Standard

- API Spec. Q1 : Specification for Quality Program for the Petroleum and Natural Gas Industry
- API Spec. 5L : Specification for Line Pipe
- API Spec. 605 : Larger-Diameter Carbon Steel Flange
- API 598 : Valve Inspection and Test
- API 607 : Fire Test for Soft-Seated Quarter Turn Valves.
- API 590 : Steel Line Blanks



### MSS Standard

- SP-6 : Finish for contact faces of pipe flanges and connecting end flanges of valves and fittings
- SP-25 : Marking system for valves, fittings, flanges and unions
- SP-55 : Quality standard for steel castings for valves, flanges and fittings, and other piping components (visual method)

### ■ Pressure Test (ASTM F1020, API598)

Class	Seat & Shell
150	23kg/cm <sup>2</sup> (325psi)
300	58kg/cm <sup>2</sup> (825psi)
600	116kg/cm <sup>2</sup> (1,650psi)
900	172kg/cm <sup>2</sup> (2,450psi)
1500	288kg/cm <sup>2</sup> (4,100psi)

### ■ F.E. Analysis

- Sliding type, NPS 24, ASME 300LBS, Carbon Steel body Valve, part coupled thermal-structural F.E. Analysis (ABAQUS Ver. 6.8-EF1)

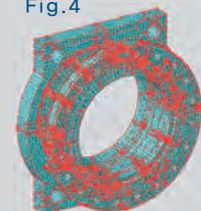
#### Coupled Analysis

##### Mechanical+Thermal Problem

Fig.3



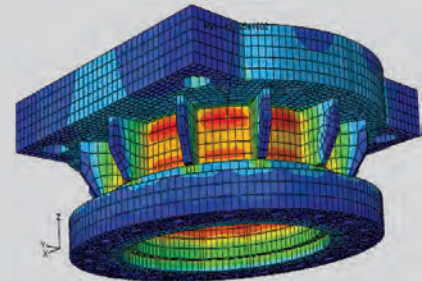
Fig.4



Atmosphere Temperature (23.3°C)

#### Stress distribution

Overall stress distribution is the same as each other (inside pressure 47bar,57bar)



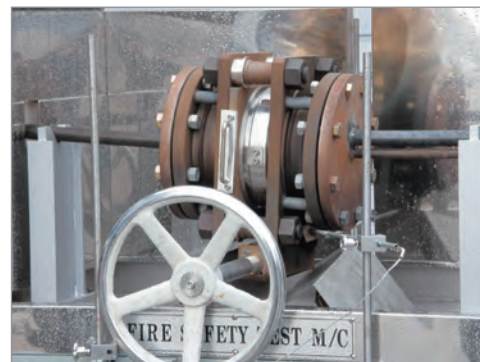
ISO View	20°C	30°C	40°C
	50°C	60°C	70°C
	80°C	90°C	100°C



# Safety & Material



Fire Safety Test(API 607)



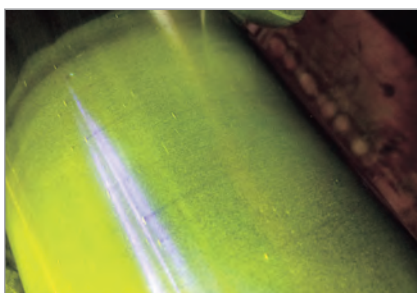
Hardness Test



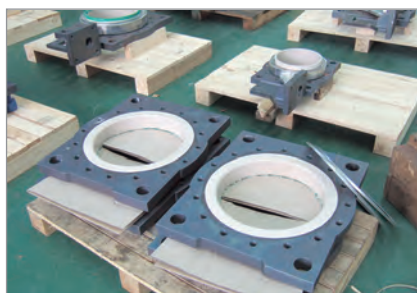
Positive Material Identification (PMI)



Heat Treatment



Magnetic Particle Testing (MT)



