



A Unit of Robbins & Myers, Inc.



HAMER[®]
LINE BLIND VALVES

Line Blinding: An Introduction

Line blinding is the use of a solid flat plate to obtain absolute shutoff of flow. Whether used with liquids, solids, slurries, or gases the line blinding method is unmatched in shutoff integrity.

As is the case with most successful products, the Hamer Line Blind Valve was designed to meet a specific need. With the Line Blind Valve, the need was for a system with positive, absolute shutoff in pipelines which could be dependably operated by one person.

Since its introduction in the mid-thirties, the Hamer Line Blind Valve has undergone a number of engineered improvements to meet a variety of applications.

- **Petroleum applications —**
Production and Refining
Pipeline
Gas gathering (including sour gas service)
CO₂/Well Injection
- **Processing applications —**
Chemical
Synthetic
Rubber
Food and Beverage
Pulp and Paper
- **Slurry applications —**
Cement Plants
Mining
- **Marine applications—**
Aboard ships and tankers
Terminals and storage

In each application the Hamer Line Blind Valve has distinguished itself as the industry leader in absolute positive flow shutoff.



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Why Line Blinding?

Typical circumstances requiring absolute shutoff include:

- Protection of the health and safety of personnel
- Avoidance of product contamination
- Control of products flowing through manifolds or common pipelines

It is well recognized that many conventional types of valves may develop leaks. Causes of leaks include age, misuse, erosion and distortion. These valves cannot be guaranteed to provide absolute shutoff in the line. Therefore, it is necessary to close off or blind the pipeline by other means.

Line Blinding Methods

In many service conditions, the usual practice has been to blind pipelines by means of a skillet plate and gaskets inserted between two flanges. Other common methods have included: blanking flanges and removable spool, block and bleed arrangements and standard valves.

Expense factors which are unavoidable in most blinding methods include the time required for the blinding process, delay while the line is shut down, loss of product caused by spillage and the hazards of fire, explosion and pollution should any downstream leakage occur.



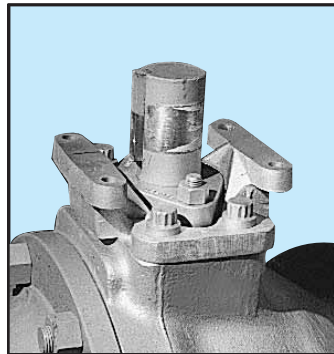
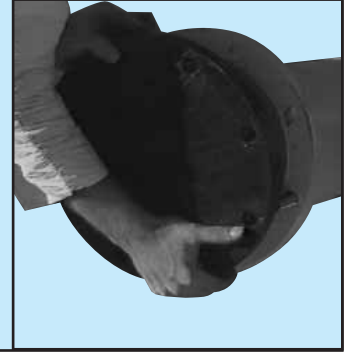
Positive Line Blind Valves

- Positive
- Safe
- Fast
- Visible indication of position
- Minimum downtime



Blanking Flanges and Spools

- Labor intensive
- Time consuming
- Cumbersome
- Heavy



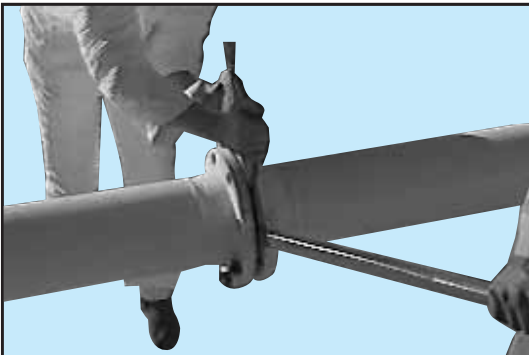
Standard Valve

- No intrinsic assurance of absolute shutoff
- Can leak downstream
- Not cost effective



Double Block and Bleed

- Expensive
- No intrinsic assurance of absolute shutoff if bleed valve is plugged
- Can leak downstream



Solid Plate Between Flanges

- Labor intensive
- Time consuming
- Safety can be compromised



Why Use Hamer Line Blind Valves?

Where blinding is a frequent requirement and safety is of primary concern, Hamer Line Blind Valves are essential.

- **Positive, permanent shutoff**
When the blank end of the spectacle plate is clamped in position, product cannot leak to the downstream side of the line.
- **Visible shutoff**
The reverse end of the spectacle plate is visible outside the valve body, providing a positive visual indication of its open or closed position.
- **Fast, one person operation**
Only one person is needed to operate most Hamer Line Blind Valves. Blinding takes only a few minutes with an operating bar and substantially reduces operating time and cost. Other methods generally take two to four pipefitters (depending on pipe size) 30 to 45 minutes for blinding a line.
- **Complete range**
The widest range of line blind valves is available for varied applications and includes models with enclosed spectacle plate chambers to prevent spillage in case the line was not totally drained when the spectacle plate is reversed.
- **Long service life**
Experience proves it. Hamer Line Blind Valves provide long, trouble-free service.

R&M Energy Systems offers you benefits based on the longest experience in the design and manufacture of Line Blind Valves. Product improvement and development is ongoing to meet the changing needs of the industry as well as special requirements.

Blinding Technique:	Protection		Economy				Comments:
	Completely leak-free	Absolute shutoff	Constant visible proof of closed/open position	Five minutes or less to operate (typical)	Requires only one person to operate	Special tools required	
Hamer Line Blind Valves	Yes	Yes	Yes	Yes	Yes	No	See Selection Chart Below
Blank Flanges and Spools	Yes	Yes	Marginal	No	No	Yes	Same time and labor problems as solid plate, compounded by size and weight of spool
Standard Valves	No	No	No	Yes	Yes	No	Nature of valve design does not give complete assurance of absolute seal, nor provide fail-proof visible indication of closed/open position.
Double Block and Bleed	No	No	Marginal	Marginal	Yes	No	Expensive. Obstructed bleed valve can give false indication of shutoff.
Solid Plate between Flanges	Yes	Yes	Marginal	No	No	Yes	Operation typically requires at least three pipefitters 5 to 6 times as long as line blind valves.

