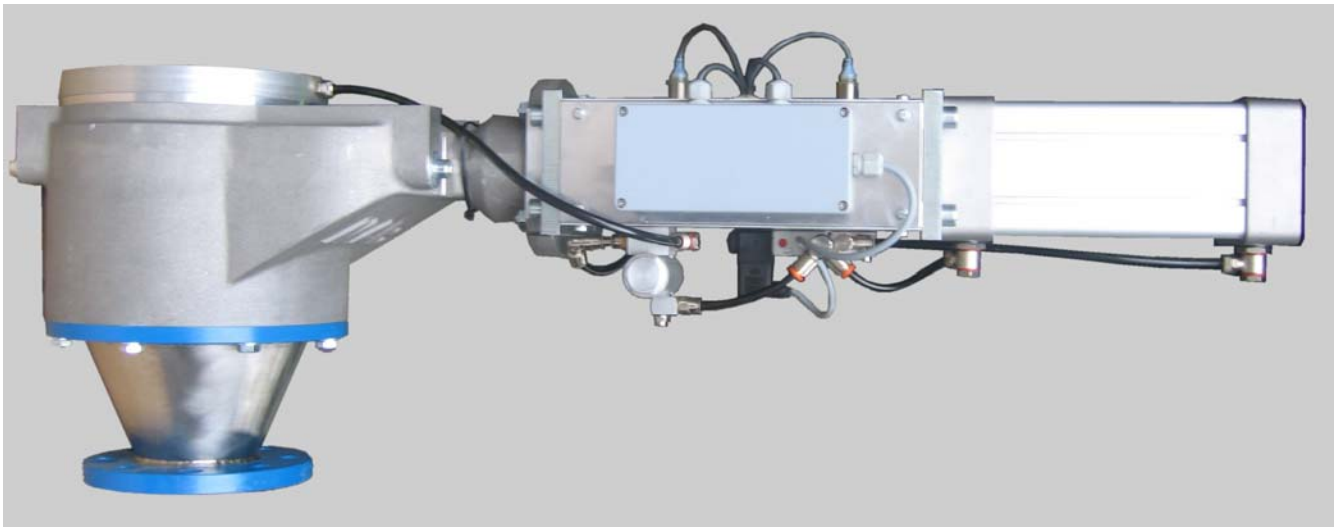


MAB INFLATABLE GASKET SLIDE VALVES SERIES TSV FOR POWDERED AND GRANULAR SOLID MATERIALS



- ▲ Automatic slide valves type TSV-150 with inflatable sealing system. The range of TSV slide valves supplied by MAB can always close against a head of flowing solids.

The TSV series of inflatable gasket slide valves have been designed and manufactured by MAB to solve difficult and frequently experienced problems when handling bulk solid materials, that are:

- to CUT OFF the flow of a powdered or granular material in a pipe or duct, without jamming the slide.
- after the slide has closed, to effect a PERFECT PRESSURE SEAL between the two sections of the pipe divided by the slide. This is achieved by a special inflatable sealing device, which is automatically actuated when the slide reaches the fully closed position.
- to guarantee a PERFECT SEAL with respect to the surrounding atmosphere, thereby eliminating the leakage of gas or product which, in the case of aggressive or toxic substances, could be dangerous to personnel or to the environment.

TYPICAL APPLICATION SECTORS

- FIBRES (nylon, polyester, polypropylene,...)
- PLASTICS (polyethylene, polystyrene, ABS, ...)
- CHEMICALS
- FOOD (sugar, rice, wheat, ...)
- MINING (coal, limestone, . . .)
- and ANY OTHER INDUSTRY where there is a requirement to stop the flow of powdered or granular solid materials, or mixtures of solids with liquids, whilst maintaining a perfect pressure seal and eliminating any leakage into or from the surrounding environment.



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MAB INFLATABLE GASKET SLIDE VALVES SERIES TSV FOR POWDERED AND GRANULAR SOLID MATERIALS



M A B INFLATABLE GASKET SLIDE VALVES, SERIES TSV, WITH SPECIAL PRESSURE SEALING SYSTEM

MAB - TSV series of inflatable gasket slide valves meet the requirements outlined on the previous page by:

- ORIGINAL DESIGN so that the slide will close completely with any kind of solid material
- SPECIAL PRESSURE SEALING SYSTEMS that are available for different applications:
 - with or without gas (or air) for their actuation
 - with a sealing system which is operated only on metal parts
- GOOD DESIGN of all constituent components.
- SELECTION of the HIGHEST QUALITY MATERIALS in order to avoid problems of wear to either the metal components or to the sealing system.
- HIGH ACCURACY in manufacturing and assembly.



