

**GENERAL FEATURES**

- Powder or granule products inside the hoppers, silos or other containers, from which they are drawn (by force of gravity) in order to be pneumatically conveyed, often tend to pack down and make a "bridge" that prevents the containers from being completely emptied.
- The VIBRA-FLOW fluidifying device prevents the material from paking down inside the container, thus increasing the effect of gravity and considerably reducing friction between the product and container wall.
- Products such as: bentonite, ash, flour, cement, feldspar, soda, kaolin, aluminium, titanium dioxide, etc..., fall more quickly, thoroughly and homogenously.

**GENERAL CHARACTERISTICS**

- Excellent fluidification of container walls
- Self-cleaning and non-cumbersome design
- Withstands "damp air"
- Very simple to install
- Can be installed inside the container (VIBRA-FLOW - I) or outside (in the event of inaccessible areas) (VIBRA-FLOW-E)

**OPERATING PRINCIPLE**

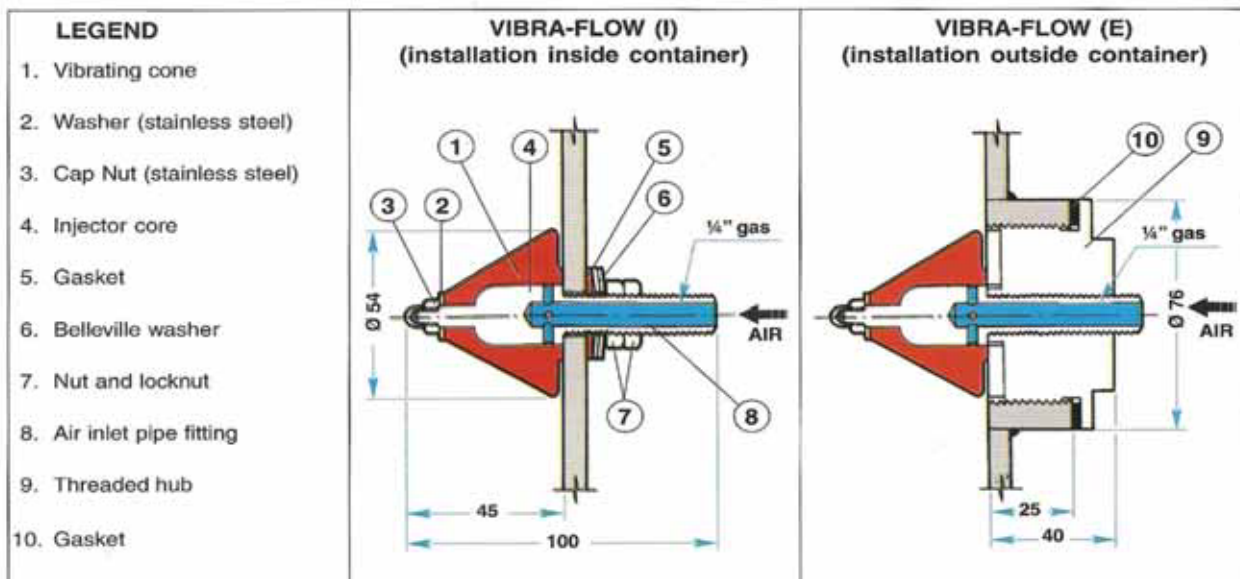
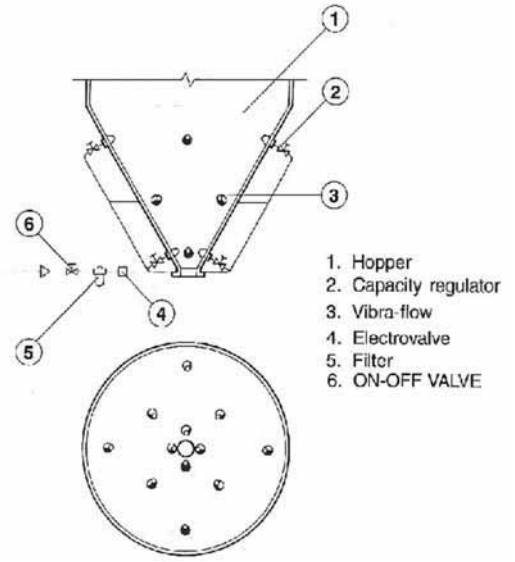
The compressed air (min. 1,5bar) is injected by the VIBRA-FLOW into the container in a circular area, generating a "thin layer" of air between the container and the material to be "stirred", which will be kept in motion while it is unloaded. The device vibrates slightly, when the container is completely empty, to ensure the "self cleaning" effect.