Line Blind Valve Selection Chart

Product Group	Valve Type	Size Range (in.)	Comments
Line spread, fluid loss	(BW) 3, 5 & 7 Bolt	1 to 36	Most economical means of blinding fast, where minimum fluid spill is acceptable.
Non spread, fluid loss	(SG) Sliding Gate	2 to 20	Fast pneumatic operation is standard. Can be remotely controlled.
Non spread, non spill	(VW) Visible Wedge	2 to 14	Use in rigid lines. Wedge-type spectacle plate assembly allows rapid changeover.



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Materials and Specifications

Standard Material Specifications

Valve type:	Components:	Materials:	Conforms to:
BW 3,5 & 7 Bolt	Body Casting/Forging Spectacle Plate Bolting Sealing	Carbon Steel Cadmium Plated Carbon Steel Carbon Steel Nitrile	ASTM A216-WCC/ASTM A105 ASTM A516-70/ASTM A514-B AISI 1040-45/AISI 4140-45
SG Sliding Gate	Body Gate Sealing	Carbon Steel Molybdenum Coated Carbon Steel Nitrile/Bronze	ASTM A516-70/ASTM A36/ASTM A105 ASTM A516-70
VW Visible Wedge	Body Casting Wedges Sealing Rings	Carbon Steel Carbon Steel Nitrile	ASTM A216-WCC ASTM A216-WCC

Other materials specifications supplied on request FOR CORROSIVE SERVICE.
R&M Energy Systems offers line blind valves in stainless steels, special alloys or surface treatments.

Packing Materials

Caution: Please note that line blind valves used in applications above 100°F will be derated in working pressure. See table below.

Standard Packing	Nitrile (BW, SG & VW)	Recommended for temperatures to 225°F (107°C)
Special Packing	Viton (BW, SG, VW, 3F & LFS) Teflon (BW, SG, VW, 3F & LFS) Teflon Encapsulated Viton (VW) Spiral Wound 316 SS & Grafoil (BW Only)	Temperature Range -10°F to 300°F (-23°C to 149°C) Temperature Range -30°F to 400°F (-34°C to 204°C) Temperature Range -30°F to 400°F (-34°C to 204°C) For high temperature applications to 800°F (427°C)

Other packing materials available to suit special requirements.