▲ MAB automatic slide valves type TSV-250 for installation with winterization, special execution for low ambient temperatures -40°C .



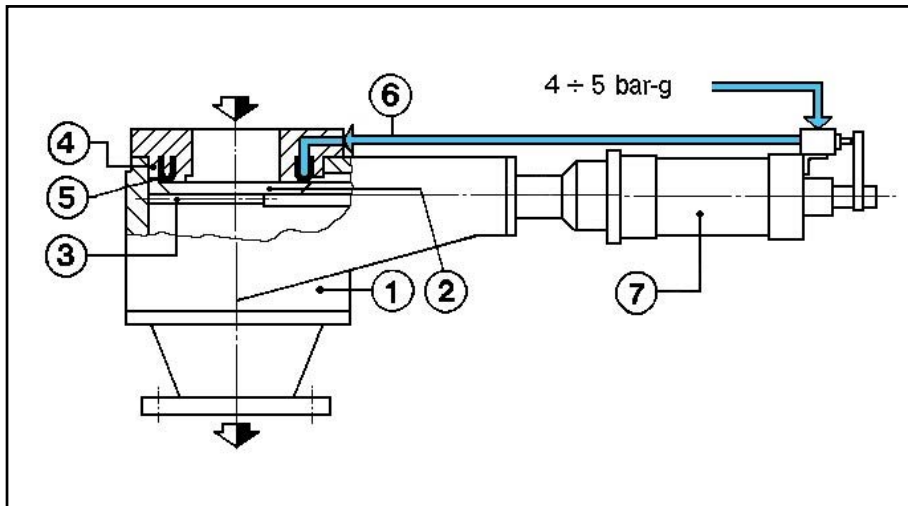
◀ A set of MAB automatic slide valve type TSV-80 with inflatable sealing system for installation in a PA6 plant with nitrogen.

MAB INFLATABLE GASKET SLIDE VALVES

SERIES TSV

FOR POWDERED AND GRANULAR SOLID MATERIALS

PRINCIPLE OF OPERATION



Series TSV inflatable gasket slide valves are available with either manual or automatic actuation. They are supplied with a special inflatable sealing system which can operate at temperatures up to 240°C.

The TSV series of slide valves produced by M A B have many advantages.

The HOUSING (1), which is normally a casing, is of a shape that eliminates the retention of solids. The slide itself (2) is of substantial construction and is profiled with a SPECIAL CUTTING SHAPE. The slide is mounted on special guides (3), which are fabricated from hardened steel, and closes against a mating seat (4), which also is made from treated steel.

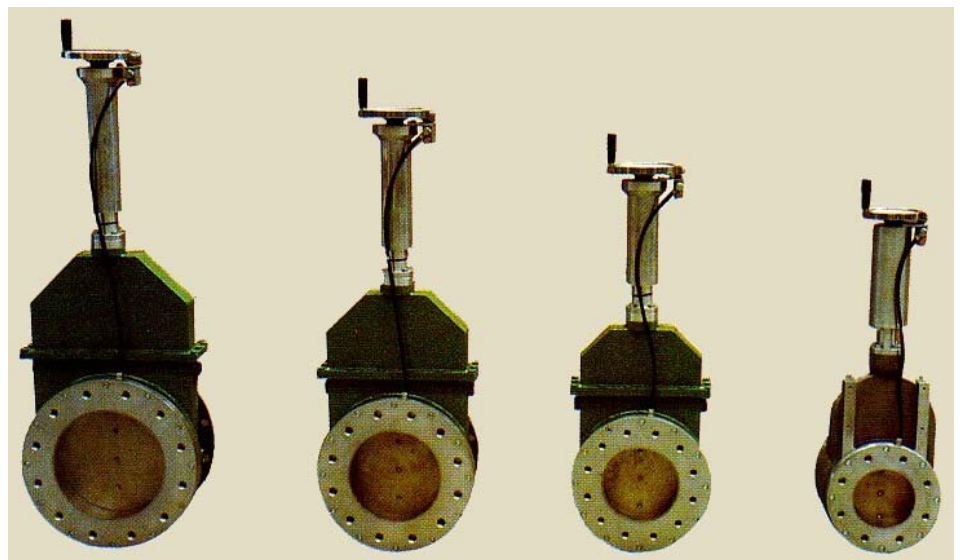
The sealing system (5) incorporated into this seat is inflated with compressed air (or other gas) when the slide reaches the fully closed position and guarantees perfect sealing between the two zones divided by the slide.

