



CLARKSON KLB WAFER STYLE LINEAR LINE BLIND

KLB wafer style linear line blind offers value, high performance and safety in a compact package



FEATURES

- Linear line blind simplifies a difficult, time-consuming process.
- No need to spread the pipe to blank the line, actuation can be automated.
- Visual confirmation of the blank from all sides.
- Standard with closed position dual-function lock-out assembly.
- Detachable pin removes potential energy from actuator.
- Lock-out pin prevents unwanted blind movement.
- 100% isolation-bubble tight shut-off results in absolutely zero downstream leakage, a true man-safe line blind.
- Patented, field replaceable elastomer sleeves available in a wide range of elastomers to meet varied applications.
- No seat cavity where solids can collect and prevent full blank closure.
- Adaptable yoke design featuring a top removal stem nut, can be field modified to an air cylinder or bevel gear in the field.
- Linear line blinds above NPS 24 are available including sizes up to NPS 54. Contact your sales representative for complete details.

US Patent 8,016,265

GENERAL APPLICATION

- Mining
- Power
- Pulp and paper
- Alumina
- Chemical
- Cement

TECHNICAL DATA

Size range: NSP 2 to 16 rated to 150 psi
NPS 18 to 24 rated to 90 psi

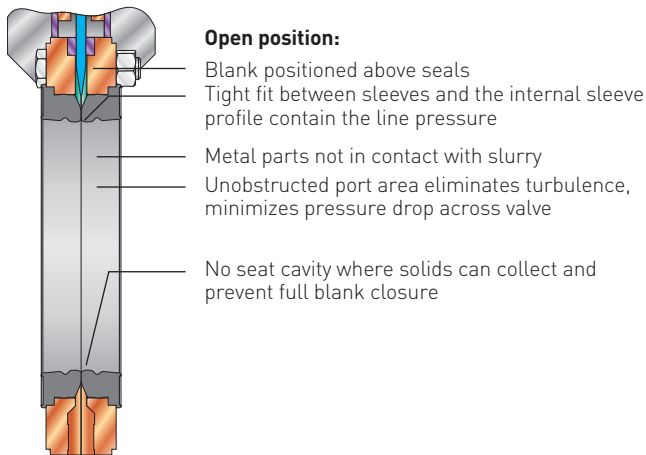
Temperatures: Standard sleeve rated to 180°F,
up to 300°F with proper
elastomer selection

Sleeve: Gum rubber (standard)

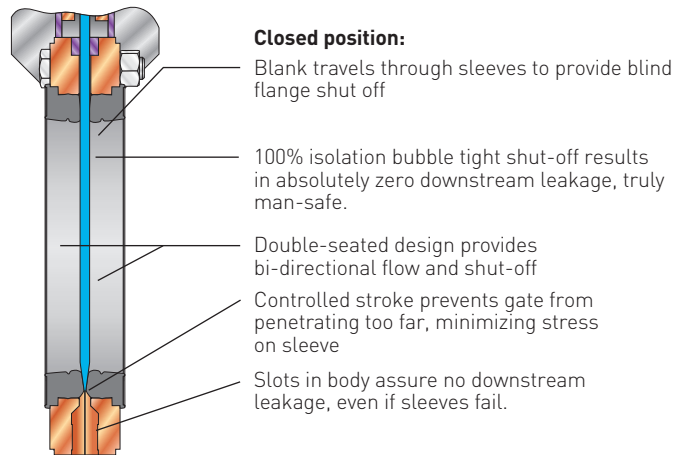
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HOW THE KLB SLEEVES WORK

Matching sleeves are placed in the KLB linear line blind housing to seal against each other when the blind is open, allowing full flow of the media and to seal against the blank when the blind is closed, fully isolating the upstream from the downstream. As the blank moves from open to closed position, it separates the facing sleeves. The unique KLB sleeve assembly provides positive sealing action when the blank is closed and when the blank is open; the sleeves provide an unobstructed port and protect metal parts from the flowing media. The design of the sleeves and body are such that no internal pressure or media is allowed to leak downstream even in the event of a downstream seal failure. Instead, the line pressure will vent to atmosphere, providing 100% isolation and protection.



Open position:
 Blank positioned above seals
 Tight fit between sleeves and the internal sleeve profile contain the line pressure
 Metal parts not in contact with slurry
 Unobstructed port area eliminates turbulence, minimizes pressure drop across valve
 No seat cavity where solids can collect and prevent full blank closure



Closed position:
 Blank travels through sleeves to provide blind flange shut off
 100% isolation bubble tight shut-off results in absolutely zero downstream leakage, truly man-safe.
 Double-seated design provides bi-directional flow and shut-off
 Controlled stroke prevents gate from penetrating too far, minimizing stress on sleeve
 Slots in body assure no downstream leakage, even if sleeves fail.

