

# QV-032-BA



- Read and follow these safety instructions and – when used in explosive hazardous areas also the special conditions and hints for a safe appliance on the back and take notice of the operating instructions.

## Safety instructions

1. The installation, maintenance, initial operation, removal and repair may be done only by qualified experts with knowledge about the handling of pressure equipment and pneumatic air compressors.
2. The statutory and other applicable regulations and standards have to be noticed and kept.
3. The maximum pressure and temperature given by the data plate have to be noticed and kept.
4. A pressure-reducing valve has to be installed in the control pressure supply line and it has to be set at the calculated control pressure.

Calculation	Example
shut off pressure (Process pressure PD) .....	2.0 bar
+ 2.5 bar (Control pressure over PD) .....	2.5 bar
= Control pressure to be set .....	4.5 bar

5. The control pressure given by the type plate must not be exceeded.
6. The differential pressure given by the type plate must not be exceeded.



**ATTENTION!** The articles 3, 4, 5 and 6 are to be strictly kept.  
To high process or control pressure shortens the durability of the hose.

7. Initial operation and pressure admission only if the pinch valve is installed (e.g. mounted in a tubing)
8. If there is no conveying pipe mounted at one side, it has to be ensured by adequate measures (e.g. grid) that the access (e.g. put in fingers or hands) to the inside of the pinch valve is impossible.  
Or place suitable warning informations e.g. crushing hazard.



### ATTENTION! Crushing Hazard

It is strictly forbidden to put fingers, hands, other extremities or objects into the valve.  
Sharp-edged objects damages the hose.

9. When the pinch valve is damaged the control medium has to be shut off immediately and the valve is to release from any pressure e.g. by removal of the control medium conveying line and / or by turning the hand operation of the solenoid valve (directional valve) at "bleeding".
10. The pinch valve may be removed and demounted only in pressure-free condition.

## Special conditions and hints for safe appliance in explosive hazardous areas

11. The installation, initial operation, removal, maintenance and repair has to be supervised resp. controlled by an "authorized person" for explosion protection.
12. The pinch valve has to be used only in the category given by the type plate or in lower ones.

Type	Category	usable in			
		Inside-Conveyor area		Surroundings	
QV...-EE-NRE-B22	1/1G	zone 0	or zone 1	zone 0	or zone 1
	1/1D	zone 20	or zone 21	zone 20	or zone 21
QV...-AE-NRE-B11	1/2G	zone 0	or zone 1	zone 1	or zone 2
	1/2D	zone 20	or zone 21	zone 21	or zone 22
QV...-AA-NRE-B6	2/2G	zone 1	or zone 2	zone 1	or zone 2
	2/2D	zone 21	or zone 22	zone 21	or zone 22



If electrical devices (e.g. solenoid valves to control the compressed air) are attached, the pinch valve can only be mounted in areas those devices are approved for.

13. The pinch valve has to be permanent conductive connected to a conductive, earthed tubing. If the tubing is not conductive the valve is connect to earth.
14. Only materials which can't lead to an explosive danger can be used as control medium (e.g. compressed air, inert gas, water etc.). If a combustible liquid is used as control medium, the ignition point of this liquid has to be higher than +135 °C.
15. If the pinch valve is used as device of category 1/1G or 1/2G with a maximum permissible operation temperature of +120 °C the ignition temperature of the combustible materials has to be equal or higher than  $\geq +150$  °C. With materials of temperature class T4 (Limiting temperature +135 °C) the operation temperature of the pinch valve has to be maximum +108 °C.
16. By the usage of pinch valves with clamping sleeves of aluminium no rusty particles are allowed in the conveyed material when used in category 2G.
17. Control medium may penetrate the conveying material through a leakage of the hose.



If - for example - compressed air used as control medium penetrate the conveyor pipeline in which an explosive hazardous atmosphere is conveyed it will cause no higher danger.

But if the conveyor medium is a liquid burning material and penetrated by air, an explosive atmosphere can be formed in the conveyor pipeline. Likewise conveyed material (e.g. combustible gas, combustible liquid) can penetrate the control medium (e.g. compressed air) and build an explosive atmosphere.

Such situation has to be avoided by a corresponding monitoring of the control medium (e.g. pressure control).

