

Non Drip Cam-Slide®

Fetterolf Line Blinding System



SchuFF

Safe, Fast, and Convenient

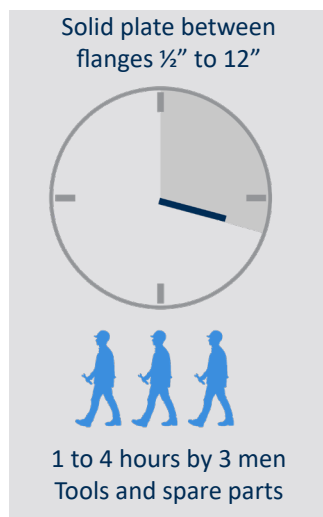
Blinding product lines connected to reactors, vessels or tanks is a business critical procedure in most chemical, petrochemical, tank storage, refinery or pharmaceutical plants.

Safe

Fast acting line blinds ensure the safety of personnel engaged in maintenance and operations. They provide 100% positive isolation and when used in tandem with isolation valves provide the highest level of plant and personnel safety.

Fast

The Cam-Set® and Cam-Slide® product range not only ensures safety, but enables blinding to be carried out in less than one minute – a time and productivity saving that pays back the initial cost in a short period of time.



Convenient

The Cam-Set® and Cam-Slide® can be operated by one person, from one side of the blind without the need for special tools or lifting equipment. It is also beneficial in preventing product cross contamination.

Key Features

- Positive Shut-Off
- No Spreading of Pipe Required
- Visible Position Indicator
- Fast, One-Person Operation
- Minimum Maintenance
- Available in CS, SST, and most Alloys

Product Choice

Fetterolf Corporation invented the first fast acting line blind (Cam-Set®) in 1979. Since then it has developed a portfolio of blinding products to meet almost any blinding requirement: Compact design for tight spaces, High Temperature, Non Drip, Fire Safe as well as sliding and swinging variants. We also offer customized solutions.

Standards and Certification

All SchuF Fetterolf Line Blinds are built to exacting quality and engineering standards. We follow the ASME Boiler and Pressure vessel code and API standards. We also conform to DIN, CRN, JIS, NACE, PED and US Navy standards as required.



Quality

Fetterolf Quality System is an ISO 9001:2015 and Lloyds Register Certified quality company.

Swinging Types



Cam-Set® - 81FC



Cam-Set® with Counterweight - 81FC-*



Cam-Set® with Strainer - 81FC-*



Stacey® Line Spreading Blind - 81FS

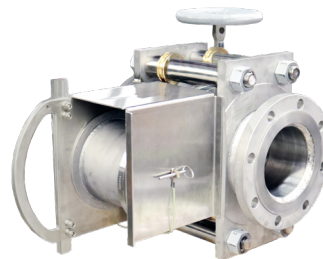
Sliding Types



Cam-Slide® - 81CS



High Temperature Cam-Slide® - 81HS



Cam-Slide® with Rupture Disc - 81CS-*



Non Drip Cam-Slide® - 81NS

* to indicate model variant

Non Drip Cam-Slide® Model 81NS

Line blinding is a proven method used to ensure 100% positive isolation and thereby enhances worker safety and efficiency. By definition, in the open or closed position there are no drips or spills possible.

Requirement for a Non Drip Design

During the changing of the position from open to closed or vice versa, there is a possibility that some medium remains in the line. This medium could drip to the ground as during this time the blind is open to the atmosphere. This can be minimized on other models such as the Cam-Set® by draining the body of the line blind (drain ports are available) and/or the pipeline itself before switching.

Changing environmental regulations in certain industries (oil & chemical stations, offshore, or on-shore near seas and rivers) and applications where zero drips are allowed, led to the development of the Non Drip Cam-Slide® line blind.

Description

The Non Drip Cam-Slide® is the ideal blinding solution where pollution is strictly prohibited.

Key Features

- No drips during blinding process
- Reduced face to face dimensions
- Vertical plate movement reduces space required between pipelines
- 3 Designs to choose from
- Absolute positive shutoff

This is achieved by either adding an enclosure underneath the body of the line blind (Non Drip Cam-Slide®) or by enclosing the sides of the blind body (in the Half or Full Plate Design).