The VIBRA-FLOW fluidifying device runs at maximum efficiency when the air is fed intermittently, rather than continuously. The compressed air should always be introduced when the unloading mouth of the container is open.

When the VIBRA-FLOW is in stand-by, but is "immersed" in material inside the container, mass of the material and the elasticity of the rubber cone keep the device against the wall and prevent material from infiltrating inside the compressed air feeding line.

**INSTALLATION**

- The devices (both versions) should be installed near the outfeed mouth of various silos, hoppers and containers, at a distance between centres of no greater than 30 mm. The best position for VIBRO-FLOW devices is in regular rows on the circumference in order to assist air outfeed, together with the material to be removed. Should only one row of fluidifying devices be envisaged, position them so that the circular work areas overlap. In the event of several rows, the overlapping will be extended upwards. The number of devices to be installed in any case depends on the type of product to be "stirred" and the dimensions of the container from which the product is to be drawn.
- On request, AIR TEC can provide assistance for making the best of the applications of these devices.



**GENERAL FEATURES**

- **TORK series S9110 and S9170 series big and small magnetic locks are special designed**
- **Especially used on automatic locking systems**
- Compact and low weight valve enabling easy and quick installation
- Coils interchangeable
- Low coil power (5.5W for DC, 6 - 8,5VA form AC) and current (for S9170)

**ELECTRICAL CHARACTERISTICS**

Continuous Duty : ED %100  
 Coil Insulation Class : H (180°C)  
 Coil Impregnation : Polyester Fiber Glass  
 Coil Encapsulation Material : Fiber Glass Reinforced  
 Ambient Temperature : from -10°C; +60°C  
 Protection Degree : IP 65 (EN 60529) with coil duly fitted with the plug connector  
 Electric Plug Connection : DIN 46340 3-poles connectors (DIN 43650)  
 Connector Specification : ISO 4400 / EN 175301-803, Form A, Spade plug (Cable Ø6-8 mm)  
 Electrical Safety : IEC 335  
 Standard Voltages : For AC 12V, 24V, 48V, 110V, 230V  
 For DC 12V, 24V, 48V, 110 V

Other voltages on request;  
 Voltage Tolerances : For AC -15%; +10%, For DC -5%; +10%  
 Frequency : 50 Hz , other frequencies on request; (60 Hz)  
 On request; connector with LED  
 Specify coil voltage with order

**MATERIALS IN CONTACT WITH FLUID**

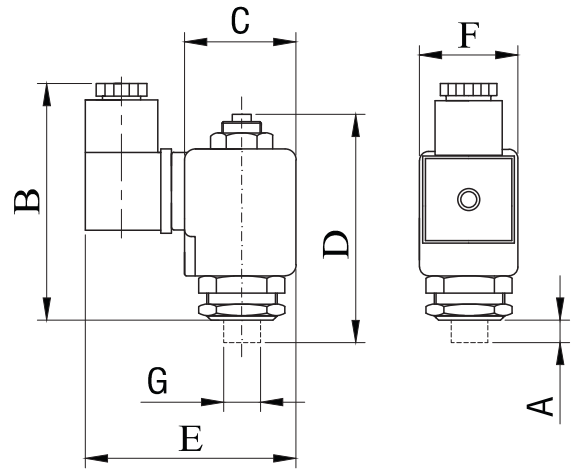
Internal Parts : Stainless Steel  
 Shading Ring : Copper  
 Core Tube : Stainless Steel  
 Springs : Stainless Steel



**S9110 (Big Magnetic Lock)**



**S9170 (Small Magnetic Lock)**



Dimensions (mm) (S9110 / S9170)

G	A	B	C	D	E	F
-	4	50	39	66.5	76	32
-	8	50	39	66.5	76	32

Valve Type / Order no	New Valve Type / Order no	Power	Stroke	Voltage	Weight
<b>T-MK1</b>	<b>S9110 / S9170</b>	<b>W</b>	<b>mm</b>	<b>V</b>	<b>(kg)</b>
T-MK 1	S9110.080	10	4 or 8	All Voltages	0.1
T-MK 2	S9170.041	5	4.1	All Voltages	0.45

**Useful Informations**

1 bar:14,5 PSI:10 mH<sub>2</sub>O:10 N/cm<sup>2</sup>:1 kg/cm<sup>2</sup>:100000 Pa , 1 PSI:69 mbar,1 m<sup>3</sup>/h:4,405 GPM:16,7 L/d 1 Gallon / minute:0,227 m<sup>3</sup>/h, 0°C:89,6 F