18. The pinch valve may only be used when its materials are so resistant against mechanical and/or chemical effects resp. corrosion that the explosion protection will not be disabled.
19. By the application of pinch valves in explosive hazardous areas pay attention to the hints given by the DIN EN 1127-1: chapter 6.4.2 regarding the safety clearance of temperatures.
20. Take notice of the requirements of DIN EN 60079-14 and DIN EN 60079-17 especially regarding the dust deposits and temperatures and follow the pertinent rules and regulations.

## Operating instructions

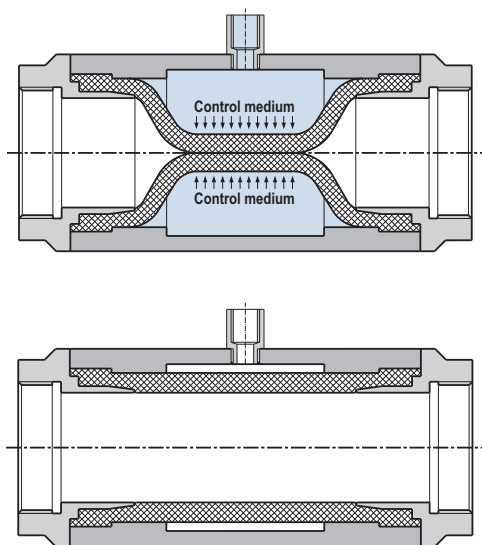
### 1. Specification

#### 1.1 Intended Use

The pinch valve is for shutting off and dosing of powdery, grained, viscous, soiled and aggressive materials, gases, mixtures and liquids, e.g. to stop the flow of bulk goods during the pneumatic conveying.

#### 1.2 Function

The elastic hose will be squeezed by the control medium. Present solids up to a determined size will be enclosed by the hose. After release of the control pressure the hose opens in its circular shape.



010-0230

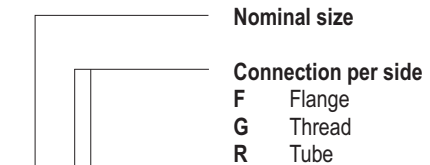
#### 1.3 Control

Control of the pinch valve should be done with a directional valve (3/2-way solenoid valve). For quick opening of the hose the installation of a quick air-exhaust valve at the control connection is recommended. To monitor of the control pressure a additional pressure switch can be installed.

#### 1.4 Technical Data

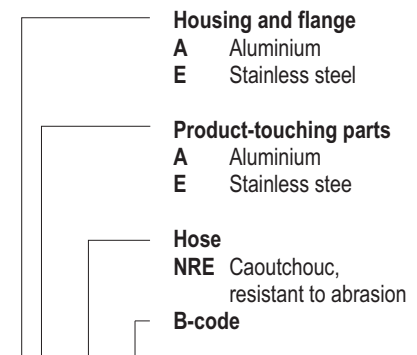
<b>Manufacturer</b>	<b>MOLLET</b> Füllstandtechnik GmbH
<b>Address</b>	Industriepark RIO 103 74706 Osterburken
<b>Name</b>	Pinch Valve
<b>Type</b>	QV
<b>Control medium</b>	Compressed air, inert gas, water (Oil at request)
<b>Mounting position</b>	any
<b>Maintenance</b>	none

#### 1.5 Connection



QV100-FF- . . . . .

#### 1.6 Material



QV. . . . -AA-NRE-B. .

#### 1.7 Operation data

<b>Process pressure</b>	maximum 4.0 bar Higher process pressure at request
<b>Control pressure</b>	2.5 bar over process pressure
<b>Differential pressure</b>	maximum 2.5 bar
<b>Temperature range</b>	maximum +80 °C wet

## 2. Installation

### 2.1 Preparation

Read and follow the safety instructions and the operating instructions, before handling with the device !

### 2.2 Mechanical Connection

The pinch valve is factory-provided pre-assembled and has only to be connected with the joints of the plant. Avoid charge of the pinch valve and its connection with bending forces and vibrations. To avoid damaging of the rubber hose do not carry out welding works immediately nearby the valve.

### 2.2 Control Pressure Connection

- Connect the pinch valve with the control pressure supply line.
- Adjust the pressure-reducing valve with the according to article 4 of the safety instructions calculated control pressure.