The fluid used to actuate this sealing system (6) may be compressed air, an inert gas or any other gas depending on availability and process requirements. The slide is actuated by a double acting cylinder (7), which also includes self cleaning seals to protect against the entrance of powder.

The valve is fast acting, even in the presence of solid products.

The design is such that over 500,000 actuations are usually possible without the necessity for servicing.

A set of manually operated TSV slide valves for use with solid products. The pressure sealing capability is achieved with an inflatable sealing system. The picture shows valve sizes DN 250, DN 200, DN 150 and DN 100.



MAB INFLATABLE GASKET SLIDE VALVES SERIES TSV FOR POWDERED AND GRANULAR SOLID MATERIALS



GENERAL OPERATING CHARACTERISTICS

- With the slide in the closed position the zones either side of the slide are completely isolated from each other - this is achieved by the special inflatable sealing system designed by MAB.
- The sealing system is only actuated when the slide is stationary in the closed position. As a result, wear of the seal is limited. This also applies to the manually operated range of TSV slide valves.
- The TSV series of slide valves afford a perfect seal for both dust and gas. There is no leakage out of the valves and they guarantee good protection to personnel and to the surrounding environment.
- No inlet of air from the surrounding atmosphere is possible.
- The construction of the M A B - TSV series of slide valves is such that powders and granular solids having particle sizes up to 20 mm are easily cut-off. For larger particle sizes, special models are available on request.
- They are fast acting, irrespective of whether the product is flowing or stationary.
- They can operate with a high number of actuations (typically over 500,000) without wear and the necessity for servicing.
- The TSV series of valves are suitable for a wide range of solid products, including those that exhibit toxic and other difficult handling characteristics.
- They have no internal dead regions and, as a consequence, do not retain any products.
- They are self-cleaning. Any product crusts that may be formed are automatically removed and reintroduced into the flow.
- They may be quickly stripped down and inspected.
- They do not require extra servicing for solving problems with jammed slides, because such jamming does not occur.
- Very low maintenance requirements.

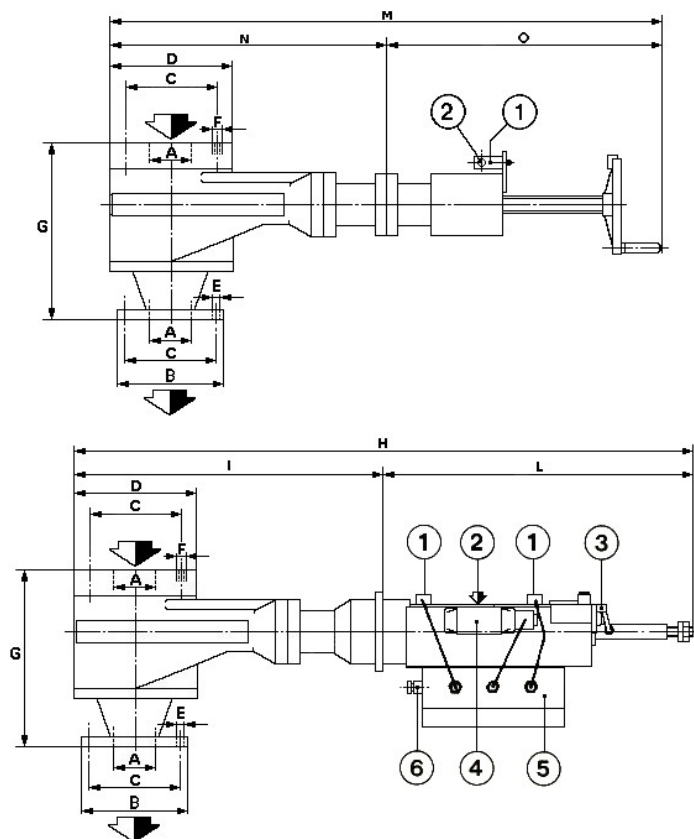
M A B designs and manufactures inflatable gasket slide valves for special applications involving abrasive materials and liquid products.