ACTUATION

NOTE: Not all actuators shown are available on all valve sizes.



MH Manual handwheel



BG Manual bevel gear



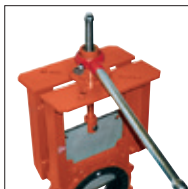
AC Air cylinder



HC Hydraulic cylinder



EM Electro-mechanical



RA Ratchet

STANDARD CONFIGURATION

- Ductile iron body housings.
- NPS 2 to 16 316 stainless steel blank rated for 150 psi, NPS 18 to 24 rated for 90 psi.
- Universal body housing drilled and tapped to match ASME B16.5 Class 150 companion flanges.
- High tear strength gum rubber sleeves with integral support rings.

OPTIONAL

Various gate materials:

- 316L S/S
- 317L MN
- 17-4 PH
- Hastelloy® C-276
- Ferralium 255
- 317L S/S
- Alloy 20
- Jessop 700

Others

- 316 S/S body housing (NPS 4 to 12)
- Sleeves (see page 3)
- Actuators (see page 4)
- Stem covers
- Control accessories
- Metric flange drilling

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AVAILABLE SLEEVE MATERIALS

Gum Rubber: This category includes all natural gum elastomers, both filled and unfilled and synthetic Polyisoprene. Has high tensile strength, superior resistance to tear and abrasion and good resistance to heat build-up. Maximum continuous operating temperature 180°F.

EPDM-HTP: Advantages, excellent resistance to heat, ozone and sunlight, very good flexibility at low temperature, good resistance to alkalis, acids, and oxygenated solvents and superior resistance to water and steam. Limitations, poor resistance to oil, gasoline, and hydrocarbon based solvents. Maximum continuous operating temperature 300°F.

Nitrile and Nitrile-HTP: Advantages, very good resistance to petroleum based greases/oils, silicone greases/oils and nonoxidizing chemicals. Good resistance hydrocarbon based fuels. Limitations, inferior resistance to ozone and oxygenated solvents. Maximum continuous operating temperature 275°F for NBR and 325°F for HNBR.



FEATURES

- Heavy-duty frame (yoke) designed to accept top removal stem nut, bevel gear or cylinder actuator without welding.
- Detachable pin removes potential energy from actuator lock-out pin prevents unwanted blind movement.
- The standard 316 stainless steel blank is completely withdrawn from the process flow in the open position and can be inspected or replaced without taking the line blind out of service.
- Patented, field replaceable elastomer sleeves.
- Unobstructed flow area, fully lined with elastomer sleeves, no metal to metal contact, no guides or wedges.
- Double sleeved design provides a "blind flange" shut-off when the blank is closed. Tight fit between sleeves contains internal pressure.
- No need for flange gaskets.
- Universal cast ductile full-flanged body housing to suit ASME B16.5/150, PN10 or PN16 as required.
- Body slots provide visual indication of blank position. Open bottom prevents build-up, allowing blank to fully close.
- Lockwashers used on all bolting.

BODY SLOTS CONFIRM BLANK POSITION

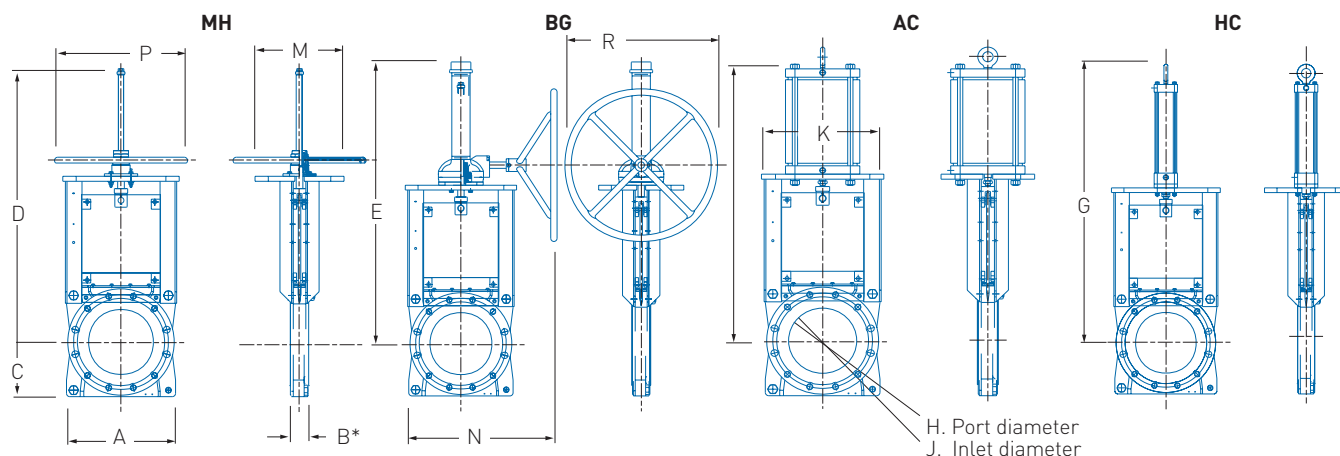
The KLB features multiple body slots that serve two purposes, visual confirmation of the blank position and as an egress point for the media. These egress points assure there is absolutely no opportunity for downstream leakage, providing a man-safe environment.