Rating of Standard Class Valves: Flanged and Butt Weld Ends

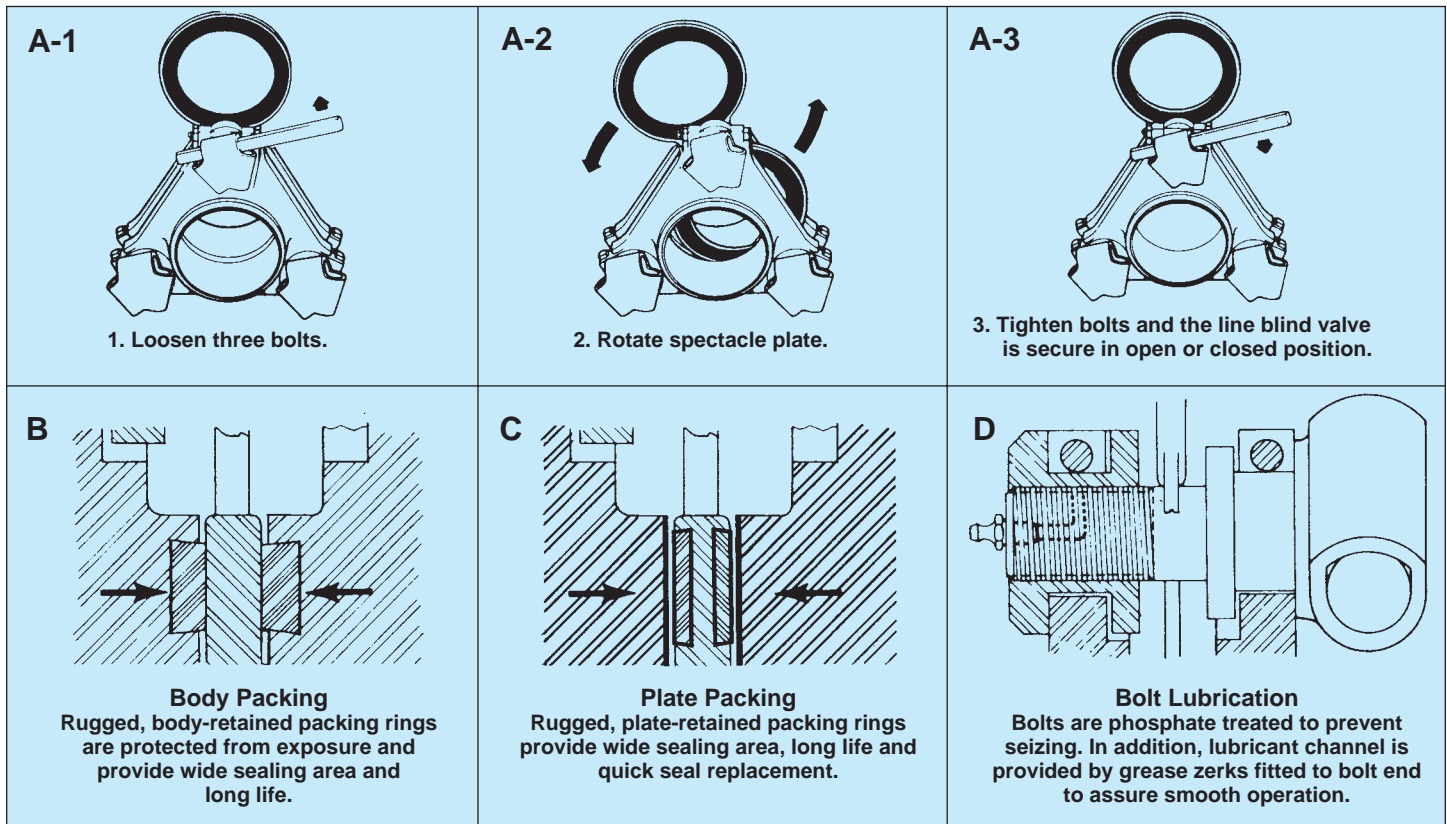
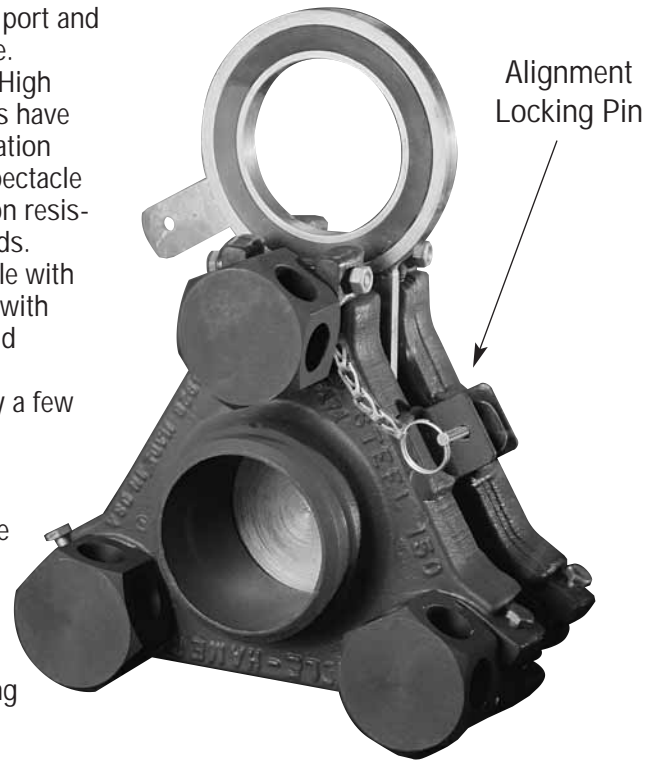
Temperature °F	Working Pressure in psig by ANSI Class					
	150	300	400	600	900	1500
-20 to 100	285	740	990	1480	2220	3705
200	260	675	900	1350	2025	3375
300	230	655	875	1315	1970	3280
400	200	635	845	1270	1900	3170
500	170	600	800	1200	1795	2995
600	140	550	730	1095	1640	2735
650	125	535	715	1075	1610	2685
700	110	535	710	1065	1600	2665
750	95	505	670	1010	1510	2520
800	80	410	550	825	1235	2060

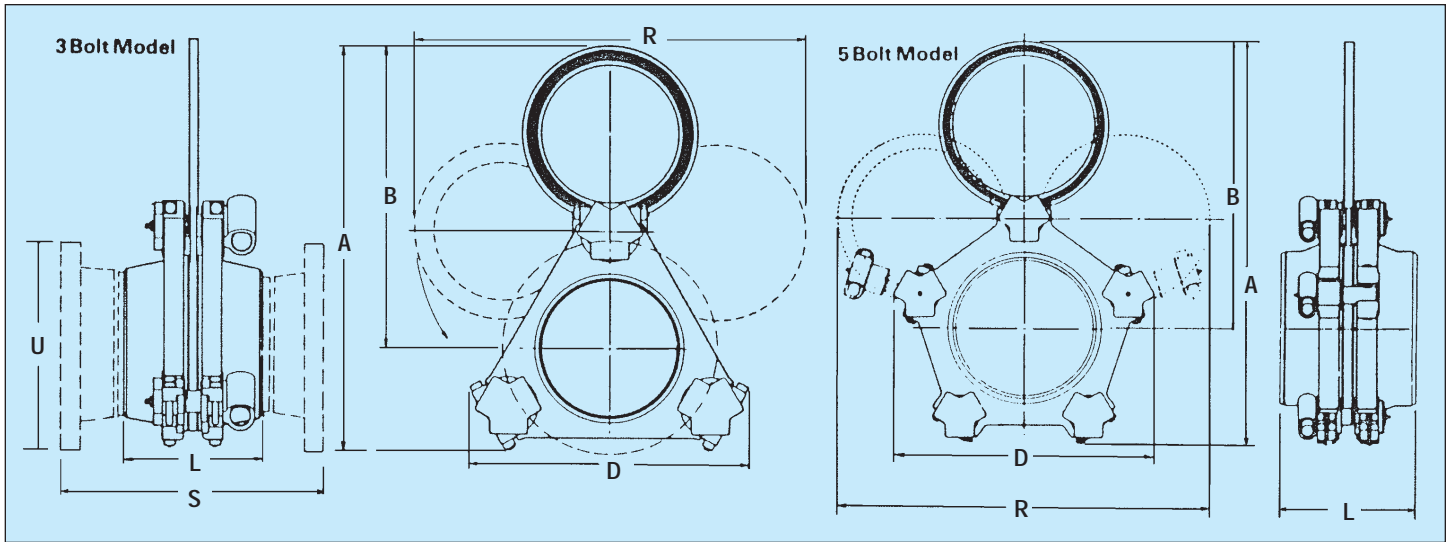
3, 5 and 7 Bolt (BW) Model Line Spread Type, Plate or Body Packed

This is the most commonly used type of line blind valve. The simple, rugged and practical design provides long service with minimum maintenance requirements. The number of bolts is determined by size and maximum working pressure.