ETFE Coating



Xylan Coating



Metal Spray



Weld Built Up

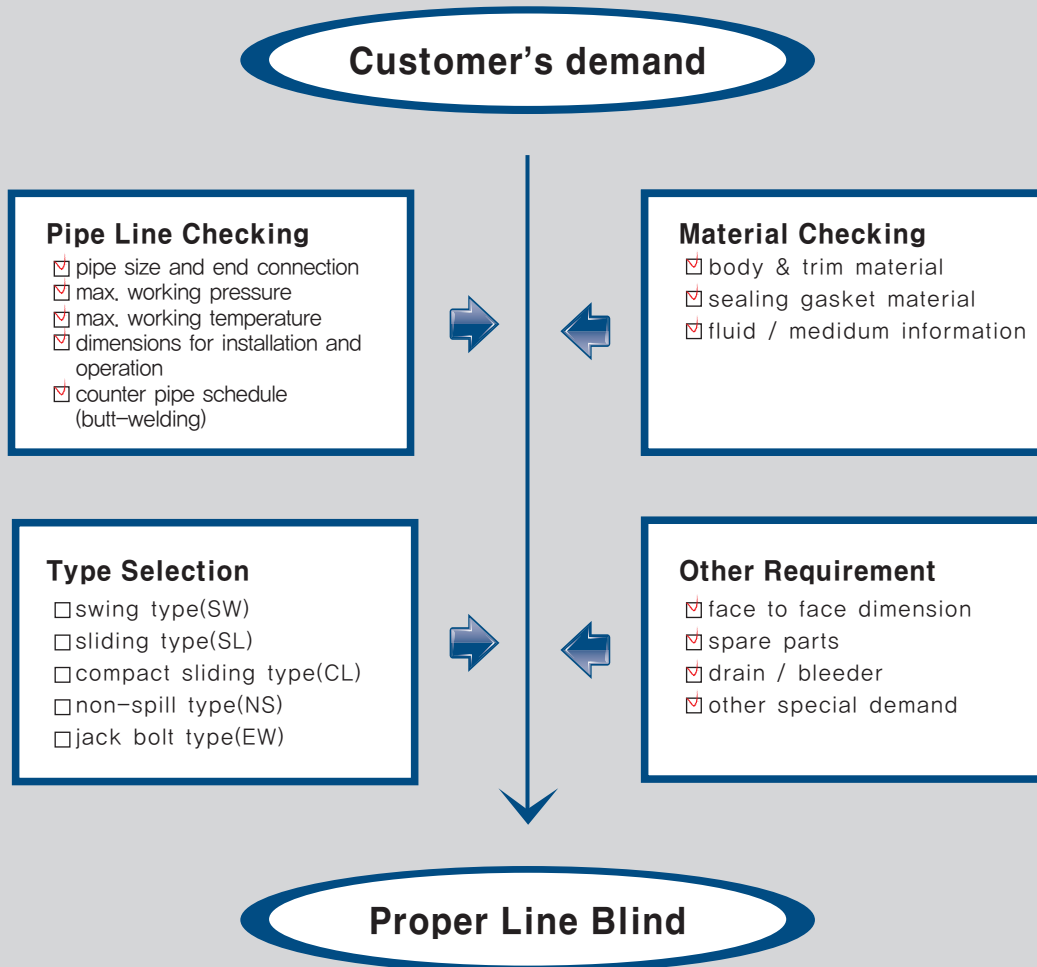


Weld Built Up

## ■ Material

Carbon Steel, Stainless Steel, Duplex, Hastelloy, Alloys and other special materials are available

# Guide to select a proper line blind



## Product Code

**SW 8 – AN300 – CS/304/FKM**

(a) (b) (c) (d) (e) (f)

Size  
ex) 8 = NPS 8  
= DN200 = 200A

**Type**  
SW : Swing Type  
SL : Sliding Type  
CL : Compact Type  
NS : Non-Spill Type  
EW : Jack Bolt Swing Type  
EL : Jack Bolt Sliding Type