### 3. Utilization

#### 3.1 Hints

The pinch valve with its equipment may be operated and monitored by expert and instructed personnel only that employees and other persons will not be brought in danger. The operating instruction with the safety instructions has to be available to the operating and maintenance personnel. Take care of the country of installation's national regulations about the operation of pressure equipment.

#### 3.2 Putting into operation

Commissioning of the pinch valve only if

- it is fix connected with the assigned joints,
- the pressure-reducing valve is installed at the control pressure supply line and it is pre-set,
- maybe necessary safety devices are onhand and operative.

If the pinch valve is installed in a suction line with a vacuum >0.05 bar, the air exhausting connection of the directional valve has to be connected with the vacuum piping to achieve a pressure equalization at the hose.

#### 3.3 Normal operation

- Use the pinch valve in its intended application only.
- Keep the safety instructions.
- The protection and safety devices and warning informations attached to the pinch valve must not be removed.
- The pinch valve is open without control pressure and is closing only if the control pressure is actuated.
- If the pinch valve is damaged during operation, put it immediately out of operation and release it from any pressure.
- If the permissible pressure or the permissible process temperature was exceeded, check the hose.

#### 3.4 Improper Use

- Ignoring the safety instructions and the operating instructions.
- Use of the pinch valve in non-intended application.
- Operating of the pinch valve by personnel who is not authorized or not proper instructed.
- Mounting of spare parts which are no original parts.
- Violation against applicable law and standards.

### 4. Maintenance and Servicing

#### 4.1 General Information

Carry out maintenance and repair work only if the pinch valve is released from any pressure and disconnected from the control pressure supply line. If an electrical supply for accessories (e.g. electrical directional valve) is present it has to be also disconnected. If it's to reckon with the exhaust of hazardous substances during the maintenance special protection measures (e.g. personal protection equipment) is necessary.

#### 4.2 Inspection

Inspect in regular intervals

- safety devices for proper function,
- the correct pre-set of the pressure-reducing valve in the control pressure supply line,
- the hose for tear and wear,
- all connections and joints for tight fit.

Schedule the inspection intervals according to

- the kind of material which has to be shut off,
- the frequency of use.

#### 4.3 Servicing

- Damaged protection and safety devices, hoses, connections and joints has to be repaired or replaced by new ones immediately.
- The pinch valve must not be used until the complete restoration of the proper function.