- **Simple operation:** Spread the line with operating bolts using only a bar or pipe. Rotate spectacle plate and tighten again in seconds, without special tools. (See A below).
- **Compact design:** Unique bolt head design allows installation and operation in limited space.
- **Positive position indication:** Visible portion of spectacle plate clearly indicates if valve is open or closed.
- **Packing variation:** Wide range of packings are available to suit service requirements including spiral wound stainless steel for high temperatures. Body packing (See B below) is standard but spectacle plate packing is optional. (See C below).

- **Full flow:** Minimal turbulence occurs through full round port and pressure drop is negligible.
- **Minimum maintenance:** High quality alloy nuts and bolts have through bolt-to-nut lubrication feature (See D below). Spectacle plate is plated for corrosion resistance on carbon steel blinds.
- **End connections:** Available with butt weld or flanged ends with optional B16.10 end-to-end dimensions.
- **Time saving:** Operate only a few bolts, instead of loosening and tightening 4 to 12 bolts on a standard flange. Reversing the plate usually takes less than a minute.
- **Safety:** Absolute assurance of no downstream leakage. Alignment-locking pin is standard.





Dimensions - ANSI 150 Maximum Working Pressure 285 PSI

3 Bolt Model 3BW15											5 Bolt Model 5BW15			
Size ins.	2	2½	3	4	5	6	8	10	12	14	16	18	20	24
A	10 ⁷ / ₈	11 ¹ / ₈	12 ⁵ / ₈	15 ³ / ₈	17 ¹ / ₂	19 ⁵ / ₈	23 ¹ / ₂	29 ¹ / ₈	33 ¹ / ₈	36 ³ / ₄	40 ¹ / ₂	48 ¹ / ₂	52 ¹ / ₂	64
B	7 ³ / ₈	7 ⁷ / ₈	9	10 ⁷ / ₈	12 ¹ / ₂	14 ¹ / ₈	17 ¹ / ₂	22	25 ³ / ₈	27 ⁷ / ₈	29	34 ³ / ₈	37 ³ / ₄	44 ¹ / ₂
D	8 ¹ / ₂	8 ¹ / ₂	9 ¹ / ₂	12	13 ¹ / ₂	14 ¹ / ₄	16 ¹ / ₄	19 ³ / ₄	22 ¹ / ₄	25 ¹ / ₄	24 ¹ / ₄	31 ¹ / ₄	33	39
L	5	5 ¹ / ₂	5 ¹ / ₂	6	7	7	8	8	9 ¹ / ₈	10	12	17	18	20
R	9 ³ / ₈	10	11 ¹ / ₂	13 ³ / ₄	15 ⁷ / ₈	18	22 ⁵ / ₈	28 ¹ / ₂	32 ⁷ / ₈	35 ⁷ / ₈	37 ⁷ / ₈	44 ¹ / ₂	49 ¹ / ₈	60
S*	10 ¹ / ₄	11 ¹ / ₈	11 ¹ / ₈	12	14	14	16 ¹ / ₈	16 ¹ / ₈	18 ¹ / ₄	20 ¹ / ₈	22 ¹ / ₈	28 ¹ / ₈	29 ¹ / ₂	32
GVL*	7 ¹ / ₄ **	7 ¹ / ₂	8	9	10	10 ¹ / ₂	11 ¹ / ₂	13	14	15	16	17	18	20
U	6	7	7 ¹ / ₂	9	10	11	13 ¹ / ₂	16	19	21	25	25	27 ¹ / ₂	32
Weight lb.	21	27	30	43	60	75	100	185	240	330	430	816	896	1584

* S is our standard end to end lengths for flanged BW Model line blinds. Tolerance: +/-3/16". Specify: 'SP 209'.
 GVL(Gate Valve Length per ASME B16.10) is also available. Specify: 'SP 195'.
 Special end-to-end dimensions are available upon request.

