

The unique design benefits of the M145 series of valve products, with the three-piece replaceable polymer liner, offer reliability and long life in a wide variety of tough applications

Designed for and proven in some of the most difficult applications, the M145 offers superior shut-off, flow and reliability compared to other knife gate valves. Additionally, it performs very well in many services not normally considered to be typical knife gate applications.

Features

- Proven design features a three-piece replaceable polymer liner.
- Superior shut-off, leak rate not to exceed 20 ml (20 cc) per inch of diameter per minute at 2.8 bar (40 psi), half of MSS.
- Every valve is leak tested in both directions.
- Can be installed without worry as to direction of flow.
- 100% Full port opening reduces pressure drop allowing greater flow and minimizing wear.
- T-Lock insert is firmly retained by the body liner, assuring maximum performance.
- Liner provides all-around gate support and prevents lateral movement of the gate, giving you longer packing life and a consistent valve seal.
- Positive seal packing chamber.
- Face-to-face per MSS-SP81.

Full range of operators and accessories are available

- Handwheel (standard)
- Bevel gear (recommended sizes DN 300 - 12" and above)
- Lock-Pin for open, closed or both
- Air/hydraulic/spring cylinders
- Electric motor operators
- Control accessories
- Extension stems, floorstands, stem guides



The M145 is like no other

As you can see, the M145 is not an ordinary knife gate valve. Offering you superior performance in flow, shut-off, flexibility both in design and installation, packing life, and overall maintenance, the M145 can truly be called a Universal Valve.

Technical data

Size range : DN 50 to 600 (2" to 24"),
10 bar (150 psi) CWP at
ambient temperature
Sizes above DN 600 (24")
designed to the application

Notes: Stated leak rates apply to standard polymer lined versions only.

M145 Replaceable Polymer Liner Knife Gate

DN 50 to 1500

Three-piece field replaceable liner assembly

The three-piece liner of the M145 Series acts as the valve seat, gate support and packing support, providing you with excellent performance. The close tolerance fit of the valve liner, along with the line pressure, is designed to deliver a tight shut-off. The liner also provides all-around gate support, resulting in longer packing life and a consistent valve seal.

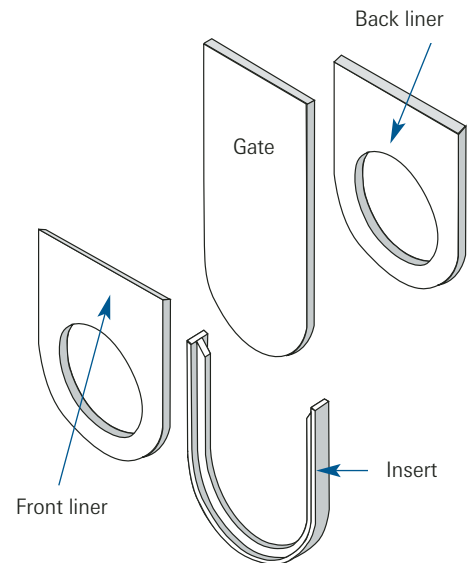
Each liner is precision cut, placed into the valve frame and bonded with a silicone compound to help ensure perfect alignment and a superior seal. Liners are also available in different materials to suit many applications.

UHMWPE - 82°C (180°F), Ultra-high-molecular-weight polyethylene (UHMWPE) has excellent chemical, abrasion and impact resistant properties with a good temperature range. It is widely used in the pulp and paper, textile, packaging and mining industries.

Polypropylene - 107°C (225°F), A thermoplastic polymer with good impact and fatigue properties. It is resistant to acids, alkalis and solvents.

PTFE (Teflon®) - 177°C (350°F), A polytetrafluoroethylene plastic with superior chemical resistant properties at elevated temperatures. It has excellent anti-stick properties, however it has a relatively poor resistance to wear and is not recommended for abrasive applications.

Other custom liners are available for special and unique applications. Contact your sales representative for additional information.



Available M145 Insert Styles

The M145 was designed for the demanding requirements found in many industrial applications. The standard M145 features a T-Lock Insert that retains the perimeter section of the liner to the outer sides. This helps ensure maximum liner and seat performance in heavy solids.

Also available is the ZP configuration, with a reinforced elastomer insert that acts as the insert section which is built to match the valve port ID, providing an uninterrupted, straight through flow that reduces turbulence. This helps deliver maximum liner and seat performance in heavy solids.

To further enhance performance of the M145, it can be provided with special fixed or replaceable retaining rings to give long life in abrasive applications:

- Tungsten Carbide Coated
- Hard surface overlay
- UHMWPE, and others

Special alloys and configurations

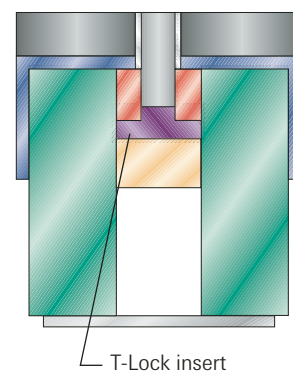
The L&M M145 can be provided with high grade alloy gates and rings such as titanium, Hastelloy®, Alloy 20, etc. for aggressive applications. Combine this with a Teflon® liner and you have a very effective high performance knife gate valve.