Fast, Safe, & Clean



Model 81NS

Actuated Non Drip Cam-Slide®

Both clamping and unclamping and plate travel are enabled by the actuator assisted hand wheels. In the above picture the stem has been extended so that the line blind can be operated from above on a platform or walkway. The vertical plate movement design is also useful where space is limited – e.g. parallel pipelines in close proximity, or where the face to face dimensions must be reduced.

Position indicators can also be added to the extensions to allow the operator to know the exact position of the plate or clamping status.

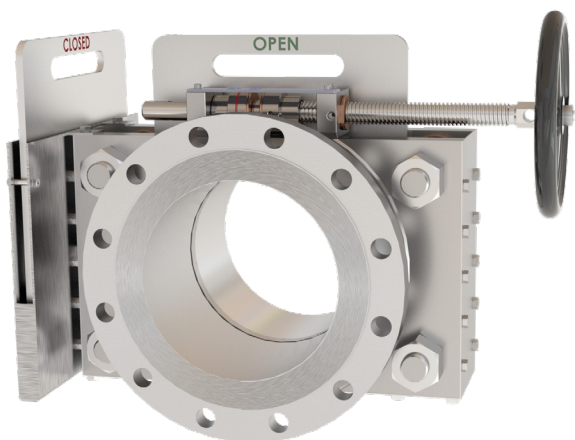
If there is limited space below the pipe, we have alternate designs that address this issue.

Space Saving Non Drip Options

Half Plate Non Drip Cam-Slide®

Model 81NS-HP

The Half plate design ensures the same non drip functionality without having the need for a large drip pan below the line blind body. This is important in some blinding locations where space below the pipeline is not available. It is achieved by enclosing the sides and bottom of the blind. In this instance two plates are provided – a blind (closed) and a through plate (open). A slot container is also provided to hold the plate not in use.



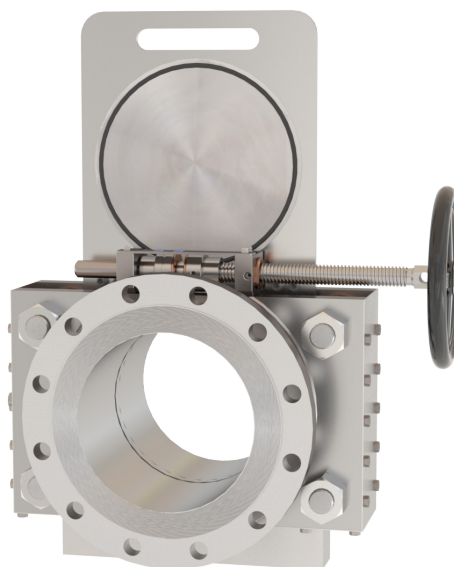
Features

- Most compact design
- Separate plates for blind and thru
- Includes holding compartment for unused plate
- Plate changing done by hand
- Recommended up to 12"

Full Plate Non Drip Cam-Slide®

Model 81NS-FP

The full plate design is the same in every aspect as the half plate design, except that it only has one plate with both through and blind positions. This is sometimes preferred where there are concerns that the second half plate might be misplaced.



Features

- Single spectacle plate design
- Compact drip pan saves space
- Open or Closed position achieved by lifting & inverting full plate
- Recommended up to 8"

Technical Specifications

Nominal Diameters

1/2" (DN15) to 60" (DN1500)

Temperature Range

Standard Design:

-20°C + 205°C (14°F - 400°F)

Actuation Method

Manual, Pneumatic,
Hydraulic, Electric

Pressure Rating

ASME 150# - 2500# (PN6 - PN420)

* Special Ratings and end flanges
available on request:

- EN, JIS, HG, etc.