** Nonstandard GVL

Dimensions - ANSI 300 Maximum Working Pressure 740 PSI

3 Bolt Model 3BW30													
Size ins.	½	¾	1	1½	2	2½	3	4	6	8	10	12	14
A	7 ¹ / ₂	7 ¹ / ₂	7 ¹ / ₂	8 ¹ / ₄	11 ³ / ₄	12	14 ¹ / ₈	15 ⁷ / ₈	20 ¹ / ₈	24 ¹ / ₄	31	36 ⁵ / ₈	38
B	4 ³ / ₄	4 ³ / ₄	4 ³ / ₄	5 ³ / ₈	7 ³ / ₄	8 ¹ / ₄	9 ⁵ / ₈	11 ¹ / ₈	14 ¹ / ₄	17 ³ / ₄	23	27 ¹ / ₈	28 ³ / ₈
D	6 ¹ / ₂	6 ¹ / ₂	6 ¹ / ₂	7 ¹ / ₄	9 ¹ / ₂	10	11 ¹ / ₂	12 ¹ / ₂	15 ¹ / ₂	17 ³ / ₈	22 ¹ / ₂	26	26 ¹ / ₂
L	4 ³ / ₄	4 ³ / ₄	4 ³ / ₄	5 ³ / ₈	5 ¹ / ₂	6	6 ¹ / ₄	6 ³ / ₄	7 ⁵ / ₈	9	11 ⁷ / ₈	14 ³ / ₈	15
R	5 ⁷ / ₈	5 ⁷ / ₈	5 ⁷ / ₈	6 ³ / ₄	9 ³ / ₄	10 ³ / ₈	12 ¹ / ₈	14	18 ¹ / ₈	22 ⁷ / ₈	29 ³ / ₈	34 ⁵ / ₈	36 ³ / ₈
S*	9	9 ³ / ₈	9 ⁷ / ₈	10 ⁷ / ₈	11 ¹ / ₈	12 ¹ / ₈	12 ¹ / ₂	13 ⁵ / ₈	15 ¹ / ₂	17 ⁷ / ₈	21 ¹ / ₈	24 ⁷ / ₈	26 ³ / ₈
GVL*	7 ¹ / ₂ **	7 ¹ / ₂ **	7 ¹ / ₂ **	8	8 ¹ / ₂	9 ¹ / ₂	11 ¹ / ₈	12	15 ⁷ / ₈	16 ¹ / ₂	18	19 ³ / ₄	30
U	3 ³ / ₄	4 ⁵ / ₈	4 ⁷ / ₈	6 ¹ / ₈	6 ¹ / ₂	7 ¹ / ₂	8 ¹ / ₄	10	12 ¹ / ₂	15	17 ¹ / ₂	20 ¹ / ₂	23
Weight lb.	3	3	3	15	30	40	50	54	110	146	300	420	465

* S is our standard end to end lengths for flanged BW Model line blinds. Tolerance: +/-3/16". Specify: 'SP 209'.
 GVL(Gate Valve Length per ASME B16.10) is also available. Specify: 'SP 195'.
 Special end-to-end dimensions are available upon request.

** Nonstandard GVL



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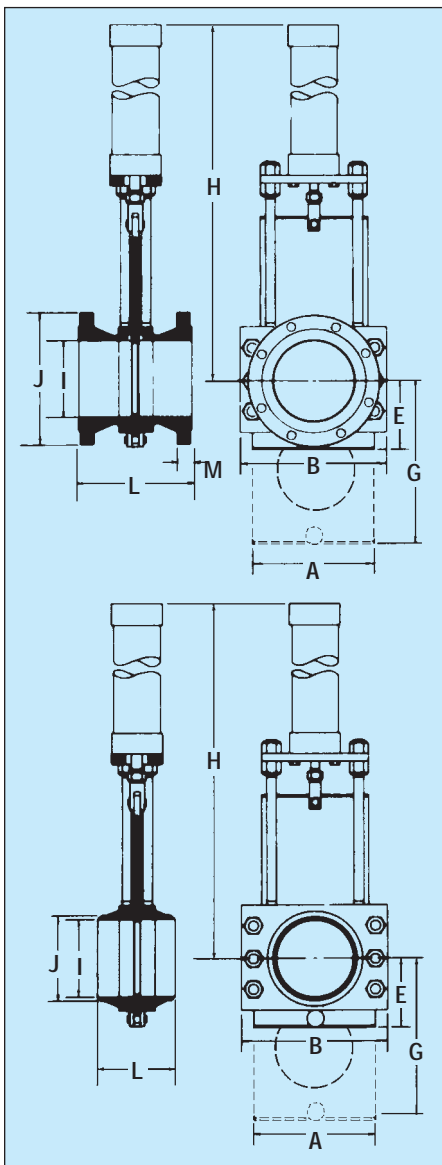
Sliding Gate Model Non-spread (Rigid) Type

Especially suited to applications requiring power actuation. Hand-wheel models also available. Used with a wide variety of products, from dry cement to highly viscous fluids.

Sliding Gate Line Blind Valves Model SG15 ANSI 150 Flanged and Butt Weld (2" - 16")

• **Easy operation:** Powered by air, electric, hydraulic actuator or handwheel, for local or remote control.

- **Self cleaning:** Gate is automatically wiped clean on each cycle.
- **Positive seal:** Resilient seat rings are self-energized for a tight seal in either high or low pressure service.
- **Versatile:** Suitable for gas, liquid or dry service. Full bore flow with no cavities to trap medium. Handles slurries with ease.
- **Simple, rugged construction:** All parts of gate and seats can be replaced without removing valve from line.
- **Gate coating:** Standard coating provides permanent lubricity to minimize wear. Special coatings available upon request.
- **Remote indication:** Limit switches, solenoid valves, or other accessories to customer specification.



Dimensions - ANSI 150

Air Cylinder Operated		Flanged Ends and Weld Ends Size								
in	2	3	4	5	6	8	10	12	14	16
A	4 ¹ / ₂	5 ¹ / ₂	6	7	7 ³ / ₁₆	10 ¹³ / ₁₆	13 ³ / ₁₆	15 ³ / ₈	16 ⁵ / ₈	18 ⁵ / ₈
B	6 ¹³ / ₁₆	8 ⁹ / ₁₆	9 ¹ / ₁₆	10 ⁵ / ₁₆	11 ¹ / ₈	14 ⁷ / ₈	17 ⁵ / ₁₆	19 ⁷ / ₁₆	20 ³ / ₄	22 ³ / ₄
E	3 ¹ / ₈	3 ⁷ / ₈	4 ¹ / ₄	5 ¹ / ₄	5 ³ / ₄	6 ⁷ / ₈	8 ¹ / ₈	9 ¹¹ / ₁₆	10 ³ / ₄	11 ³ / ₄
G	6 ⁷ / ₁₆	8 ³ / ₈	9 ³ / ₄	12 ¹ / ₁₆	13 ⁵ / ₁₆	16 ⁵ / ₈	20 ³ / ₈	24 ¹ / ₁₆	26 ¹ / ₂	29 ¹ / ₄
H	18 ¹³ / ₁₆	21 ⁷ / ₈	24 ⁷ / ₁₆	28 ⁵ / ₈	30 ³ / ₄	36 ¹ / ₂	43 ³ / ₈	52 ¹⁵ / ₁₆	54 ³ / ₁₆	60 ⁷ / ₈
I	2 ¹ / ₁₆	3 ¹ / ₁₆	4 ¹ / ₃₂	5 ¹ / ₁₆	6	8	10	12	13 ¹ / ₄	15 ¹ / ₄