### 5. Storage

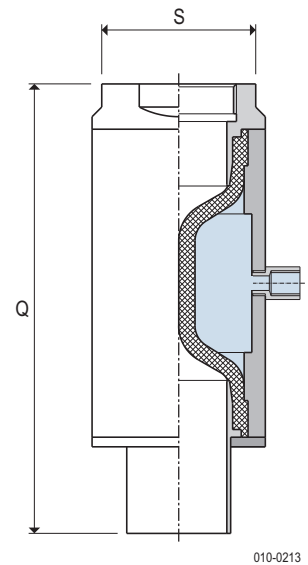
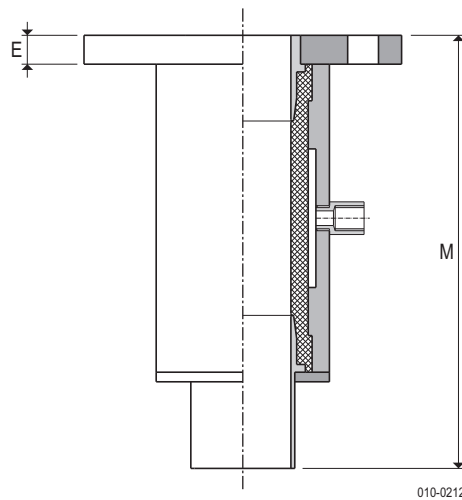
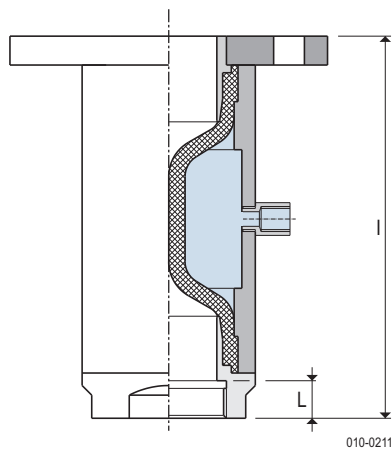
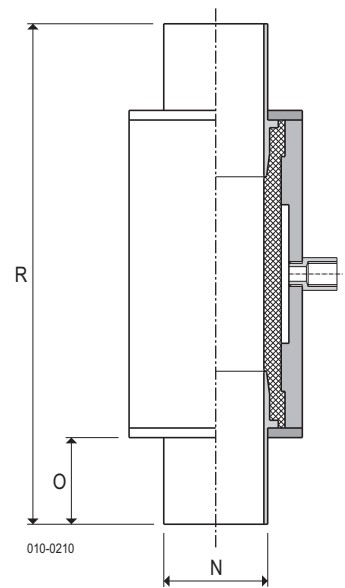
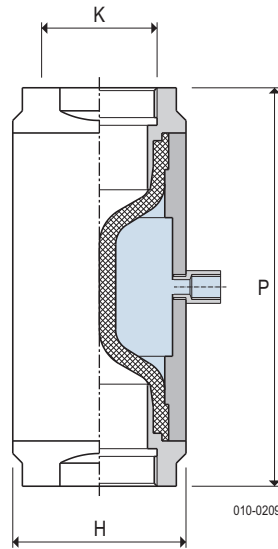
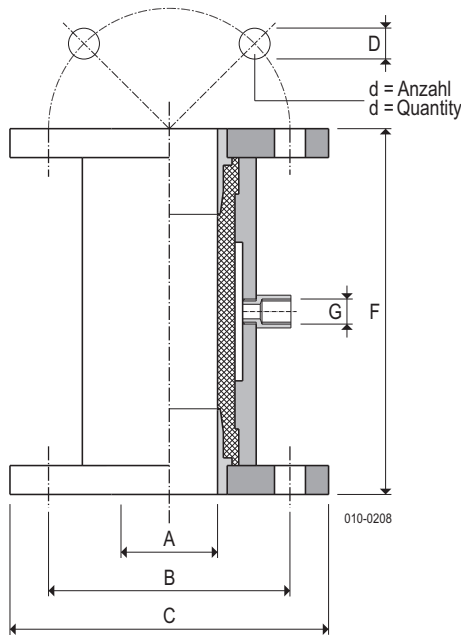
Store the pinch valve and the spare hoses dry, dust-free and protected against ultraviolet radiation.

- Storage temperature -20 °C ... +40 °C
- Storage duration maximum 24 months

### 6. Disposal

- The valve can be recycled.
- The disposal applies to the valid environmental guidelines according to the location of the carrier and the local manufacturing conditions.

## Abmessungen / Dimensions



Typ/ type	A	B	C	D	d	E	F	G	H	I	K	L	M	N	O	P	Q	R	S	NI	Steuerraum- Volumen* volume
QV-013	13							1/8	40	1/2	14					120			35	0,02	
QV-020	20							1/8	50	3/4	15					130			40	0,03	
QV-025	25							1/8	55	1	15					130			46	0,04	
QV-032	32							1/8	70	1 1/4	15					165			60	0,06	
QV-040	40	110	150	M16	4	12	178	1/8	80	188	1 1/2	18	216	40x1,5	45	197	226	254	70	0,12	
QV-050	50	125	165	M16	4	15	190	1/8	90	199	2	20	225	50x1,5	45	207	234	260	80	0,20	
QV-065	65	145	185	M16	4	15	225	1/4	110	233	2 1/2	20	280	65x2	65	240	288	335	100	0,40	
QV-080	80	160	200	M16	4	15	270	1/4	140	280	3	23	335	80x2	74	290	345	400	125	0,80	
QV-100	100	180	220	M16	8	15	310	1/4	160	320	4	23	396	100x2	93	330	406	482		1,45	
QV-125	125	210	250	M16	8	20	390	3/8	200	395	5	26	470	125x2	90	400	500	550		3,60	

