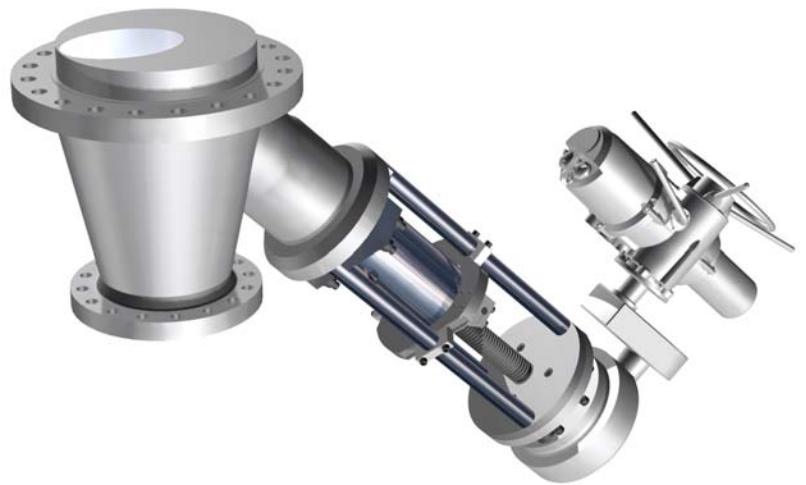


VP Series

VESSEL & REACTOR VALVES

METAL & DUAL SEATED PISTON VALVES



 *Strahman*

PROCESS VALVES

HIGH PERFORMANCE PISTON VALVES

Dual Seal Piston Valve

Code: **VP4D-VP6D**

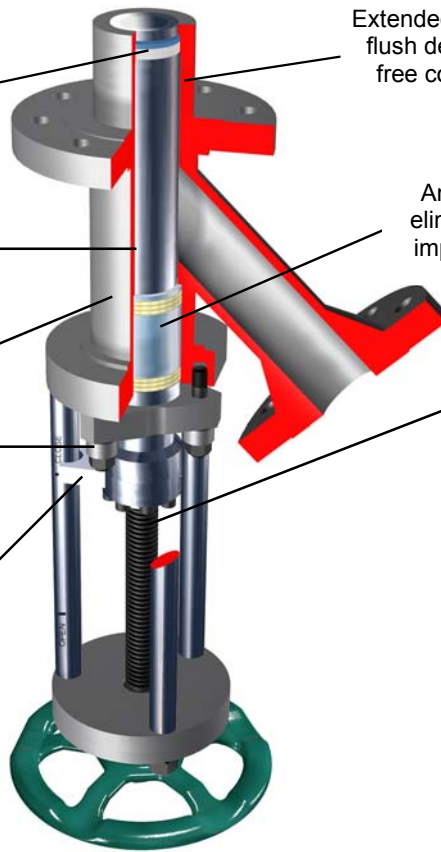
High sealing performance of **Dual Seal** specially recommended for medium pressure and temperature processes as well as vacuum conditions

Purge connections can be added to flush the valve and to clean downstream

Optional heat jacketing

Live loaded packing is standard

Mechanical position indicator



Extended body design provides a flush design and a dead space free connection to the vessel

An extended stuffing box eliminates dead space and improves piston alignment

Large valves utilize a non-rising stem to minimize overall length

Fig. 026

Code: **VP4D-VP6D**

M Seal Piston Valve

High sealing performance of **M Seal** is recommended for high pressure and temperature processes

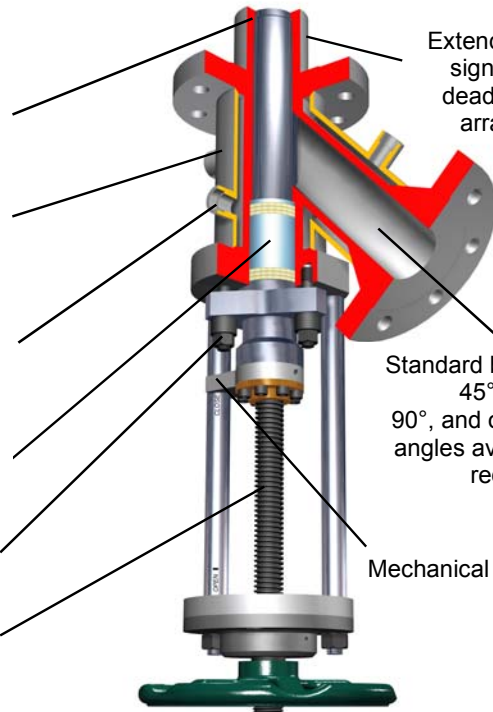
Optional heat jacketing

Jacket connections (oil or steam can be customized to the actual valve position)