Air Cylinder Operated		Flanged Ends								
J	6	7 ¹ / ₂	9	10	11	13 ¹ / ₂	16	19	21	23 ¹ / ₂
L	7	8	9	10	10 ¹ / ₂	11 ¹ / ₂	13	14	15	16
M	³ / ₄	1 ⁵ / ₁₆	1 ⁵ / ₁₆	1 ⁵ / ₁₆	1	1 ¹ / ₈	1 ³ / ₁₆	1 ¹ / ₄	1 ³ / ₈	1 ⁷ / ₁₆

Air Cylinder Operated		Weld Ends								
J	2 ³ / ₈	3 ¹ / ₂	4 ¹ / ₂	5 ⁹ / ₁₆	6 ⁵ / ₈	8 ⁵ / ₈	10 ³ / ₄	12 ³ / ₄	NA	NA
L	5	5 ¹ / ₂	6	7	7	8	8	9	NA	NA

Handwheel Operated		Dimensions same as above except H shown below.								
H	15 ⁷ / ₈	19 ⁵ / ₈	21 ⁵ / ₈	26 ³ / ₁₆	27 ³ / ₈	33 ⁷ / ₈	40 ³ / ₁₆	46 ¹ / ₈	50	53 ¹ / ₂

**Visible Wedge
Model Non-spread
(Rigid) Type**

**Model VW15; ANSI 150
flanged (2" - 14")
Model VW30; ANSI 300
flanged (2" - 12")**

- **Wedge action:** provides positive, absolute closure.
- **Full flow when open:** Open wedge provides unrestricted flow.
- **Easy operation:** Handwheel allows quick operation.

Wedge-shaped discs are used in this type of Line Blind Valve. Suitable applications include any horizontal piping installation where line spread is not possible, and where fluid loss is not acceptable. Since operation of this type of valve is by a handwheel, even larger size valves are opened and closed quickly and easily by one person, without tools.

Stainless steel seats and wedges available upon request.



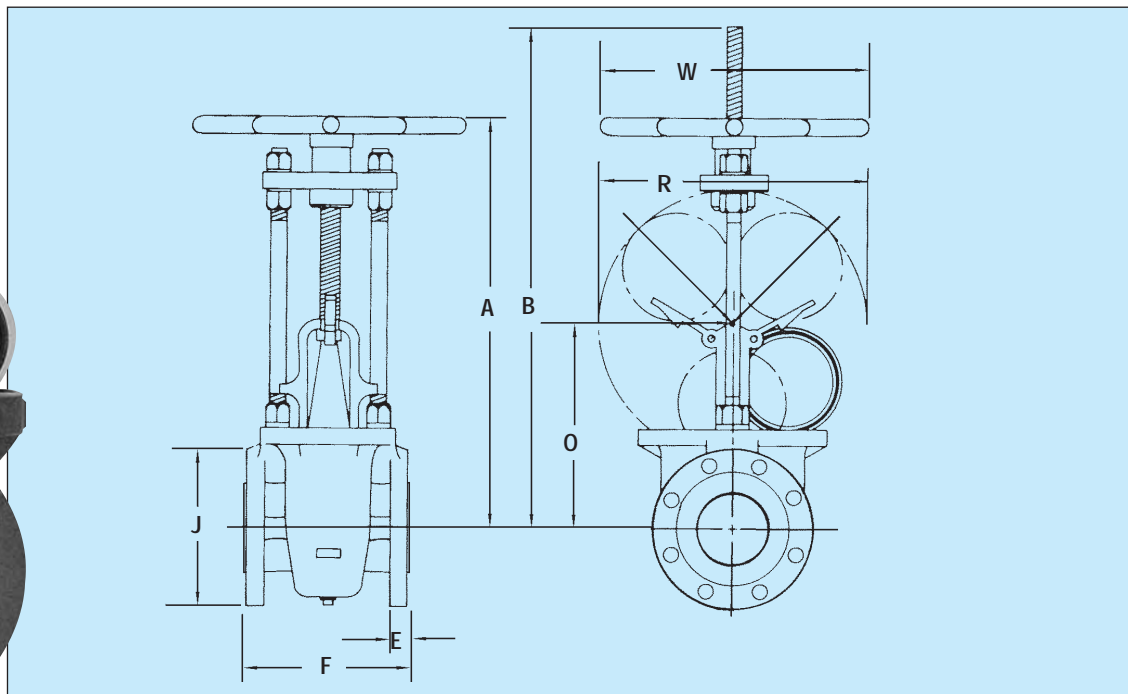
Dimensions - ANSI 150 Maximum Working Pressure 285 PSI