**Class**  
AN300 : ASME Class 300  
PN16 : ISO PN 16 bar  
JS20 : JIS Class 20 kg/cm<sup>2</sup>

**Body Material**  
ex) CS : Carbon Steel  
304 : Stainless Steel 304  
C276 : Hastelloy C276

**Blind Material**  
ex) CS : Carbon Steel  
304 : Stainless Steel 304  
C276 : Hastelloy C276

**Sealing Material**

NBR / HNBR : Nitrill Rubber, Buna-N  
FKM / FPM : Viton  
FEPV / PFAV : Teflon Encapsulated O-ring  
VMQ / FVMQ : Silicone, Fluoro Silicone  
EPDM : Ethylene Propylene Rubber  
FFKM / FPPM : Perfluoro Elastomer, Kalrez, Chemrez  
SP : Spiral Wound Gasket  
GR : Graphite  
Soft Metal

## Free from leakage trouble



■ Loading Arm -Ethylene Propylene.SM



■ Reactor isolation for chemical cleaning

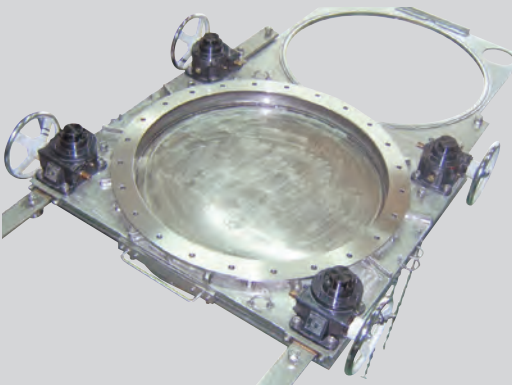
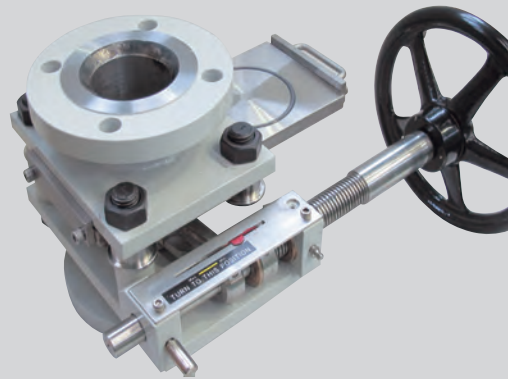


■ Product carrier tank isolation

*Total equipment isolate valves are never 100% reliable. The Most advanced technology of Sammi Line Blind allow one operator to Blank heavy pipework with quick and safe.*



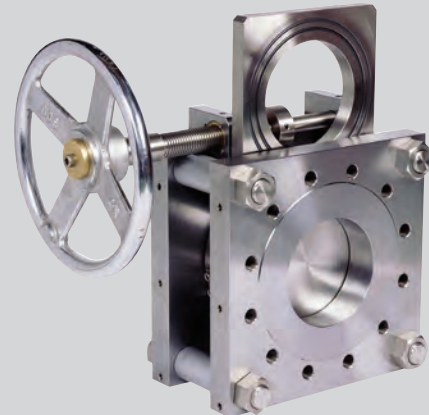
■ Gasoline & MTBE Line



■ Ethylene(-104deg.C)



■ A loading arm construction (S-Oil in Korea)



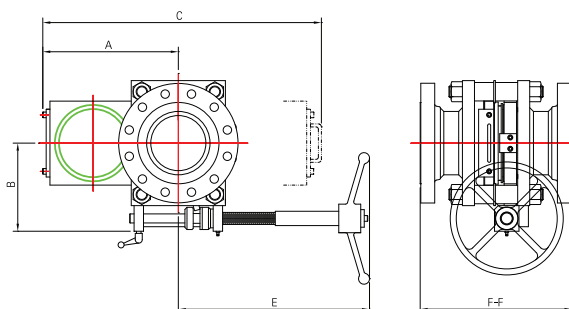
## Application Guide for Sealing Materials