\* Verbrauch je Schaltfunktion  
\* Consumption per switching function



# Sinus pinch valve

# QV

Gas+  
Dust



# Explosion protection information and Supplement to the operating instructions

## Type label details

Manufacturer and address	CE sign with the number of the "Notified Body" which is involved in the production control phase
Marking for the gas atmosphere	Further details of the tube connection can be filed in this panel, for example: -R54x2R54x2- means tube 54x2 on both sides
Marking for the dust atmosphere	EC-type examination certificate number or number of the test log
Ambient temperature (max. application temperature)	Details about the max. permissible pressures

**MOLLET** Industriepark RIO 103  
Füllstandtechnik GmbH D-74706 Osterburken  
Tel. +49 62 91 64 400

Typ **QV080-RR-AE-NRE-B11**

**Ex** II 1/2G IIB T X  
II 1/2D T X **IBExU 08 ATEX 1012 X**

-20 °C ≤ Ta ≤ +80 °C	Prozessdruck (PD) max. 4,0 bar
	Steuerdruck über PD ca. 2,5 bar
Stück Nr. 1234567890 03/08	Steuerdruck max. 6,5 bar
Auftrag-Nr. 1234567890	Differenzdruck max. 2,5 bar

CE 0044

## Special conditions for safe application

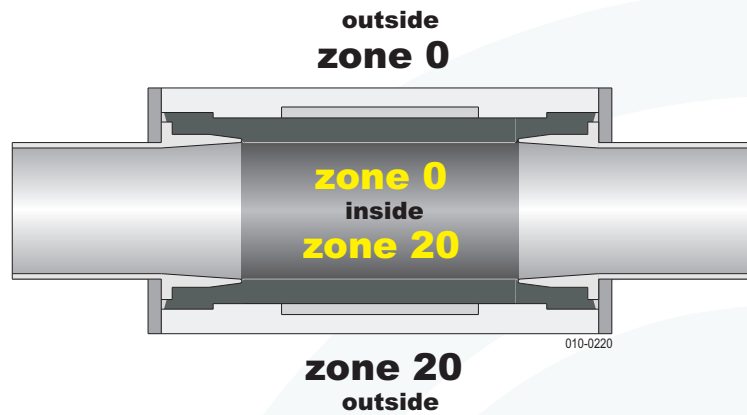
- The pinch valve may only be used when its materials under the respective conditions of operation are so resistant against mechanical and/or chemical effects resp. corrosion that the explosion protection will not be disabled.
- By the usage of pinch valves with clamping sleeves of aluminium no rusty particles are allowed in the conveyed material if a gaseous explosive atmosphere is present.
- The pinch valve has to be connected to earth.
- The "X" following the temperature detail means, that the maximum surface temperature of the pinch valves depends only on the process temperature (Temperature of the conveyed material or the control medium and also the ambient temperature).  
Thus note that by using pinch valves of the categories 1G and 1/2G the process temperature must not be higher than 80% of the ignition temperature of the matter which conditioned the zone 0.  
By the application of pinch valves of the categories 1D, 1/2D or 2D pay attention to the hints given by the EN 1127-1 chapter 6.4.2 regarding the safety clearance of temperatures.
- If a combustible liquid is used as control medium, the ignition point of this liquid has to be higher than +135 °C.

Note: The T in front of the X is not specified in the EN 13463-1 norm but makes it easier to understand the marking