Model VW15		ANSI 150						
Size in.	2	3	4	6	8	10	12	14
A	20	24 ⁷ / ₈	29 ³ / ₄	36 ¹ / ₂	45 ¹ / ₄	48 ¹ / ₈	58 ¹ / ₂	64 ³ / ₈
B	18 ⁵ / ₈	23 ¹ / ₂	29 ³ / ₈	35 ³ / ₈	47 ³ / ₈	52 ³ / ₄	67	72 ³ / ₄
E	³ / ₄	1 ⁵ / ₁₆	1 ⁵ / ₁₆	1	1 ¹¹ / ₈	1 ³ / ₁₆	1 ¹ / ₄	1 ³ / ₈
F	7	8	9	10 ¹ / ₂	11 ¹ / ₂	13	14	15
J	6	7 ¹ / ₂	9	11	13 ¹ / ₂	16	19	21
O	6 ³ / ₈	8 ⁷ / ₈	11 ¹ / ₄	13	18	20 ³ / ₈	26 ³ / ₈	28 ³ / ₈
R	8 ¹ / ₂	11 ¹ / ₂	14 ³ / ₄	18	21 ⁷ / ₈	26 ¹ / ₄	30 ¹ / ₂	34 ¹ / ₂
W	7 ¹ / ₂	12	14	16	16	20	20	24
Weight lb.	47	78	134	197	305	494	620	785

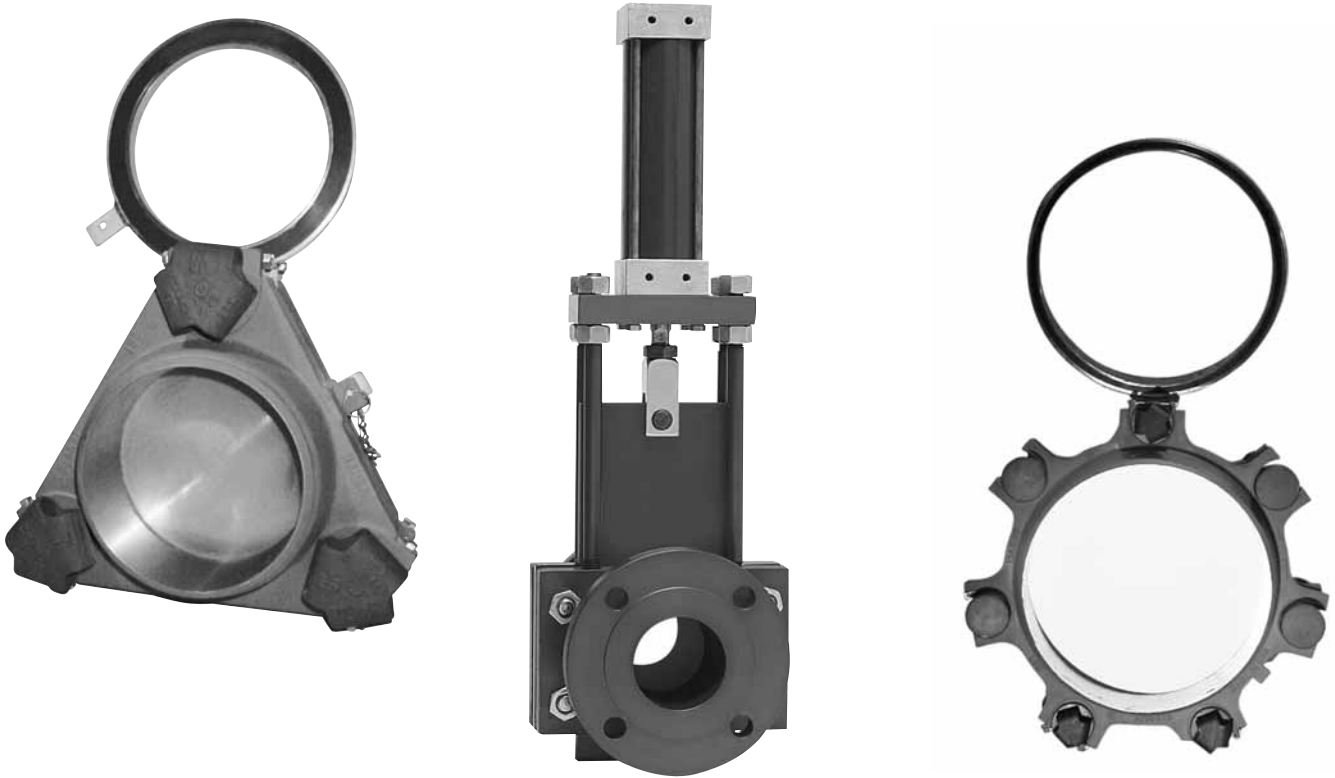
Other technical details available on request.

Dimensions - ANSI 300 Maximum Working Pressure 740 PSI

Model VW30		ANSI 300					
Size in.	2	3	4	6	8	10	12
A	14 ³ / ₄	18 ⁵ / ₁₆	22 ⁵ / ₁₆	27 ⁵ / ₁₆	34 ³ / ₄	38 ¹ / ₂	44 ⁹ / ₁₆
B	18 ⁵ / ₈	23 ¹ / ₄	28 ¹³ / ₁₆	34 ³ / ₄	46 ³ / ₈	51 ³ / ₈	60 ¹ / ₈
E	⁷ / ₈	1 ¹ / ₈	1 ¹ / ₄	1 ⁷ / ₁₆	1 ⁵ / ₈	1 ⁷ / ₈	2
F	8 ¹ / ₂	11 ¹ / ₈	12	15 ⁷ / ₈	16 ¹ / ₂	18	19 ³ / ₄
J	6 ¹ / ₂	8 ¹ / ₄	10	12 ¹ / ₂	15	17 ¹ / ₂	20 ¹ / ₂
O	6 ³ / ₈	8 ⁷ / ₈	11 ¹ / ₄	13	18	20 ³ / ₈	24 ¹ / ₈
R	8 ¹ / ₂	11 ¹ / ₂	14 ³ / ₄	18	21 ⁷ / ₈	26 ¹ / ₄	30 ¹ / ₂
W	7 ¹ / ₂	12 ³ / ₄	12 ³ / ₄	16	16	20	20
Weight lb.	55	95	175	310	430	645	825