▶
A set of inflatable gasket slide valves type TSV-250 for delivery to a SPP plant operating with polyester chips at temperatures up to 220°C.

MAB INFLATABLE GASKET SLIDE VALVES SERIES TSV FOR POWDERED AND GRANULAR SOLID MATERIALS

DIMENSIONS OF MAB SERIES TSV SLIDE VALVES WITH PRESSURE SEALING



MANUALLY ACTUATED MODEL

All inflatable gasket slide valves type TSV are available in different variants:

- with manual actuation
- with automatic actuation
- with or without inflatable sealing system
- special models available for abrasive solids and liquids

- 1 Limit switch
- 2 Instrument air inlet (4 bar g)
- 3 Pressurisation valve
- 4 Solenoid valve
- 5 Junction box
- 6 Cable gland, PG 16

AUTOMATICALLY ACTUATED MODEL

TYPE (*)	DIMENSIONS (mm)													Weight (kg)	
	A Ø	B Ø	C Ø	D Ø	E	F	G	H	I	L	M	N	O	MAN.	AUTO
TSV-50	50	165	125	185	4 x Ø 18	4 x M 16	270	915	479	436	670	420	250	22	28
	56														
TSV-65	65	185	145	185	4 x Ø 18	4 x M 16	270	915	479	436	670	420	250	22	28
	71														
TSV-80	80	200	160	245	8 x Ø 18	8 x M 16	330	1081	567	514	976	525	451	45	51
	83.7														
TSV-100	100	220	180	245	8 x Ø 18	8 x M 16	330	1081	567	514	976	525	451	48	50
	109														
TSV-125	125	250	210	300	8 x Ø 18	8 x M 16	350	1317	683	634	1191	620	571	55	63
	134.5														
TSV-150	150	285	240	300	8 x Ø 22	8 x M 20	350	1317	683	634	1191	620	571	58	62
	163														
TSV-200	200	340	295	380	12 x Ø 22	12 x M 20	300	1547	632	915	1370	632	738	66	75
	-														
TSV-250	250	405	355	430	12 x Ø 26	12 x M 24	300	1747	732	1015	1570	732	838	79	89
	-														
TSV-300	300	460	410	480	12 x Ø 26	12 x M 24	300	1947	832	1115	1770	832	938	96	107
	-														

(*) The number (-50...-300) placed after the letters TSV indicates the nominal size (DN) of the valve.
The dimensions indicated for the flanges are to DIN standards with nominal pressure rating PN 16.
Other flange types (ANSI/ASA, JIS, etc.) are available upon request.
All dimensions are subject to change without notice.

MAB INFLATABLE GASKET SLIDE VALVES SERIES TSV FOR POWDERED AND GRANULAR SOLID MATERIALS



TECHNICAL DATA

- Standard design pressure 6 bar g (higher pressures available on request)
- Design temperature range -15 .. +240 °C
- Nominal sizes DN50 ... DN 300 (Larger sizes are available on request)
- Actuation systems
 - double acting air cylinder
 - manual, with hand wheel
 - electric
- Housing
 - cast light alloy (AL-Si)
 - cast Stainless Steel (grade 304-L)
 - welded in any suitable material
- slide and guides specially treated Stainless Steel having high hardness
- other internal components..... usually Stainless Steel
- internal bolts Stainless Steel
- sealing system..... with gasket made from SILICONE, VITON, EPDM ... or other appropriate materials.
- pressure of instrument-air (or gas) to actuate sealing system..... about 2 bar greater than the highest internal operating pressure

For those cases where air or gas is not available or desirable for actuating the sealing system, SPECIAL VALVES are available.

- flanges according to established codes: DIN, ASA, UNI, JIS, etc.
- mounting positions horizontal or vertical
- closing time less that 1,5 seconds
- maintenance intervals various according to operating conditions and products being handled. A general check is recommended after 500,000 actuations.

Under normal operating conditions compressed air is not required for cleaning purposes during the closing sequence.

For sticky products special cleaning systems are available on request to facilitate internal washing.



▶ Inlatable gasket slide valves type TSV-80 installed in pipelines operating with Nitrogen under positive pressure in a plant for producing Nylon 6.6 POY.