The M145 can also be built in square or rectangular designs specific to your dimensions and applications.

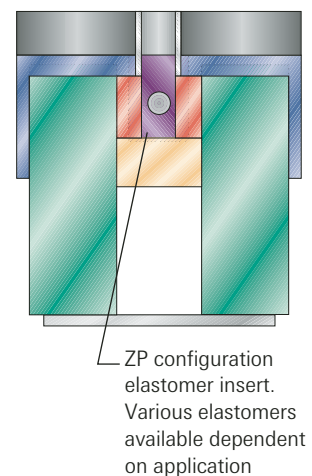
Notes

1. Hastelloy® is a registered trademark of Haynes International
2. Teflon® is a registered trademark of E.I. du Pont de Nemours Company; always initial cap and registered.

Standard T-Lock seat design

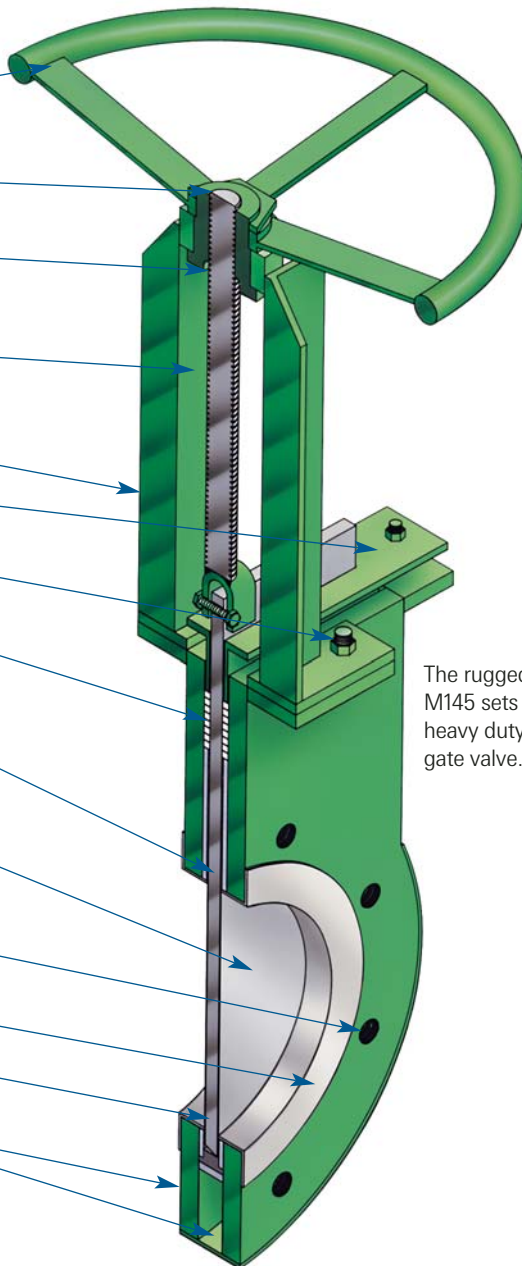


Optional ZP Zero Pocket design



Features

- Cast ductile iron handwheel (bevel gear recommended for DN 300 - 12" and larger)
- Self-locking handwheel retaining nut
- Acid-resistant bronze stem nut smooth operation
- Heavy cross-section 304 stainless steel stem, single-lead Acme threads for ease of operation
- Heavy fabricated yoke
- Heavy reinforced packing gland
- Locknuts used on all bolting
- Multiple rows of packing
- Three-piece field replaceable polymer liner, available in UHMWPE, Teflon® and Polypropylene, supports gate on all sides
- Gate finished ground on both sides for superior bi-directional shut-off and minimum rim-pul
- Flanges drilled and tapped to ANSI B16.5/150 or DIN
- Stainless steel retaining rings/raised face
- Full port flow area through DN 600 (24")
- Fabricated steel body provides superior strength



The rugged construction of the M145 sets the standard for a true, heavy duty, high performance knife gate valve.

Bonneted body style

For critical applications, the M145 is available in a bonneted configuration. Contact your sales representative about the M141.

Specification

Bonnetless, Universal Knife Gate valve, 10 bar (150 psi) design for 10 bar (150 psi) CWP, wafer type with face-to-face dimension per MSS-SP81 with BI-DIRECTIONAL shut-off up to the full rate pressure of 10 bar (150 psi) CWP. Valve shall have a maximum leakage rate of no more than 20 ml (20 cc) per inch of diameter per minute at 2.8 bar (40 psi) in both directions without the use of O-rings, guides or wedges obstructing the port. The liner shall be made from a polymer material suitable for the application and field replaceable. Typically made from three separate pieces; the front, back and T-Lock insert, the liner shall completely line the interior of the valve body, totally supporting the gate. The liner insert is to be 'T' shaped to accommodate the front and back liner pieces, preventing insert pullout in severe applications. To prevent atmospheric leakage, the valve features an adjustable packing assembly consisting of multiple layers of braided packing around gate, evenly compressed by a one-piece packing gland. The valve to have 100% FULL PORT FLOW AREA with no guides or wedges obstructing the port. The gate shall be finished ground on both sides made from stainless steel (or as required for application). The body material shall be cast ductile iron, fabricated carbon steel or 316 SS depending on application needs, drilled and tapped to ANSI B16.5/150. Valve is equipped with a manual handwheel operator assembly featuring a cast ductile iron handwheel, a heavy duty foot mounted yoke with an acid resistant bronze stem nut, including a 304 stainless steel rising stem. Specify the L&M Valve Model M145 from Tyco Valves & Controls.