Material /Temperature	Property	Recommended Use	Not Recommended For
Nitrile (Buna-N) -40 C to +135 C Nitrile (Low-Temp) -65 C to +120 C	Good resistance to petroleum based oils and fuels, silicone greases, hydraulic fluids, water and alcohols. It has a good balance of working properties such as low compression set, high tensile strength, high abrasion resistance, combined with a low cost.	Silicone Greases / Oils Water Petroleum Oils / Fuels Ethylene Glycol Fluids	Keytones (MEK) Halogenated Hydrocarbons Auto / Aircraft Brake Fluids Strong Acids Sunlight, Ozone, Weathering phosphate esters, H <sub>2</sub> S
Viton® (Fluorocarbon ) -30 C to +204 C	Featuring excellent resistance to petroleum products and solvents, with good high temperature and low compression set characteristics. For use with wide chemical exposure situations, and with low gas permeability, it is also suited for hard vacuum service.	Most Acids / Chemicals Halogenated Hydrocarbons Di-Ester Lubricants Petroleum Oils / Fuels Silicone Oils / Greases transmission fluid	Keytones (MEK) Auto / Aircraft Brake Fluids Amines (Ammonia) H <sub>2</sub> S Acetone, Skydrol, Ethyl Acetate Hot Water and Steam Low Molecular Esters and Ethers
Aflas -30 C to +204 C *reg. TM Asahi Glass Co.	Aflas is a unique fluoroelastomer resistant to petroleum oils, steam, hydrogen sulfide and amine corrosion inhibitors. This compound is generally used for sour gas oil field services.	Petroleum oils, H <sub>2</sub> S, steam	Acetone, lacquers
EPDM (Ethylene Propylene) -54 C to +150 C	Ethylene Propylene has excellent ozone and chemical resistance characteristics. Generally used in automotive brake systems.	Brake fluids, refrigerants, Sunlight, Ozone, Weathering Hot Water and Steam Auto / Aircraft Brake Fluids	Petroleum Oils, Fuels, diester lubricants
FVMQ (Fluorosilicone) -62 C to +240 C	Fluorosilicone combines the good high and low temperature stability of silicone with the fuel, oil, and solvent resistance of fluorocarbon	Jet Fuel, Dry Heat, Wide Temperature Range ,Petroleum Oils, Chlorinated Solvents, Gasoline	Keytones (MEK) Phosphate Esters Some Acids Auto / Aircraft Brake Fluids Amines (Ammonia), Acetone, Ethyl acetate
Highly Saturated Nitrile (HSN, HNBR) -26 C to +160 C	A nitrile elastomer with excellent resistance to petroleum oils, and sour gas. With the extended temperature range, HSN is becoming a preferred compound in the oil patch	Petroleum oils, H <sub>2</sub> S, CO <sub>2</sub>	Brake fluid