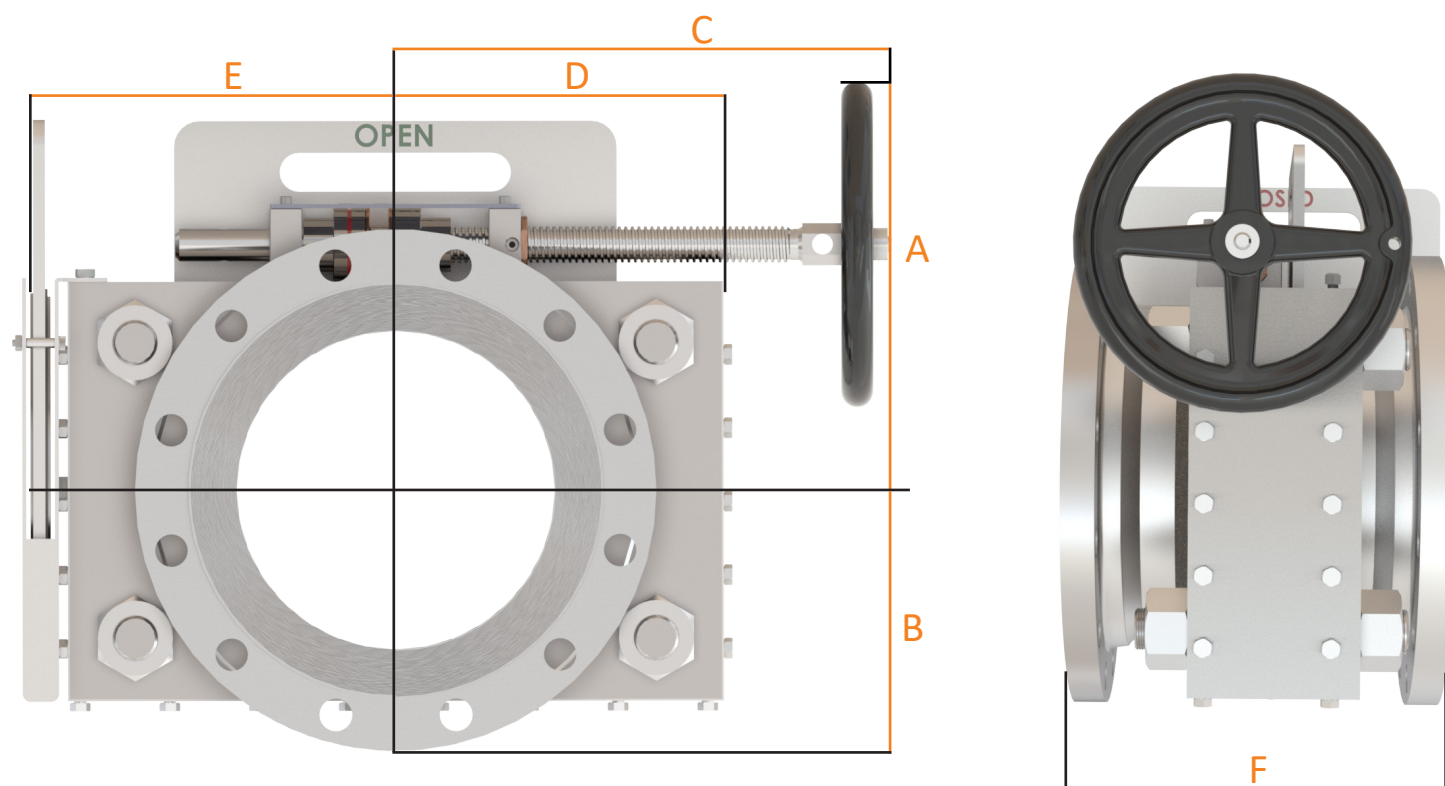
Standard Materials

- Body: Carbon or Stainless Steel
- Plate: Stainless Steel
- Drip Enclosure: Stainless Steel

* Special Materials on request

Dimension Table

Model 81NS



HALF PLATE NON DRIP CAM-SLIDE® DIMENSION TABLE (ASME 150#) in mm

SIZE (ASME)	SIZE (DIN)	A	B	C	D	E	F	~ Weight Kg/Lbs
1"	DN 25	145	55	185	93	125	178	11/25
1-1/2"	DN 40	155	63	195	95	130	190	15/33
2"	DN 50	160	75	205	97.5	130	203	17/38
3"	DN 80	160	95	235	130	165	222	32/71
4"	DN 100	175	115	290	170	205	248	50/110
6"	DN 150	235	140	300	190	225	292	90/198
8"	DN 200	260	175	360	215	250	318	105/231
10"	DN 250	320	203	372	260	300	356	171/377
12"	DN 300	380	243	435	305	350	381	245/539

The above table outlines our standard dimensions. The actuated version will have similar body dimensions but certain options such as the stem extension and gear box orientation can change the standard dimension. Custom dimensions can also be accommodated in certain cases.