## Equipment category appropriation by zones

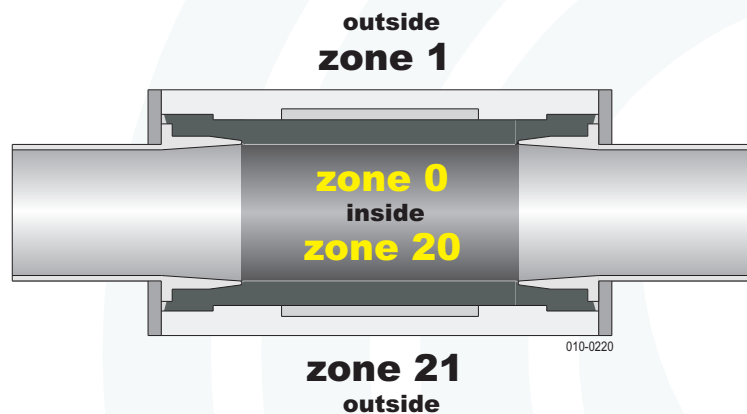
Order code **B22**

<b>MOLLET</b> Füllstandtechnik GmbH		Industriepark RIO 103 D-74706 Osterburken Tel. +49 62 91 64 400		<b>CE</b> 0044
Typ <b>QV050-RR-EE-NRE-<b>B22</b></b>				
<b>Ex</b>	II <b>1/1G</b>	IIB	T X	IBExU 08 ATEX 1012 X
	II <b>1/1D</b>		T X	
-20 °C ≤ Ta ≤ +80 °C		Prozessdruck (PD)	max. 4,0 bar	
Stück Nr. 1234567890 03/08		Steuerdruck über PD	ca. 2,5 bar	
Auftrag-Nr. 1234567890		Steuerdruck	max. 6,5 bar	
		Differenzdruck	max. 2,5 bar	



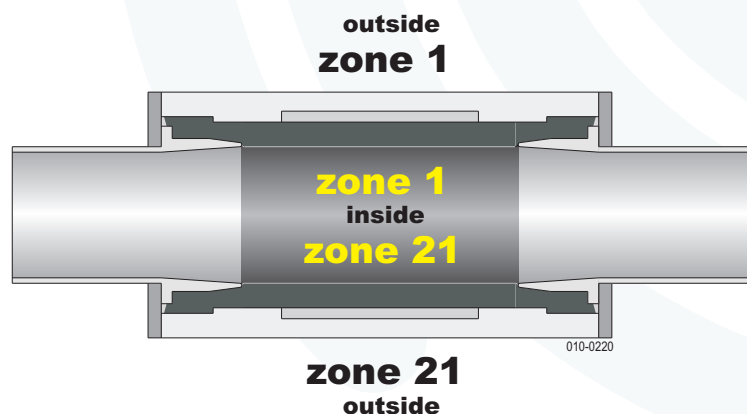
Order code **B11**

<b>MOLLET</b> Füllstandtechnik GmbH		Industriepark RIO 103 D-74706 Osterburken Tel. +49 62 91 64 400		<b>CE</b> 0044
Typ <b>QV080-RR-AE-NRE-<b>B11</b></b>				
<b>Ex</b>	II <b>1/2G</b>	IIB	T X	IBExU 08 ATEX 1012 X
	II <b>1/2D</b>		T X	
-20 °C ≤ Ta ≤ +80 °C		Prozessdruck (PD)	max. 4,0 bar	
Stück Nr. 1234567890 03/08		Steuerdruck über PD	ca. 2,5 bar	
Auftrag-Nr. 1234567890		Steuerdruck	max. 6,5 bar	
		Differenzdruck	max. 2,5 bar	



Order code **B6**

<b>MOLLET</b> Füllstandtechnik GmbH		Industriepark RIO 103 D-74706 Osterburken Tel. +49 62 91 64 400		<b>CE</b> 0044
Typ <b>QV100-RR-AA-NRE-<b>B6</b></b>				
<b>Ex</b>	II <b>2/2G</b>	IIB	T X	ATEX-PP-08-926 X
	II <b>2/2D</b>		T X	
-20 °C ≤ Ta ≤ +80 °C		Prozessdruck (PD)	max. 4,0 bar	
Stück Nr. 1234567890 03/08		Steuerdruck über PD	ca. 2,5 bar	
Auftrag-Nr. 1234567890		Steuerdruck	max. 6,5 bar	
		Differenzdruck	max. 2,5 bar	



## „X“ behind the certificate number

Pay attention to the  
“Special conditions for safe application”  
at the front side

