Valves, measurement and control technology

Durable and resilient

FRANK

Plastic valves

Durable and resilient

Plastic valves are essential for water treatment, environmental engineering, chemistry, the pharmaceutical and food industries and for semi-conductor manufacture.
They ensure that the flow of media is distributed in a targeted way in pipe systems. Pressure and flow are controlled and it is possible to measure operating conditions. Plastic valves are particularly durable and resistant to aggressive media.

Our multi-faceted range enables us to offer an unlimited number of solutions.
It doesn't matter whether you are looking for on/off valves, measurement valves, control valves or special valves. We can provide all the components from a single source. The service includes comprehensive advice from our team of experts.

We have the right solution for your application!

ON/OFF

On/off valves

On/off valves seal the pipe flow safely and reliably.
Valves with different operating principles, flow resistances and materials can be used depending on the application, flow rate and medium.

Ball valve

Ball valves are the simplest solution for secure shutting off. The free, circular passage in the "OPEN" position ensures that little pressure is lost. The ball enables the flow to be shut off quickly.
Our ball valves stand out because they can be connected in so many different ways. The top flange dimensions in line with DIN EN ISO 5211 make straightforward automation possible. We recommend the FRANK ball valve with relief bore for gas emitting media. Our ATEX certification in line with EU Directive 94/9/EC means that our valves can be used in areas where there is a risk of explosion with the classifications Ex II 2G IIA or Ex II 3G IIC.

Butterfly valves

Butterfly valves are short and therefore easily recognisable.
FRANK plastic butterfly valves are robust valves for extremely sophisticated applications. They are corrosion resistant and the top flange dimensions in line with DIN EN ISO 5211 make them suitable for automation even if they are already mounted. The relatively low weight also makes them easy to handle.
Our butterfly valves are available with a lever which can be locked in 5° increments or with a corrosion proof plastic gear unit.

Diaphragm valves

Diaphragm valves enable even sophisticated media to be shut off securely and controlled within a specific framework. As only the body and diaphragm are in contact with the media, diaphragm valves are extremely suitable for use with aggressive media. The design of FRANK diaphragm valves also makes them suitable for abrasive and solid-containing media. If your applications involve the use of hot, moist chlorine (for chlorine electrolysis for example), we can deliver our unique EL-PVDF diaphragm valves anywhere in the world. A travel stop mechanism is a standard feature of our diaphragm valves.

Product range

Butterfly valve	DN 40 - DN 1200	PVC, PP, PVDF, PDCPD EPDM, CSM, NBR, FKM, FKM-F	large nominal diameters, short length, low weight	corrosion proof plastic gear unit, lever with fine adjustment, up to DN 1200 PN 7.5, DIN EN ISO 5211 top flange
Diaphragm valve	DN 15 - DN 200	PVC, PP, PVDF, EL-PVDF EPDM, CSM, PTFE c.c.	aggressive media, solid-containing media, suitable for controlling under certain conditions	travel stop mechanism as standard, PVDF cushion covered, EL-PVDF for hot, moist chlorine
Ball valve	DN 10 - DN 100	PVC, PP, PVDF EPDM, FEP, FKM, FKM-F *	low pressure losses, quick closing,	ATEX certification, optional relief bore, DIN EN ISO 5211 top flange
	*other sealing materials available on request			

Controlling

Flow and pressure regulating valves

A simple control circuit is made up of an actuator, a control element and the target/actual alignment of the control variable.
EXNER valves can be matched optimally to the application involved in order to ensure precise control.

EXNER globe control valves

EXNER produced the first plastic globe control valve back in the sixties. It has been tested and proven in process engineering ever since. EXNER plastic control valves are particularly durable and resilient. We would be delighted to support you in the selection of the control valve tailored precisely to your needs with a suitable control characteristic, the perfect design of the c_v value and selection of the correct material.
Drive can be manual, pneumatic with a positioner or there may be an electrical control drive. If your valves are intended for use in areas where there is a risk of explosion, we can provide control valves with ATEX certification in accordance with EU Directive 94/9/EC for use in area Ex ll 2G llA.