Valves For Special Applications



Cement Industry

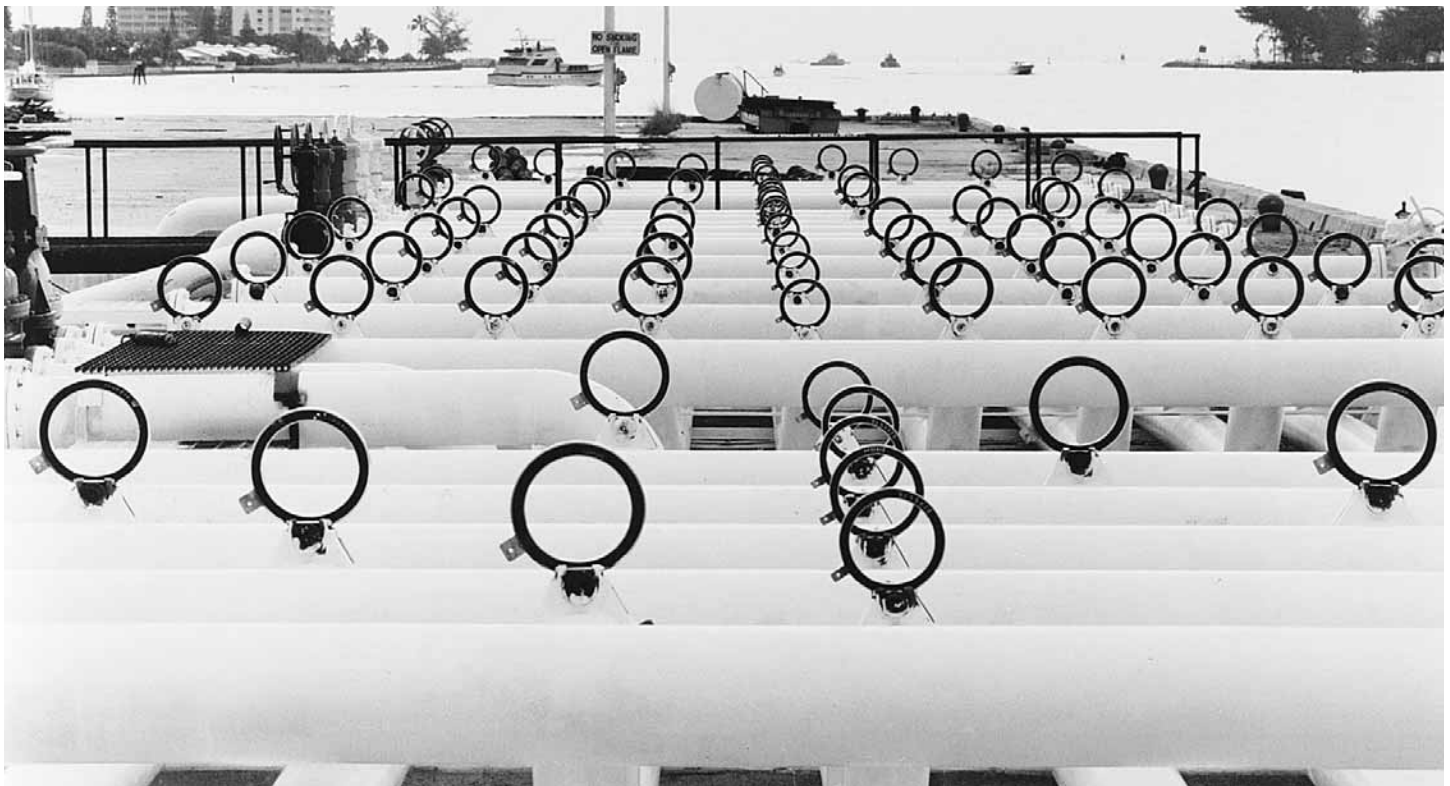
The picture to the left shows a typical manifold of 10" Hamer Sliding Gate Line Blind Valves. The manifold is located at the top of a silo and is used to effectively segregate different types of cement, thereby avoiding any possibility of product contamination. In this photo, the valves are shown in the closed position. They are operated pneumatically by plant air, usually between 60 and 80 psi. In order to ensure ease of operation in the abrasive environment of cement service, each gate is thoroughly molycoated.

Steel Industry

Hamer meets the need for safety with absolute shutoff of coke oven gas and blast furnace fuel lines with the specially designed 5-bolt Line Blind Valve. These valves are available in sizes 16" and larger, with larger sizes equipped with a counter balance for ease of operation.

Marine Industry

With Hamer Line Blind Valves, dependable product isolation on barges or tankers is assured. By using the Line Blind Valve, contamination due to an inadvertently open valve is virtually eliminated. Additionally, the absolute shutoff achieved by the Hamer Line Blind Valve protects both product and personnel from problems related to leakage. The visible wedge model is extremely well suited for applications in rigid piping aboard ships where spillage control is essential.



Quality



Policy

R&M Energy Systems is committed to understanding and fulfilling customer needs through the design, manufacture and delivery of high quality products.

R&M Energy Systems maintains a Quality Management System that is dedicated to continuous improvement through excellence in innovation and employee participation.

Employees are responsible for achieving the quality objectives established by R&M Energy Systems by providing products and services that consistently meet specified requirements.



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