SPECIFICATIONS

Wafer style, linear line blind shall be, packingless, rubber-lined, bi-directional assembly suitable for a wide range of industrial blanking applications. The full port design shall have no internal obstructions and will provide a man-safe shut-off when the blank is closed. The line blind's sealing surface is to be between two rubber sleeves that are compressed into the ductile iron body housings. The sleeve will be molded with an integral stiffener ring that locates the sleeve in the housing and helps the sleeves resist the high shearing forces present when the blank is driven between them. The stainless steel blank shall be completely withdrawn from the process flow when in the open position, and can be inspected and replaced, if necessary, without taking the line blind out of service. The body housing to be full flanged, universal type, standard drilled and tapped to suit ASME B16.5/150 with optional PN10 or PN16 or others as required. The body housing shall have slots or openings to provide visual indication of the blank's position and allow any media to escape to atmosphere instead of downstream. The line blind is equipped with a heavy steel fabricated handwheel frame (yoke) which can be converted to bevel gear or cylinder operator in the field, complete with a 304 stainless steel rising stem and a dual-function lockout assembly that will isolate the blank from the potential energy of the actuator and prevent unwanted movement of the blank. All nonferrous exterior surfaces shall be painted to factory standard. Specify Clarkson KLB wafer style linear line blind from Emerson Valves & Controls.

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DIMENSIONS (inches)

Valve size NPS	A	B1*	B2*	C	D	E	F	G	H	J	K	M	N	P	R
3	8.00	2.44	2.25	4.88	22.35	24.09	24.70	25.20	2.81	3.00	8.75	6.39	15.75	12.00	12.00
4	9.60	2.44	2.25	4.69	24.45	25.16	26.27	27.27	3.81	4.00	10.50	6.91	16.63	12.00	12.00
6	11.00	2.68	2.50	5.75	29.45	33.02	31.63	32.51	5.80	6.00	12.63	9.13	17.68	16.00	12.00
8	13.50	3.19	3.00	7.03	34.94	36.39	37.00	37.88	7.73	8.00	14.75	10.31	18.75	20.00	12.00
10	16.40	3.25	3.00	8.23	41.07	44.30	43.91	44.79	9.74	10.00	17.50	13.38	23.87	20.00	24.00
12	19.00	3.50	3.25	9.75	-	47.52	50.13	50.76	11.73	12.00	20.38	13.45	29.06	-	24.00
14	21.00	3.50	3.25	10.77	-	52.79	53.90	54.03	12.96	13.25	22.55	14.75	30.15	-	24.00
16	23.75	4.00	3.75	11.88	-	56.53	59.07	59.20	15.00	15.25	24.47	14.75	31.11	-	24.00
18	25.50	4.06	3.76	12.13	-	66.17	68.05	68.42	17.00	17.25	26.32	17.00	30.26	-	24.00
20	28.00	5.13	4.76	14.50	-	71.79	73.97	74.10	19.03	19.25	28.06	18.88	31.13	-	24.00
24	33.00	5.19	4.76	16.50	-	85.13	87.25	88.00	23.21	23.45	35.00	18.88	34.60	-	24.00

Universal body housing drilled and tapped to match ASME B16.5/150 flanges as standard. PN10 or PN16 drilling is optional.

B1= minimum dimension required for installation.

B2 = installed face-to-face.

WEIGHTS (lbs)

Size NPS	Manual	AC	HC
2	43	62	52
3	55	84	68
4	75	93	86
6	89	144	96
8	42	190	145
10	196	325	225
12	373	493	316
14	438	655	377
16	525	736	535
18	569	840	634
20	730	1163	751
24	1050	1613	1150