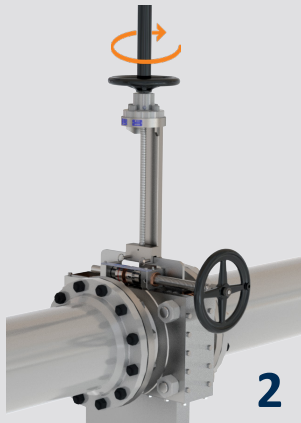
Operation of Non Drip Cam-Slide®

Depressurize and drain line before use

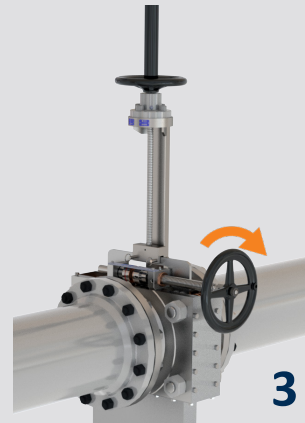


Indicator will be in unclamped position

Turn hand wheel counterclockwise to unclamp spectacle plate



Turn hand wheel clockwise to actuate spectacle plate to blind position



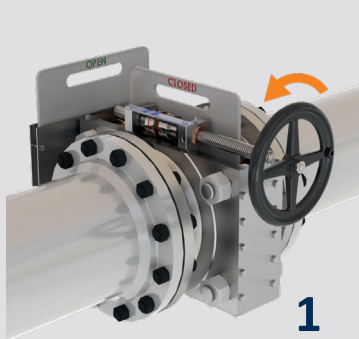
Turn hand wheel clockwise to re-clamp spectacle plate



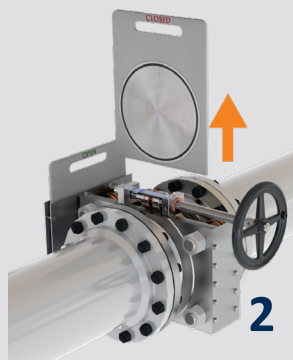
Indicator will be in clamped position

Operation of Half Plate Non Drip Cam-Slide®

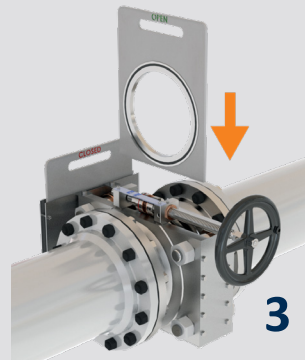
Depressurize and drain line before use



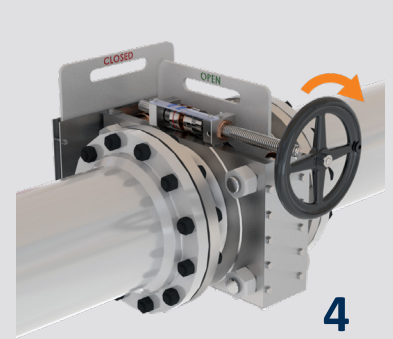
Turn hand wheel counterclockwise to unclamp spectacle plate. Indicator will be in unclamped position (below)



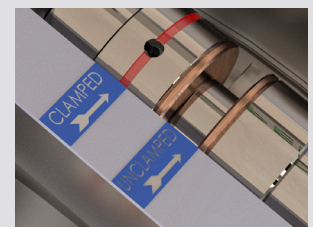
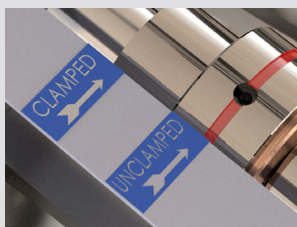
Remove blind plate