An extended stuffing box eliminates dead space and improves piston alignment

Live loaded packing is standard

Large valves utilize a non-rising stem to minimize overall length



Extended body design for a flush dead space free arrangement

Standard branch angle: 45° & 60° 90°, and other specific angles available upon request

Mechanical position indicator

Strahman **M Seal & Dual Seal** designs are dead space free reactor outlet valves. When opening, the piston retracts completely into the valve body providing an unrestricted full flow. In combination with our maximized port sizes, this design offers maximum flow capacity. **M Seal** is specially designed for high pressure and temperature applications such as polymer processes. For mid-range pressure and temperature applications with slurries or high viscosity products **Dual Seal** offers the unique double sealing reliability.

Strahman valves are available in a choice of options including material of construction, actuators and customized or standard connections to piping. Other specific features are full jacketing, vacuum package and dead space free connections to vessels.

Typical applications include the draining of viscous products especially in combination with low pressure and/or vacuum processes.

BODY ARRANGEMENTS

Strahman **M Seal, M Ring Seal, M Control and Dual Seal** Piston valves use the following designs:

- Figure **023** or **030** are for small sizes or high pressure applications. Valves have a rising stem design.
- Figure **026** or **035** are for large sizes. Valves have non-rising stems to minimize overall dimensions.

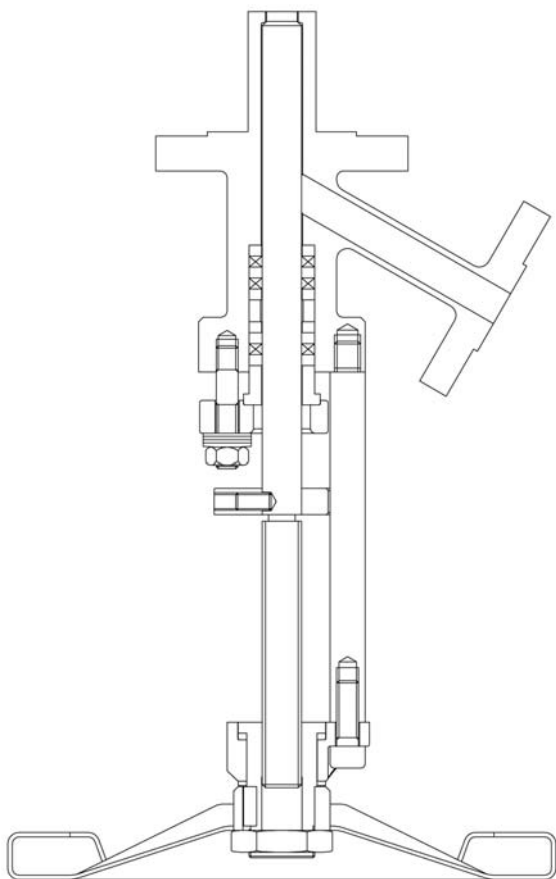


Fig. 023 & 030

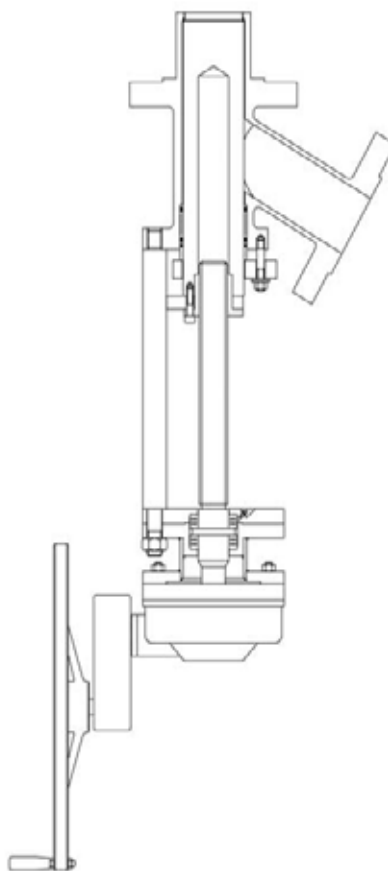
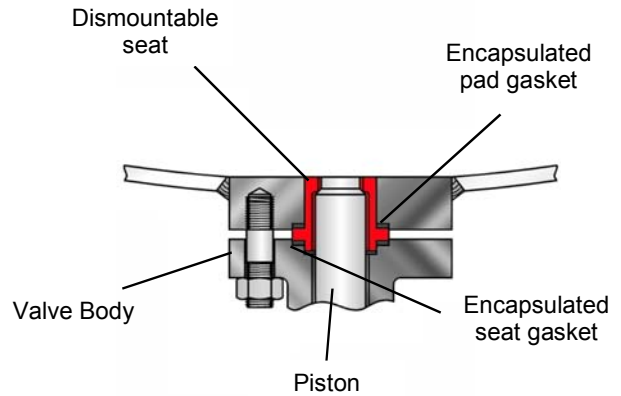