M145 Replaceable Polymer Liner Knife Gate

DN 50 to 1500

Applications

Designed to provide superior performance in a wide variety of industries and applications:

Pulp & paper

- Green liquor
- Switching valves
- Mud slurry
- Water isolation
- Weak wash
- Brown stock
- Machine isolation
- Starch isolation
- White water
- White liquor
- Black liquor
- Mud stock (1%-10%)
- Lime mud
- Pump/screen isolation

Mining

- Cyclone system
- Ore dredging
- Soda ash
- Pump isolation
- Hopper loading
- Coarse feed stock
- Ball mill crusher
- Rock slurry
- Tailing lines
- Fine feed
- Thickener

Power

- Limestone slurry
- Coal transfer
- Slurry tank
- Settling pond
- Fly ash
- Ash sluice
- Bottom ash

Wastewater

- Grit chamber
- Filter press
- Pump isolation
- Sludge systems
- Tank isolation

Chemical

- Chromic flake
- Acidic water
- Brine
- Chip transfer
- Vacuum reactors

Food & beverage

- Grain hand
- Cereal process
- Potato cooker
- Beer vats
- Sugar pan
- Brew tank isolation

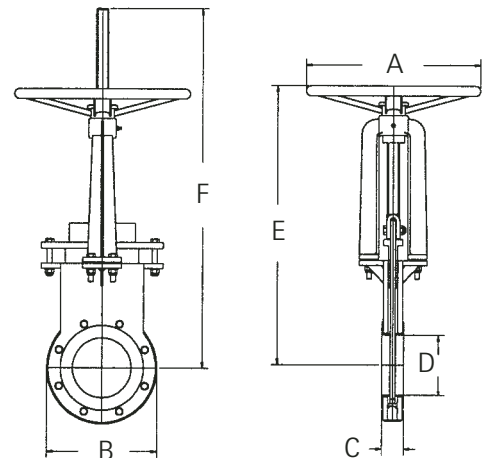
Powder & bulk

- Lime
- Sand/gravel
- Zeolite
- Plastic pellets

The above information represents previously successful installations for the L&M M145, however, your application may be different. Please contact Tyco Valves & Controls for application recommendations.

Dimensions (in.) and Weight (lbs.)

Valve size	A	B	C	D	E	F	Weight
2	12	7 3/4	2	2	20 1/8	23	48
3	12	7 1/2	2	3	20 1/8	23	48
4	12	9	2	4	21 7/8	26	58
5	16	10 1/4	2 1/4	5	26 5/8	31 3/8	86
6	16	11	2 1/4	6	28 1/8	33 7/8	88
8	16	13 1/2	2 3/4	8	32 1/8	40	140
10	16	16	2 3/4	10	34 1/2	45 1/4	199
12	24	19 1/4	3	12	41 5/8	53 3/8	317
14	24	21 1/4	3	14	45 1/2	59	420
16	24	23 3/4	3 1/2	16	51	66 7/8	545
18	24	25 1/4	3 1/2	18	57 1/4	74 5/8	670
20	24	27 3/4	4 1/2	20	61	80 1/4	930
24	24	32 1/4	4 1/2	24	69 3/4	93 3/8	1175



Dimensions (mm) and Weight (kgs.)

Valve size	A	B	C	D	E	F	Weight
50	305	196.9	50.8	50.8	511.2	584.2	21.8
80	305	215.9	50.8	76.2	511.2	584.2	21.8
100	305	228.6	50.8	101.6	555.6	660.4	26.3
125	406	260.4	57.2	127.0	676.3	796.9	39.0
150	406	279.4	57.2	152.4	714.4	860.4	39.9
200	406	342.9	69.9	203.2	816.0	1016.0	63.5
250	406	406.4	69.9	254.0	876.3	1149.4	90.3
300	610	489.0	76.2	304.8	1057.3	1355.7	143.8
350	610	539.8	76.2	355.6	1155.7	1498.6	190.5
400	610	603.3	88.9	406.4	1295.4	1698.6	247.2
450	610	641.4	88.9	457.2	1454.2	1895.5	303.9
500	610	704.9	114.3	508.0	1549.4	2038.4	421.8
600	610	819.2	114.3	609.6	1771.7	2371.7	533.0

Dimensions are not certified and weights are estimates. Contact your sales representative for complete details.