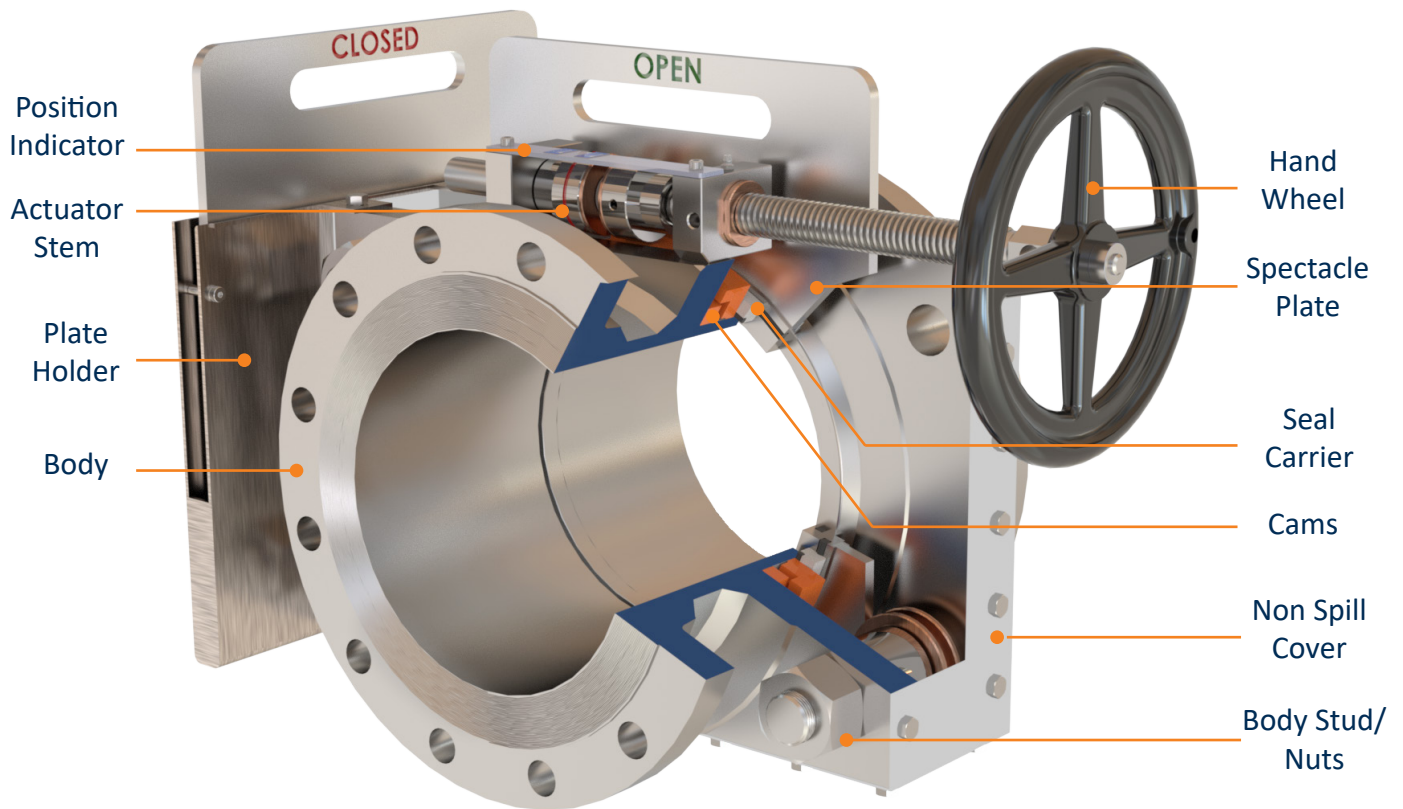
Insert thru plate



Turn hand wheel clockwise to clamp spectacle plate and seal line blind. Indicator will be in clamped position (below)



Half Plate Non Drip Cam-Slide® Cutaway*



*Same internal design is used in full plate and actuated versions

Standard Material Chart

Part Description	Material
Body	Carbon Steel or Stainless Steel
Spectacle Plate	Stainless Steel
Seal Carrier	Stainless Steel
Cams	Stainless Steel
Actuation Stem	Carbon Steel
Body Studs	A193-B7 or A193-B8
Nuts	A194-2H or A194-8
Seals	FKM (Viton), FFKM, EPDM, Buna-N, NBR, PTFE etc

Other materials and seal rings are available upon request

Options

- Hand Wheel Extensions
- Locking Device
- Limit Switches
- Drain/Vent ports
- Spectacle Plate Covers to Protect Seals
- Compact Design (integral tapped end flange)
- Rain/Dust Shield
- Torque Limiter

Application Examples

I. Refueling Vessel Installation - USA

Non Drip Cam-Slide® designed for use onboard a refueling vessel that required zero spillage. Provided below with extended stem, customer specified hand wheel orientation, and drain and vent ports.