Milk of lime control valves

Milk of lime control valves are ideal for applications involving abrasive media. The flow is against the seat side of the specially developed valve body from below and the medium carries out a forced rinse cycle so that no traces remain. This reduces the formation of deposits in the valve. Abrasion resistant materials reduce the amount of wear.

Product range

Exner plastic globe control valve	DN 15 - DN 100	PVC, PP, PVDF, PTFE TFM, Hastelloy EPDM, FKM, FEP
Exner milk of lime control valve	DN 15 - DN 80	Stainless steel EPDM
Pressure regulating valves	DN 10 - DN 100	PVC, PP, PVDF EPDM, FKM, PTFE

Pressure regulating valves

Pressure retaining valves are used when a constant counter pressure is required for operating processing systems. They can also be used as pressure relief valves in bypass systems.

Pressure relief valves protect plants and pipework systems against excessive pressure. The integrated overflow outlet allows installation in the main pipe.

Pressure reducing valves reduce the system pressure to a specified working pressure by exploiting the differential pressure, thereby protecting downstream devices. They also absorb fluctuations in pressure as much as possible, thereby ensuring even pressure for the downstream recipients.

Measurement

Flow and pressure measurement valves

Flow rate and pressure are key parameters in industrial measurement technology. They are basic pre-requisites for process automation.

Rotameters

Rotameters assist in the flow rate measurement for liquid and gaseous media in enclosed, vertical pipes. FRANK rotameters are burst proof and corrosion resistant. They are also radially expandable. On request we can also produce special scales for liquid and gaseous media tailored to your requirements. The measurement process can also be integrated into control processes with the assistance of solenoid floats, limit switches and measurement sensors.

Flow measurement according to the paddle wheel principle

Flow sensors, flow monitors and flow transmitters following the paddle wheel principle are used for the flow measurement of liquid media in both horizontal and vertical enclosed pipes. This type of flow measurement provides extremely precise values when the boundary conditions are clearly defined. We don't just supply valves. We also supply display and evaluation units for a wide range of purposes, including batch bottling.

Gauge guard

Gauge guards are used to measure the pressure of neutral and aggressive media. A PTFE coated diaphragm inside the housing separates the pressure sensor from the medium hermetically. The FRANK gauge guard is a low maintenance product which provides high levels of measurement precision.

Product range

Rotameters	1.5 l/h - 15 l/h 8000 l/h - 60000 l/h	PVC, PA, PSU, PVDF EPDM, FKM	straightforward application, liquid and gaseous media
Paddle wheel flow meter	0.15 m/s - 10 m/s	PVC, PP, PVDF, V4A, ECTFE, EPDM, FKM, Kalrez®	precise measurement under clearly defined boundary conditions, diverse electronic signal processing, liquid media
Gauge guard	0 bar - 10 bar	PVC, PP, PVDF PTFE	low maintenance, high measurement accuracy

Special valves

For plant manufacturing applications

Many processes require special valves in addition to standard ones. We can provide suitable solutions in these cases as well.

Strainer

Pipe systems may require strainers to protect sensitive valves and pumps from impurities and consequent damage. We offer a wide range of mesh sizes for different applications.

Check valves

Check valves prevent unintended emptying of pipes or containers. Check valves are installed immediately downstream of the pumps in order to prevent back flow. Our product range includes ball check valves, non-return valves with a free passage and wafer check valves, which can be used at low closing pressures due to the return spring mechanism.

Butterfly throttle valve

Butterfly throttle valves do not close up completely. They are used for secure conveyance of large quantities of gaseous media.
Flange connection dimensions and installation lengths can be matched to customer requirements. You can also choose between manual, pneumatic and electrical drive systems. Please contact us for advice or a quote.

Inspection glass

Pipe inspection glasses assist in the visual control of levels and flows in pipes.
FRANK inspection glasses are free of dead spaces and they are barrier free. The borosilicate glass and double seal ensure a particularly high level of safety during the transport of chemicals.