**GENERAL FEATURES**

- Mini dimension suits for small equipment
- Patented technology floating seal structure
- Long service life 170000-100000 circles
- Low working current, suitable for battery driving
- Manual override is safe and convenient
- IP67 Enclosure
- Housing material: ABS (PA-777D)
- On off control
- On request: 11/4", 11/2" and 2" connection
- On request 5V AC and DC
- Can be operated at zero pressure

**APPLICATION**

- HVAC
- Water treatment
- Chemical process
- Small equipment for automatic control
- Replacing solenoid valve, particularly when solenoid cannot work reliably
- For viscous and particular fluids where the solenoid valves are unacceptable
- Heating, cooling, ventilation systems
- Automation systems when small-sized valve demanded



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**Technical Parameters of Electric Actuator:**

Max Torque	Operating time	Working voltage	Max power	Enclosure	Max pressure	Medium temperature	Ambient temperature	Humidity
2 Nm	5-7S	24V AC and DC	4W	IP67	16 bar	0-100°C	-20°C	<95%
		220 V AC	5W					

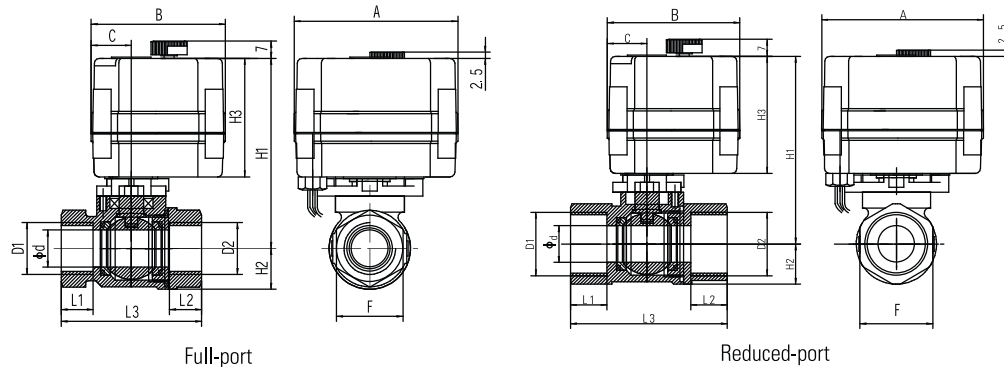
On request working voltage can be 5 V DC (3W), 12V AC/DC (4W), 110V AC (5W)

**Full port ball valve connection size (mm)**

Series	New Series	DN	D1/D2	d	L1/L2	L 3	F	A	B	C	H3	H2	H 1	W(kg)
T-RMEA.1	S9190.01	DN 8	G1/4"	8	11	43	17	66.5	54.5	16.3	48	11	74	0.26
T-RMEA.2	S9190.03	DN15	G1/2"	15	13	57	27	66.5	54.5	16.3	48	16.5	77	0.37
T-RMEA.3	S9190.04	DN20	G3/4"	20	16	70	32	66.5	54.5	16.3	48	21.5	81	0.52

**Reduced port ball valve connection size (mm)**

Series	New Series	DN	D1/D2	d	L1/L2	L 3	F	A	B	C	H3	H2	H 1	W(kg)
T-RMEA.4	S9191.03	DN15	G1/2"	15	15	64.5	30	66.5	54.5	16.3	48	16.5	77	0.37
T-RMEA.5	S9190.04	DN20	G3/4"	20	18	76	38	66.5	54.5	16.3	48	21.5	81	0.52

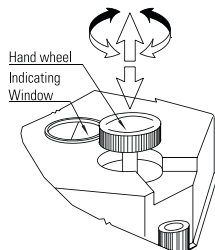


**Main components**

Parts	Material
Actuator housing	ABS
Valve body	304
Valve ball	304
Stem	304
Ball seat	PTFE
Seal	EPDM

On request body, ball and stem can be brass or 316.

Power supply range	AC/DC11 - 13V
Working current	55 ± 10 mA (DC 12V)
Static current	35 ± 10 mA
Max Power	4W
Power supply range	AC/DC18 - 24V
Working current	30 ± 10 mA (DC 24V)
Static current	25 ± 10 mA
Max Power	5W
Power supply range	AC/DC 95 - 265V
Working current	15 ± 5 mA (DC 220V)
Static current	10 ± 5 mA
Max Power	5W



**Instructions for Manual override:**

- It is only permitted to use when power is cut.
- Lift the hand-wheel, and turn it left or right until the valve is in place.
- When the black line on the indicator is horizontal, the valve is on; when vertical, the valve is off.
- Press down hand-wheel after using manual override in order to work properly when power is supplied.

**Electrical connection diagram**