Fig. 026 & 035

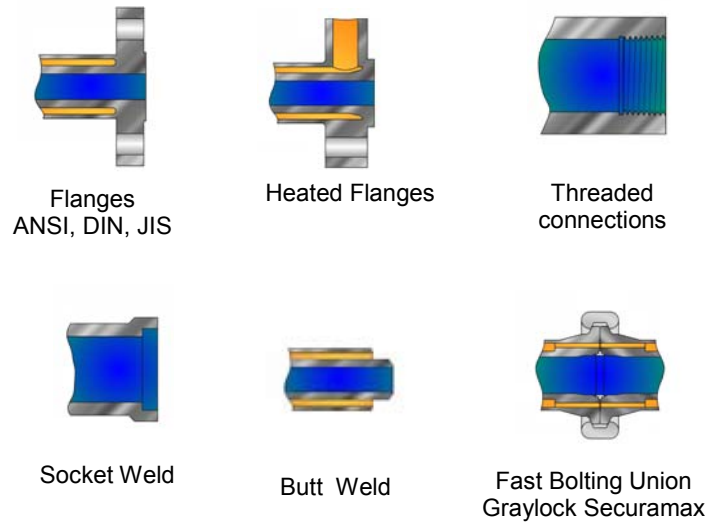
DISMOUNTABLE SEAT

As an option the body seat can be dismantable. This is an attractive option when the process is corrosive during the reaction. Parts directly in contact with the process (seat and trim) are made of sophisticated alloys while valve body and piping are fabricated from regular materials.

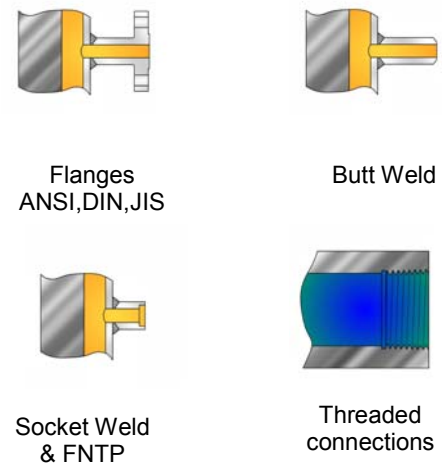
Note: The closing effort is transferred to the pad bolting and the body flange. A stress calculation is required to check the correct sizing of the bolting section & the flange thickness. Strahman engineers will be pleased to make these calculations.