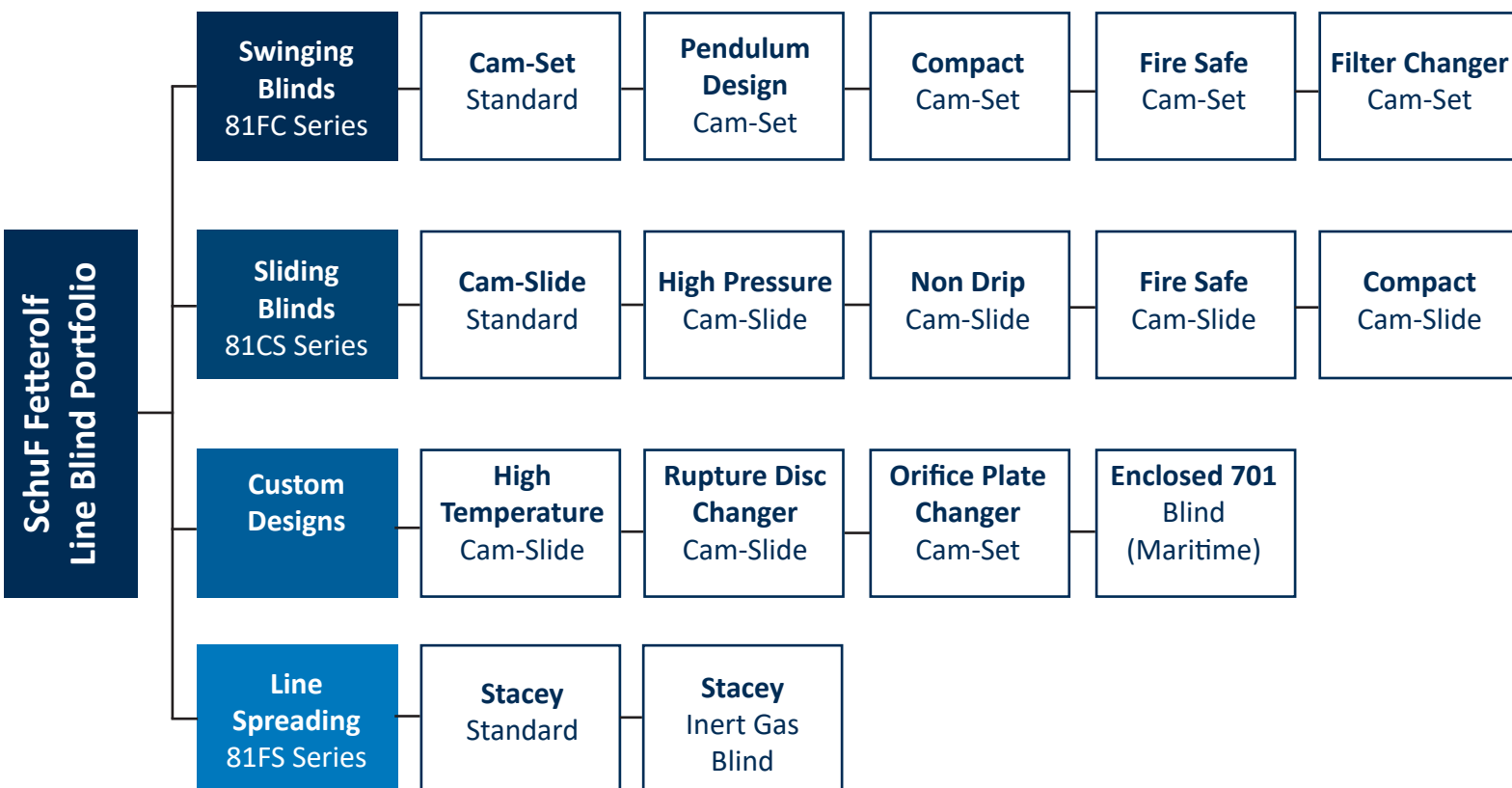
No Drip Guaranteed



II. Tank Farm Installation - Singapore

12" Non-Drip with extended hand wheel installed for ease of access from the walkway. Customer defined compact face to face dimensions





Fetterolf Line Blind Customer List

Chemical & Petrochemical

Akzo Nobel
BASF
Bayer
Braschem
Celanese
Chevron Phillips
Dow Chemical
DuPont
Eastman
Formosa Plastics
Henkel
Ineos
Kemya
LG Chemical
Lubrizol
Mexichem
Momentive
Mitsubishi Poly-silicone
Nova Chemicals
OXY Vinyl
Petronas