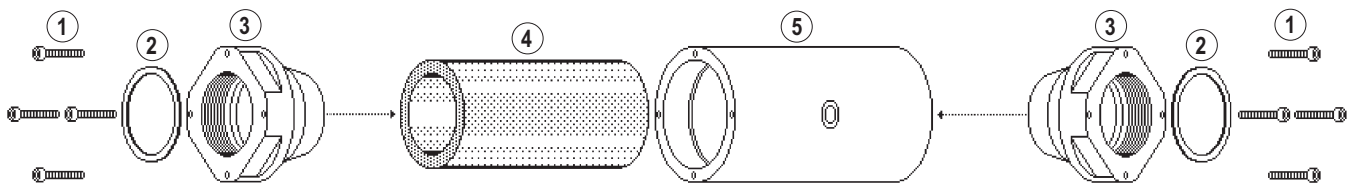




**Einzelteile**  
**Spare parts**

**MOLLET sinus pinch valve**

**QV-032**



Pos. Item	Benennung Reference	Bestellcode Order code	DIN	Werkstoff Material
1	Zylinderschraube mit Innensechskant Pan head screw with hexagon socket	0912-05X025-STV	912	Stahl, verzinkt Steel, galvanized
2	Dichtring / Gasket	032-003-DIR-NBR		NBR, weiß / NBR, white
3	Gewinde-Spannhülse Thread clamping sleeve	QV-GS032-AL		Al Mg 3
	Gewinde-Spannhülse Thread clamping sleeve	QV-GS032-ES		Edelstahl 1.4571 / Stainless steel 316 Ti
4	MOLLET-sinus-Manschette MOLLET-sinus-hose	QV-SM032-NR		Naturgummi abriebfest Caoutchouc resistant to abrasion
	MOLLET-sinus-Manschette MOLLET-sinus-hose	QV-SM032-NRE		Naturgummi abriebfest, ATEX Caoutchouc resistant to abrasion, ATEX
	MOLLET-sinus-Manschette MOLLET-sinus-hose	QV-SM032-NW		Naturgummi Lebensmittel weiß Caoutchouc food white
	MOLLET-sinus-Manschette MOLLET-sinus-hose	QV-SM032-EP		EPDM EPDM
	MOLLET-sinus-Manschette MOLLET-sinus-hose	QV-SM032-VI		VITON VITON
5	Gehäuse / Housing Gehäuse / Housing	QV-GH032-AL QV-GH032-ES		Al Mg Si 0,5 Edelstahl 1.4571 / Stainless steel 316 Ti





# EG-Konformitätserklärung EC-Declaration of Conformity

Wir/We

**MOLLET Füllstandtechnik GmbH**

Industriepark RIO 103  
D-74706 Osterburken  
Tel. 06291 64400 Fax 06291 9846

erklären hiermit, dass die Geräte:

declare that the devices:

**pneumatisches Quetschventil  
MOLLET-sinus-Quetschventil** der Typenreihen:

**pneumatic pinch valve  
MOLLET-sinus-pinch valve** of type:

**QV032-... bis QV100-...**

**QV032-... to QV100-...**

auf die sich diese Erklärung bezieht, den folgenden Normen oder normativen Dokumenten entsprechen:

to which this declaration relates is in accordance with the following standards or other normative documents:

**Richtlinie 97/23/EG** (Druckgeräte-Richtlinie)

**Directive 97/23/EC** (Directive Pressure Equipment)

Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt gemäß den Bestimmungen der Richtlinie.

The Essential Health and Safety Requirements are assured by compliance with the directive.

Einstufung:  
**Druckhaltendes Ausrüstungsteil der Kategorie I**

Categorization:  
**Pressure accessories of category I**

Fluidgruppe (Art. 9):  
**1, mit Ausnahme instabiler und brennbare Gase**

Fluid group (Art. 9):  
**1, except for unstable and flammable gases**

**brennbare Gase sowie pneumatischer Transport von brennbaren Stäuben nur mit einem ☸ -Kennzeichen auf dem Typenschild**

**flammable gases and pneumatic conveying of flammable dusts only with a ☸ -sign at the type plate**

Mediumzustand:  
**gasförmig, flüssig und staubhaltig, wenn pD >0,5 bar**

Condition of fluid:  
**gaseous, liquid and dusty, if pD >0,5 bar**

Angewandetes Konformitätsverfahren:  
**Modul A**

Applied conformity assessment procedures:  
**Modul A**

Diese Konformitätserklärung ist nur gültig in Verbindung mit der aktuellen Betriebsanleitung.

The declaration of conformity is only valid in connection with our current operating instructions.

Osterburken, 07. Januar 2010

Osterburken, January 7th 2010



Wolfgang Hageleit

Diese Erklärung darf nur unverändert weiterverbreitet werden.

This declaration is only allowed to hand out in unchanged form.