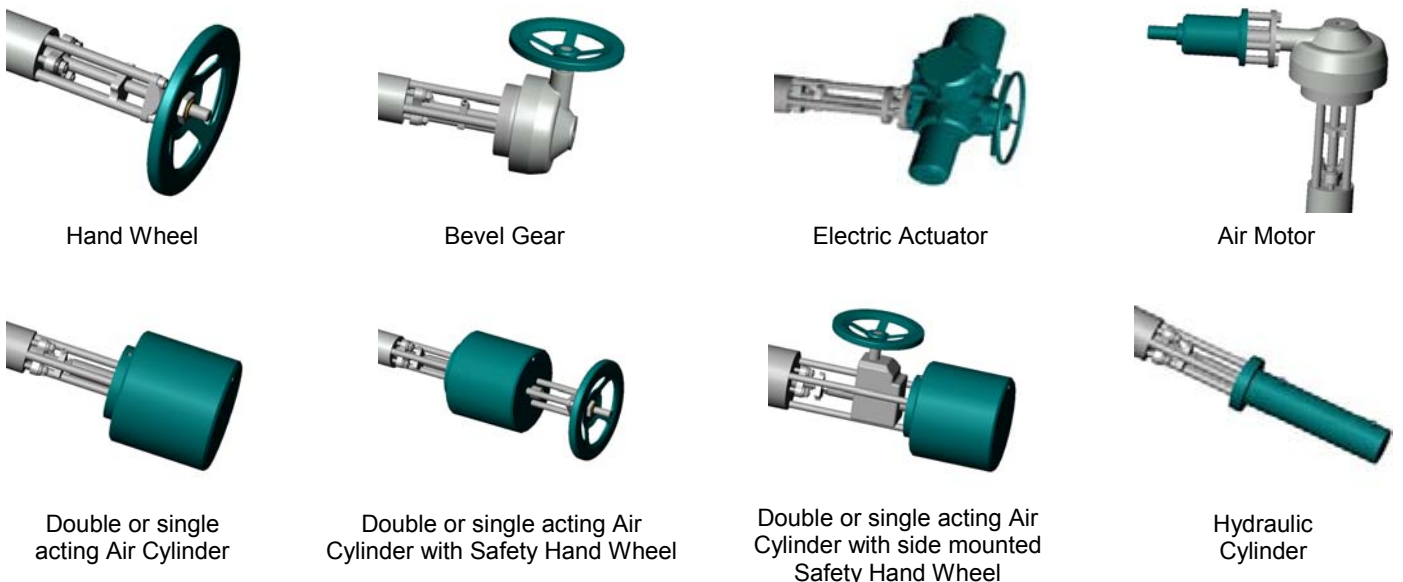
LINE & BRANCH CONNECTIONS



JACKET CONNECTIONS



ACTUATION OPTIONS

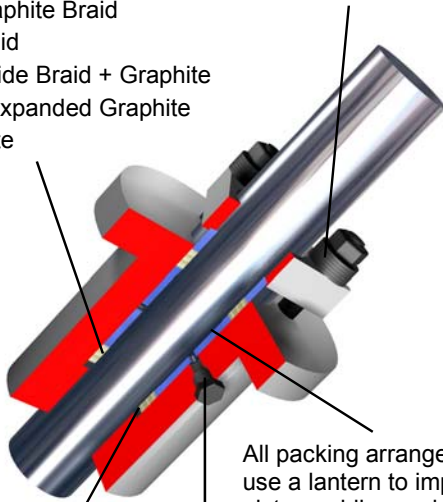


PACKING DEFINITION

Typical Packing Materials:

- PTFE
- PTFE / Aramide Braid
- Carbon / Graphite Braid
- Graphite Braid
- PTFE /Aramide Braid + Graphite
- Lamellar + Expanded Graphite
- Pure Graphite

Live loaded packing arrangement minimizes maintenance



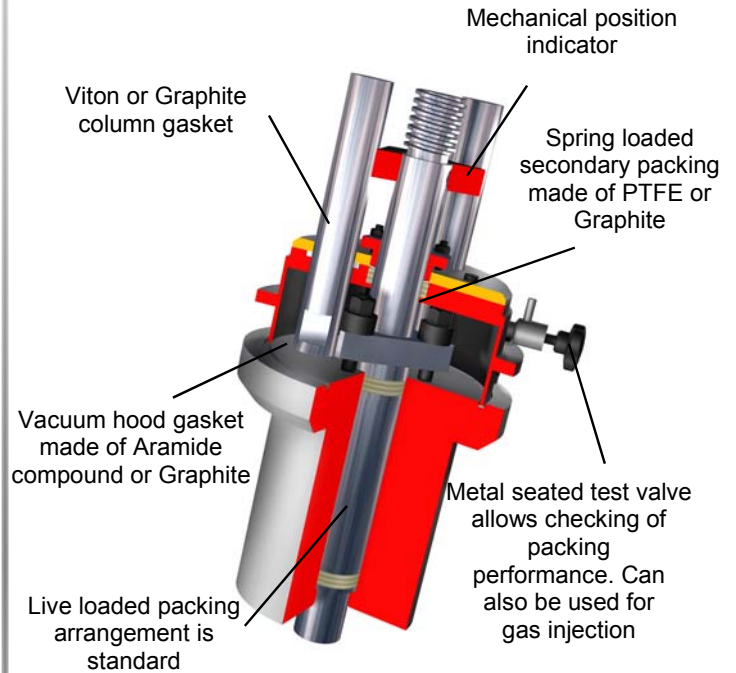
Bottom ring material is selected with a differential hardness from the piston to prevent piston damage