Sabir
Solvay
Tianye PVC

Steel & Minerals

Arcelor Mittal
AK Steel
Alcoa
Bhushan Steel
BHP nckel
Corus Steel
Essar Steel
Hindalco Industries
Rio Tinto
Saarstahl AG
Tronox
Tata Steel
Thyssen Krupp
US Steel

Oil, Gas & Refinery

BP
BOC
Cenovus Energy
CNRL
Emerates Gas
Exxon
ENOC
Gas de France
Lukoil
Linde Gas
Methanex
Phillips 66
Puma Energy
GATX Terminals
Oil Tanking
Petrobras
PDVSA
Shell
Petronor
Tenova Core
Turkish Petroleum
Tupras Refinery

Offshore & Shipping

BP Exploration
Crowley Maritime
General Dynamics
Hyundai Ship Building
Keppel Marine
Langset Terminal
Northrop- Grumman
Modec Offshore
Pemex
Jurong Port
Sea River Maritime
Sembawang Shipyard
Solar Turbines
Texaco Oil & Marine
Thai Tank Terminal
US Navy
VT Halter Marine
Vopak
Wallen Ship

Pharmaceutical

Eli Lilly
Johnson Matthey
Merck
Pfizer
Rhone Poulenc
Sandoz
Zeneca

Commercial

Absolut Vodka
Dow Agrosiences
Evonik
Flint Hills
General Electric
Monsanto
Nestle
Proctor & Gamble

Cam-Set & Cam-Slide Valve Enquiry Form

Contact information	Contact name:				
	Company:				
	Country:				
	E-mail address:				
	Telephone number:				
Process details	Medium:				
	Operating Temperature:				
	Operating Pressure:				
	Other, please specify:				
Description Please select which model you prefer	Standard Cam-Set & Cam-Slide Models Description				Please specify if models A to M do not meet your requirement
	<input type="checkbox"/> Model A - Carbon steel	<input type="checkbox"/> Model B - Stainless steel wetted parts	<input type="checkbox"/> Model C - Stainless steel	<input type="checkbox"/> Model M - Maritime	
Body (triangle)	Carbon steel	Carbon steel	Stainless steel	Carbon steel	
Body pipe	Carbon steel	Stainless steel			
Seal carrier	Stainless steel				
Spectacle plate	Stainless steel				
Bolting	Carbon steel			Stainless steel	
Stem	Carbon steel	Carbon steel	Carbon steel	Monel	
Seals	Viton				
Actuation	Hex nut			Bronze hand wheel	
Please answer the questions in sections 1 to 5 below (6 is optional)					
1. Valve Type	Please select a type of valve below: <input type="checkbox"/> Cam-Set <input type="checkbox"/> Cam-Slide <input type="checkbox"/> Non-Drip <input type="checkbox"/> High Temp				
2. Size	Please choose a size between (DN 10-15) 1/2" and (DN 1500) 60"				
3. Pressure class	Please enter the pressure class required for the Line Blind (typically ASME 150#, 300#, or 600#) or PN Value (PN10, PN16, or PN40)				
4. Connections	Please select the connection type that you would prefer: <input type="checkbox"/> Flanged <input type="checkbox"/> Butt-Weld				
5. Orientation	Please specify the orientation of the pipeline as Horizontal (H) or Vertical (V)				
6. Options	Please specify				
	Actuation Options - <input type="checkbox"/> Hand Wheel <input type="checkbox"/> Pneumatic <input type="checkbox"/> Hydraulic <input type="checkbox"/> Hex Nut				
	Seals in spectacle plate - <input type="checkbox"/> Yes or <input type="checkbox"/> No				
	Counterweight (recommended over 12" horizontal pipeline for <u>cam-set design only</u>) <input type="checkbox"/> Yes or <input type="checkbox"/> No				
	Roller support for spectacle plate (Vertical pipeline) - <input type="checkbox"/> Yes or <input type="checkbox"/> No				
	Locking device - <input type="checkbox"/> Yes or <input type="checkbox"/> No				
	Dust cover(s) - <input type="checkbox"/> Yes or <input type="checkbox"/> No				
	Alternative sealing rings (Teflon, Nordel, PTFE; Graphite, spiral wound gasket, etc.)				
	Special coatings - please specify (e.g. Epoxy, Sermetel etc.)				
Connections Required - <input type="checkbox"/> Drain <input type="checkbox"/> Purge <input type="checkbox"/> Sampling					