## Einbauerklärung



im Sinne der EG-Richtlinie Maschinen 2006/42/EG, Anhang II, Nr. 1 B

## Declaration of Incorporation

according to EC Machinery Directive 2006/42/EC, Annex II, no. 1 B

Wir/We

**MOLLET Füllstandtechnik GmbH**

Industriepark RIO 103  
D-74706 Osterburken  
Tel. 06291 64400 Fax 06291 9846

erklären hiermit, dass das druckhaltende Ausrüstungsteil:

**Pneumatisches Quetschventil**  
**MOLLET-sinus-Quetschventil**

der Typenreihe: **QV ... - ... - ...**

mit den elektrischen Betriebsmitteln:  
**Magnetventil und Druckschalter** der Typenreihe:

**0 820 005 ... und Q-DS17.04- ...**

in der gelieferten Ausführung zum Einbau in eine Ausrüstung, Anlage oder Maschine bestimmt sind und alle grundlegenden Anforderungen der Maschinenrichtlinie 2006/42/EG erfüllen, soweit es im Rahmen des Lieferumfangs möglich ist. Ferner erklären wir, dass die speziellen technischen Unterlagen nach Anhang VII B erstellt wurden.

Die elektrischen Betriebsmittel entsprechen den Bestimmungen der Richtlinie 2004/108/EG über elektromagnetische Verträglichkeit, soweit es im Rahmen des Lieferumfangs möglich ist.

Die Schutzziele der Richtlinie 2006/95/EG über elektrische Betriebsmittel werden eingehalten.

Wir verpflichten uns, den Marktaufsichtsbehörden auf begründetes Verlangen die speziellen Unterlagen zu den Quetschventilen über unsere Dokumentationsabteilung zu übermitteln.

Die Quetschventile dürfen erst dann in Betrieb genommen werden, wenn ggf. festgestellt wurde, dass die Ausrüstung, Anlage oder Maschine, in die diese Quetschventile eingebaut werden sollen, den Bestimmungen der Maschinenrichtlinie 2006/42/EG entspricht und die EG-Konformitätserklärung gemäß Anhang II A ausgestellt ist.

Osterburken, 07.07.2010



Diese Erklärung darf nur unverändert  
weiterverbreitet werden.

declare herewith, that the:

**Pneumatic Pinch Valve**  
**MOLLET-sinus-pinch-valve**

of the series: **QV ... - ... - ...**

with the electrical accessories:  
**Solenoid valve and pressure switch** of the series:

**0 820 005 ... and Q-DS17.04- ...**

in the delivered version, are intended to be incorporated into other equipment, plant or machinery and are complying with all essential requirements of the Machinery Directive 2006/42/EC, as far as the scope of delivery allows. Additional we declare that the relevant technical documentation is compiled in accordance with part B of Annex VII.

The pinch valves are in conformity with the EC Directive 2004/108/EC relating to electromagnetic compatibility, as far as the scope of delivery allows.

The safety objectives of the EC Directive 2006/95/EC relating to electrical equipment are observed.

We commit to transmit, in response to a reasoned request by the market surveillance authorities, relevant documents on the pinch valves by our documentation department.

The pinch valves must not be put into service, until the final equipment, plant or machinery into which the pinch valve is to be incorporated has been declared in conformity with the provisions of the Machinery Directive 2006/42/EC, where appropriate, and until the EC Declaration of Conformity according to Annex II A is issued.

Osterburken, July 7th, 2010

Wolfgang Hageleit

This declaration is only allowed to  
hand out in unchanged form.



## EU-Konformitätserklärung EU-Declaration of Conformity

Wir/We

**MOLLET Füllstandtechnik GmbH**

Industriepark RIO 103  
D-74706 Osterburken  
Tel. 06291 64400 Fax 06291 9846

erklären in alleiniger Verantwortung, dass das Produkt:  
declares under our sole responsibility, that the product:

**MOLLET-sinus-Quetschventil / MOLLET-sinus-pinch valve**

Typ/Type **QV ...**

den folgenden Europäischen Richtlinien entspricht:  
conforms with the following European directives:

**ATEX-Richtlinie**

**ATEX directive**

**2014/34/EU**

Angewandte harmonisierte Normen oder normative Dokumente:  
Applied harmonized standards or normative documents:

**EN 13463-1:2009**

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Diese Erklärung darf nur unverändert weiterverbreitet werden.  
This declaration is only allowed to hand out in unchanged form.