All packing arrangements use a lantern to improve piston guiding and avoid dead space in body cavities

Optional 1/4 inch NPTF can be used for leak detection or inert gas injection to avoid leakage to atmosphere by creating an over pressure

VACUUM HOOD

For valves on full vacuum service Strahman offers a special **vacuum package** that maintains tightness to atmosphere. Valves with this package are usually equipped with an **M Ring Seal** design as process sealing. The system uses a replaceable aluminium or nickel seal ring and provides high vacuum performance. This special **vacuum package** provides zero leakage between atmosphere and process.



STANDARD PAD GASKET RANGE

- PTFE
- Aramide / Nitrile
- Carbon / Aramide
- Laminated Graphite
- Laminated Graphite / 316
- Spiral Wound 316L / PTFE
- Spiral Wound 316L / Graphite
- Spiral Wound Inconel / Graphite
- Spiral Wound Titanium / Graphite
- Perfluoroelastomer (Kalrez) O
- Welded Lips
- Metallic O Ring Helicoflex Gasket Aluminium/316
- Metallic O Ring Helicoflex Gasket Nickel/Nimonic 90
- 316L RTJ
- Nitrile O Ring
- EPDM O Ring
- Silicone O Ring
- Fluorocarbon (Viton) O Ring
- Silicone FEP Jacketed O Ring

STANDARD BODY GASKET RANGE

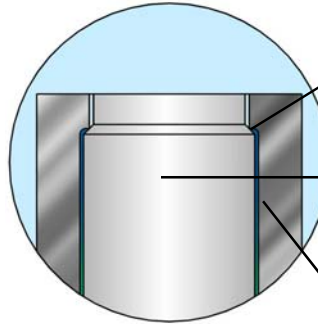
- PTFE
- Aramide / Nitrile
- Carbon / Aramide
- Laminated Graphite
- Laminated Graphite / 316
- Spiral Wound 316L / PTFE
- Spiral Wound 316L / Graphite
- Spiral Wound 321 / Graphite
- Spiral Wound Inconel / Graphite
- Spiral Wound Titanium / Graphite
- Welded Lips

Valve Coding System

| | V | P | 4 | S | B | J |
|--|---|---|---|---|---|---|
| V Vessel Reactor Valves | | | | | | |
| P Piston D Disc R Rising Disc A Accessories | | | | | | |
| 4 45° Branch Angle 6 60° Branch Angle 9 90° Branch Angle S Straight \$ Special | | | | | | |
| S Soft Seated M M Seal C M Control D Dual Seal R M Ring Seal | | | | | | |
| B Extended Body P Extended Plunger c D Dismountable Seat \$ Special | | | | | | |
| J Jacketed - Non-Jacketed | | | | | | |

SEALING SYSTEMS

M Seal- This sealing system offers a wide range of material combinations selected to create a differential hardness between body and plunger seat. The maintenance friendly design of the **M Seal** system provides long & reliable valve performance and is suitable for almost all process conditions.



Greater hardness on body seat assures that wear occurs on piston first
 - Easy maintenance is key
 One-piece piston design provides the geometrical arrangement to ensure long-term performance

Temperature

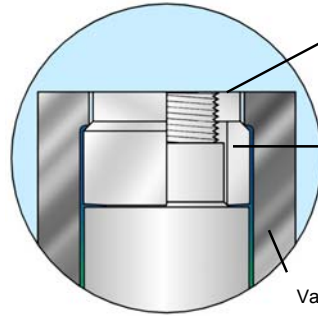
Min: -200° C / -330° F
 Max: 815° C / 1500° F

Pressure

Max: 630 bar / 9000 psig

Valve Body

M Ring Seal- The **M Ring Seal** is also based on a differential hardness between the body and the piston surface. The replaceable metallic seal ring made of aluminum, nickel or titanium provides excellent sealing performance especially in applications that combine full vacuum and temperatures above 200° C.