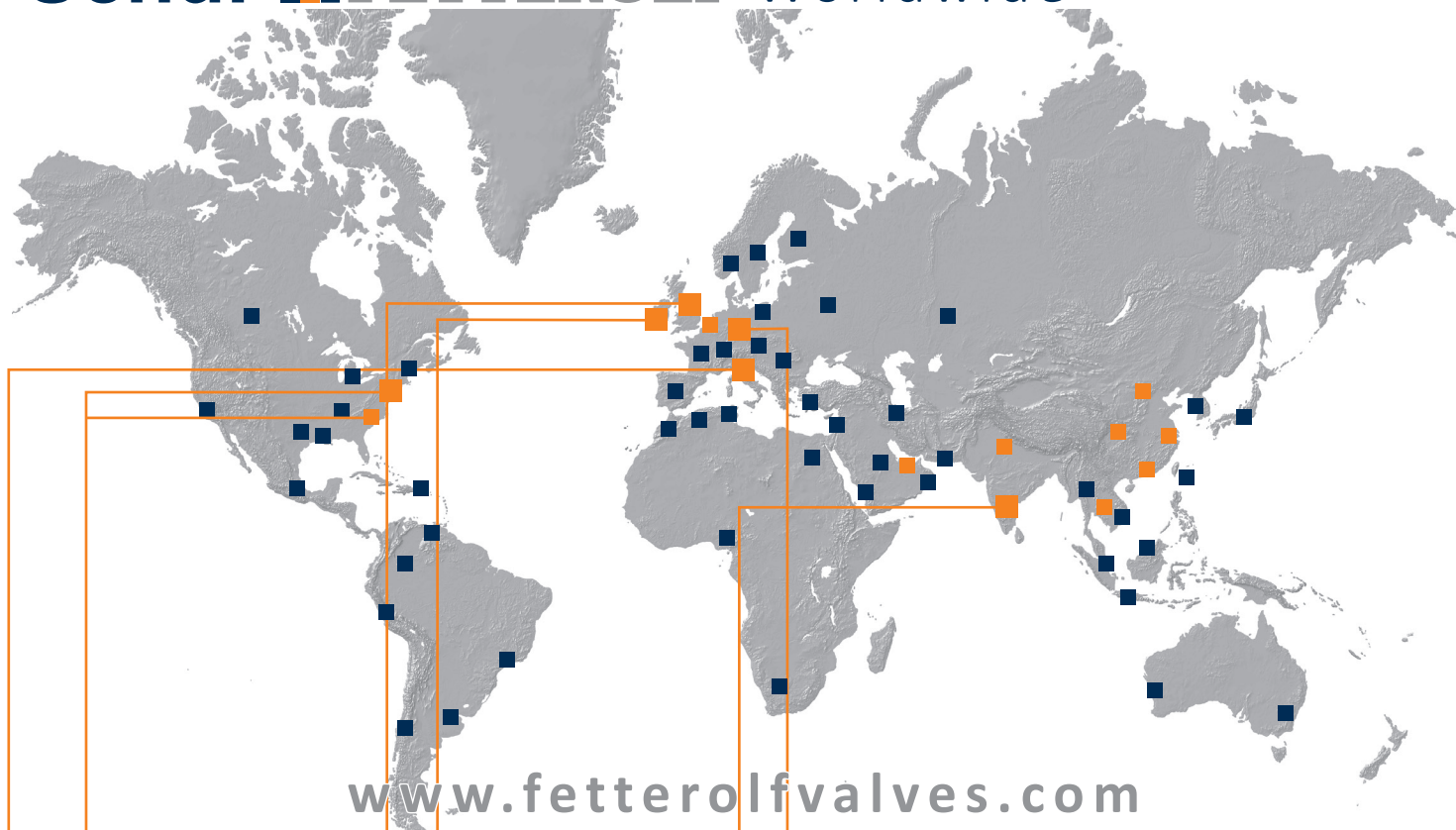
6. Comments

Notes: Please provide as much information as possible on this form. If any point is unclear, please leave blank. If you prefer to talk to us via the phone please contact us on the telephone number below, or contact our local representative.

The above form is intended to help describe the options available for the Cam-Set. SchuF Fetterolf also provides customised line blind system designs to meet severe conditions, high temperatures, and pressure classes to ASME 2500#. If you are interested in these products please contact us by e-mail. Thank you.

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