# Application Guide for Sealing Materials

Material /Temperature	Property	Recommended Use	Not Recommended For
Neoprene -40 C to +135 C	Due to its excellent resistance to freon and ammonia, Neoprene is widely accepted as a preferred elastomer for refrigeration seals	Refrigerants, alcohol, ozone, Ammonia Some Petroleum Oils Dilute Acids Silicone ester Lubricants	Petroleum oils, Toluene, Keytones (MEK) Gasoline, Auto / Aircraft Brake Fluids
Polyurethane -50 C to +105 C	An excellent elastomer with high abrasion resistance characteristics and high tensile strength. Used in high pressure hydraulic systems where highly stressed parts are subject to wear.	Petroleum oils, hydraulic oils, Some Hydrocarbon Fuels, Oxygen / Ozone, Drive Belts	Keytones (MEK) Acids Auto / Aircraft Brake Fluids Chlorinated Hydrocarbons Water
Silicone (VMQ) -65 C to +260 C	Silicone elastomer is resistant to high, dry heat, in primarily static applications. It has low compression set characteristics and a wide temperature range.	Dry Heat, alcohol, vegetable oil, Wide Temperature Range, Sunlight, Ozone,? Weathering Odorless and Non-Toxic	Keytones (MEK) Acids Silicone Oils Brake Fluids, petroleum oils & fuels
Teflon (PTFE) -40 C to +240 C	Excellent chemical resistant, Teflon is a tough, chemically inert elastomer possessing an incredible working range. For static and slow intermittent dynamic situations, Teflon is hampered only by its poor memory at low temperature.	Most chemical Resistance, Fuel Resistance, Low Coefficient of Friction	Non-Elastic
FFPM / FFKM (Chemraz® Kalrez® Simriz® Perfluoroelastomer) ~ +323 C	Excellent chemical resistance, Excellent Temperature resistance elastomer Various Compounds Designed for Specific Applications	High Temperature Resistance Excellent Chemical Resistance Low Out Gassing Chlorine Wet/Dry Petroleum Oil Chlorinated Hydrocarbons	Molten metals Gaseous Alkali Metals Halogenated Freons/Fluids Uranium Hexafluoride
FEPV / PFAV (Teflon Encapsulated O-Ring) -40 C to +260 C	Covered with Teflon Tube Usually Silicone or Viton® Good Wear Resistance Good Permeation Resistance	Most chemical Resistance, Fuel Resistance, Low Coefficient of Friction, Heat Resistance	Depends on O-Ring Core
Graphite (Pure, Engineered) -240 C to +800 C	Excellent chemical stability and wide range of temperature extreme low & high	Most chemical resistance, Excellent heat resistance	

## Dimension - Sliding type



### ■ Class 150

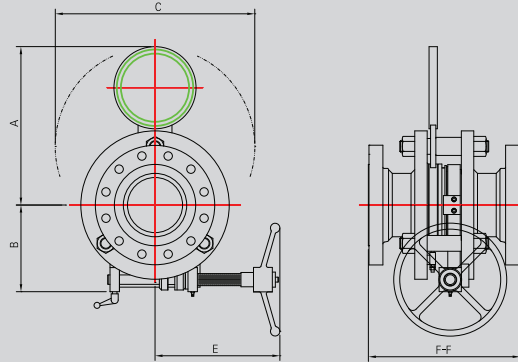
Size		F-F	A	B	ØC	E	kg
inch	DN						Weight(NET)
1	25	190	117.6	94.5	235.1	176.2	10
1 - 1/2	40	210	144.5	117.6	289.1	203	15
2	50	220	165	131.5	329.9	246.5	24
2 - 1/2	65	240	181	139.4	361.9	260.3	27
3	80	260	221.3	170	463	342	33
4	100	260	257.4	182	535.2	369	49
6	150	310	348.1	230	716.2	478	82
8	200	340	420.6	275.5	861.2	546.4	122
10	250	360	517	355.3	1083.3	468.5	198
12	300	390	576.7	375.5	1180.4	505	308
14	350	450	645.5	433.5	1323	553.2	420
16	400	500	722	494.9	1478.9	569.2	584
18	450	540	806.9	536.2	1649.8	645.7	720
20	500	600	919.7	585	1839.5	656.2	950
24	600	680	1081.3	700	2162.7	747.1	1108

### ■ Class 300

Size		F-F	A	B	ØC	E	kg
inch	DN						Weight(NET)
1	25	200	122.8	94.6	245.6	176.2	10
1 - 1/2	40	230	144.5	123.6	289	203	18
2	50	240	167	131.5	334	253.7	26
2 - 1/2	65	260	181.1	139.4	362.2	267.4	33
3	80	300	225.5	168	469	353	42
4	100	320	284.2	186.5	550.4	381.5	78
6	150	390	359.9	234	739.8	494.5	131
8	200	420	440.8	275.5	901.6	578.5	190
10	250	480	501.3	335.3	1034.6	461.8	262
12	300	510	579.7	390.5	1205.3	500	382
14	350	600	670	440	1340	562	540
16	400	690	749.4	514.9	1533.8	600.9	645
18	450	700	791.6	541.7	1619.3	623.3	920
20	500	780	921.1	595	1842.2	728	1176
24	600	840	1095.6	660	2191.3	803	2084