Locking nut is secured by a tack weld

Resilient metal ring seals between the body seat and disc and provides high performance sealing for vacuum and high temperature applications

Temperature

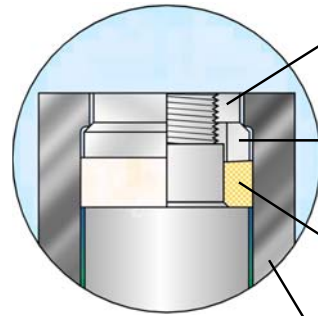
Min: -200° C / -330° F
 Max: 450° C / 840° F

Pressure

Max: 250 bar / 3550 psig & full vacuum

Valve Body

Dual Seal- The **Dual Seal** is a unique double sealing system that works like a piston operating within a cylindrical seat. Unlike other designs, the secondary resilient seal ring is mounted on the piston and will expand after metal to metal contact of the primary seat ring. The design provides a true metal to metal seal in case of resilient seat failure.



Locking nut is secured by a tack weld

The primary metal to metal seal ring compresses the secondary resilient seal ring

A secondary seal ring is made of resilient material like PTFE, PTFE glass filled

Temperature

Min: -50° C / -60° F
 Max: 200° C / 450° F

Pressure

Max: 250 bar / 3550 psig & full vacuum

Valve Body

VESSEL CONNECTIONS

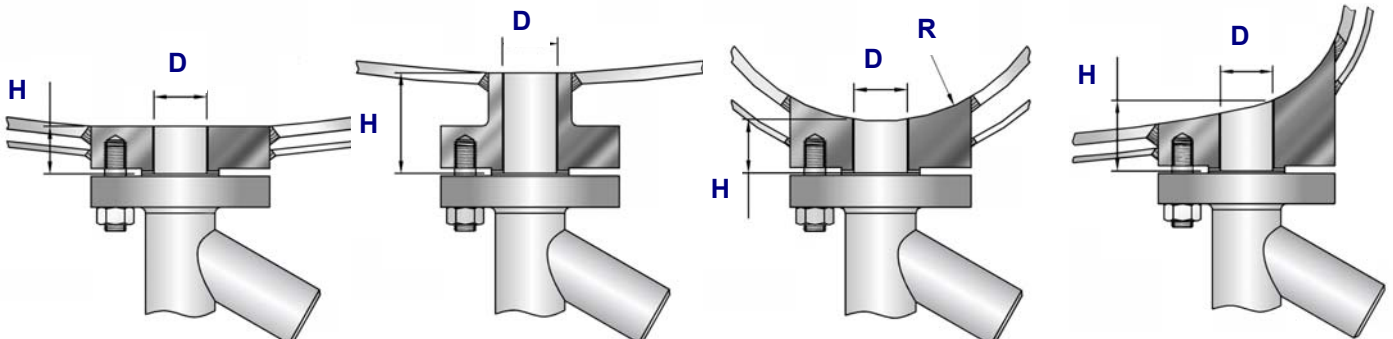
To connect valves to existing vessels or reactors, there are two possibilities: a nozzle or a pad connection. In both cases, the customer must specify the following vessel connection details: « **D** » (inside diameter), « **H** » (height), **DN** (nominal size), **PN** (pressure rating) and connection **standard** (ISO, ANSI, DIN, etc.). To eliminate retention areas radius « **R** » can be specified for optional contouring. For new projects Strahman can supply valves with easy-to-fit standardized pads that are ready to be installed.

Vessel Pad

Vessel Nozzle

Pipe Assembly Pad

Custom Vessel Pad



The Strahman family of products include:

SAMPLING VALVES

Strahman has a full line of sampling valves that produce live samples without exception. Our sampling valves unique design prevent failure caused by sediment or clogging.

DRAIN VALVES

Strahman Drain Valves are designed to prevent clogging. They are ideal for use in liquid and gas service or with slurries, polymers, and high viscosity fluids that tend to solidify at room temperature.

WASH DOWN EQUIPMENT

Strahman offers a full line of mixing units, hose stations, hoses, nozzles and wash down accessories. Our wash down line is designed for industrial use and is used in a wide variety of industries including food, beverage, pharmaceutical, chemical and other applications.

LINE BLINDS

Strahman Line Blinds provide zero leakage down stream and total isolation on process pipelines, vessels, and maritime applications. No pipeline movement is required when blind position is changed.

Please contact your local Strahman representative for further details
or
visit our website : www.strahmanvalves.com



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ISO 9001 Certified