## Dimension - Swing type



### ■ Class 150

Size		F-F	A	B	ØC	E	kg
inch	DN						Weight(NET)
1	25	190	133	88	163	150.7	10
1 - 1/2	40	210	163.4	106	201.5	175.9	15
2	50	220	193.7	122.5	238	218	24
2 - 1/2	65	240	220.3	132.5	272.4	218	27
3	80	250	263.1	157.5	327.1	264.5	34
4	100	250	298.5	175	375	286	52
6	150	290	420.6	230	529.5	331.5	87
8	200	320	520	280.5	655	385	127
10	250	330	602.5	344	765	486.2	206
12	300	380	699.5	406	872.5	446	296
14	350	430	748.3	448.5	949	557.2	535
16	400	520	851.9	497.5	1084.2	569.2	589
18	450	530	959.3	533	1223.4	642.7	702
20	500	670	1039	615	1368	656.2	954
24	600	760	1264.6	709	1602.6	749.1	1108

### ■ Class 300

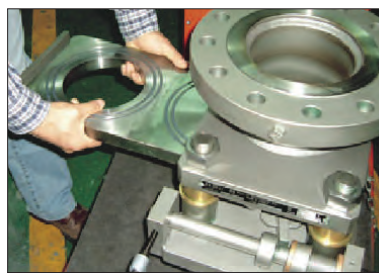
Size		F-F	A	B	ØC	E	kg
inch	DN						Weight(NET)
1	25	200	133	88	163	150.7	10
1 - 1/2	40	230	167.4	111	205.5	186.4	18
2	50	240	193.7	120.5	238	216	26
2 - 1/2	65	260	220.3	132.5	272.4	220.2	33
3	80	290	263.1	157.5	327.1	264.5	42
4	100	310	298.5	175	375	286	81
6	150	370	420.6	230	529.6	331.5	136
8	200	420	520	290.5	655	382	196
10	250	460	611.5	351.5	773	530.6	257
12	300	530	716	441.5	905.5	505	402
14	350	590	748.3	455	949	562	556
16	400	660	871.9	668.9	1104.2	614.7	680
18	450	710	965.1	756.9	1229.8	665.7	950
20	500	760	1058	791.9	1350	693.7	1145
24	600	860	1213.6	927.5	1552.6	793	1850

## Maintenance (Sliding type)

*Sliding type line blind valve repair sequence*



**Step1.** remove the end-plate of the blind



**Step2.** take out the blind plate



**Step3.** remove the both seat holder



**Step4.** take out the seat



**Step5.** replace the internal O-ring

Assembling should  
be done inversely

### ■ Warranty

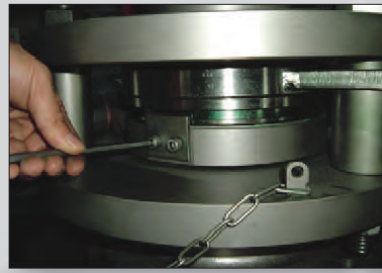
*Sammi Machinery Co.,Ltd. Warrants to buyer as the original purchaser that all products manufactured by it shall be free from defects in workmanship and materials for THREE YEARS when properly installed and operated.*

# Maintenance (Swing type)

## *Swing type line blind valve repair sequence*



**Step1.** remove the position ass'y



**Step2.** remove the both seat holder



**Step3.** turn the spectacle plate 90 degree



**Step4.** take out the seat



**Step5.** replace the internal O-ring

Assembling should be done inversely



**Sammi Machinery Co., Ltd.**

1260-2, Yeonkeum-ri, Sangnam-myeon, Miryang-si, Kyungnam, S.Korea(627-912)

Tel. +82 55 354 7503

Fax. +82 55 354 7533

e-mail. [sm@sammiw.com](mailto:sm@sammiw.com)

web site. [www.sammiw.com](http://www.sammiw.com)