Product range

Check valves	DN 15 - DN 500	PVC, PP, PVDF, EPDM, CSM, PTFE/ FKM-F, PTFE/PFA, FKM, FKM-F
Butterfly throttle valve	DN 50 - DN 2700	PVC, PP, PPs, PVDF, PVC-GFK, PP-GFK, EPDM, FKM, PTFE
Strainer	DN 15 - DN 250 *	PVC transparent, PVC, PP, PVDF, EPDM, FKM
Inspection glass	DN 20 - DN 150 *	PVC, PP, PVDF, EPDM, FKM
* larger nominal diameters on request		

Automation

Individually matched to your processes

Pneumatic or electrical valves to control and monitor pipe systems are absolutely essential for industrial operations. The modular construction and the flexible drive elements enable customer specific automation.

Top flange dimensions in accordance with DIN EN ISO 5211 make it easy to automate valves retrospectively and individually independently of the manufacturer. The type of drive used is dependent on the available power supply and the application.

Pneumatic drives are common in process engineering plants as a compressed air network is often already present. Their high control speed is advantageous. There is a distinction between single and double-acting drives. The single-acting drives are mainly used in pipe systems where the valve has to adopt a fail-safe position induced by the system in the event of an accident.
We can supply everything from one source. This includes the modular construction of separate limit switches, solenoid valves for electronic pilot control of the actuators and also positioners.

Electrical drives can be designed for direct current or for single and three phase alternating current as preferred.
The additional functions such as limit switch and control are built into the drive. A distinction is made between the on/off actuators and control drives.

Product range

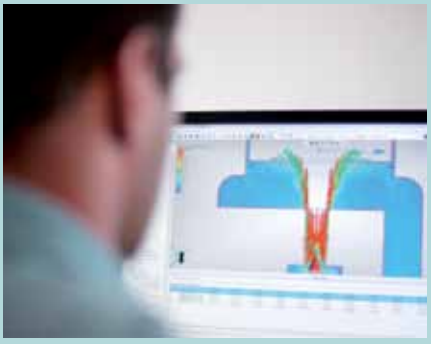
Drive/add-on parts	Standard	Additional options
Electrical drive	24 V, 230 V, 115 V , 400 V Swivel drive, rotary drive Actuator, control drive	Explosion protection applications, Battery pack/capacitors for fail-safe position
Pneumatic drive	90°/ 180° swivel drive single-acting, double-acting	all current models possible
Electro-pneumatic positioner	Sipart PS2 Samson 4763	Explosion protection applications, all current models and modules are possible
Limit switch boxes	Micro switches Proximity switches in 2 or 3 wire connection Namur proximity switches	Explosion protection applications
Solenoid valve	3/2 way and 5/2 way, NAMUR, monostable 5/2 way, NAMUR, bistable With G1/4" threaded socket, not NAMUR, monostable	Explosion protection applications
Accessories	Restrictor plate, throttle silencer, silencer, filter regulator, gauge blocks	

Use in pickling plants

On/off valves

The surface of semi-finished steel products such as wire, straps or plates is protected by pickling. Strong oxidising acids are used in the associated galvanic and chemical processes. Plastics and high-performance elastomers are essential for handling aggressive media.

Our many years of experience enable us to provide support for the planning, overhaul and maintenance of pickling plants. We will be delighted to respond to any questions you may have.



FRANK can supply all the required components such as pipes, fittings and valves for these sophisticated requirements. We use PP and PVDF as casing materials for our valves due to the high levels of chemical resistance to pickling and flushing media. We use FKM and FKM-F for the gaskets with FEP and PTFE being used in extreme cases.
We recommend our cost-effective type 57 butterfly valve for use in pickling plants. It is compact, robust and extremely resilient thanks to the elastomer gaskets made of FKM/FKM-F. The corrosion proof plastic gear unit is self-locking and continuously adjustable. It makes handling straightforward when nominal diameters are large.

Our diaphragm valves complete with PTFE diaphragm are an ideal solution when control of the media flow is required in addition to shutting off or the sealing material requirements are extremely high. A PVDF cushion cover can also be added when diffusing materials are used. The cushion cover is fitted to our PVDF diaphragm valves as standard.

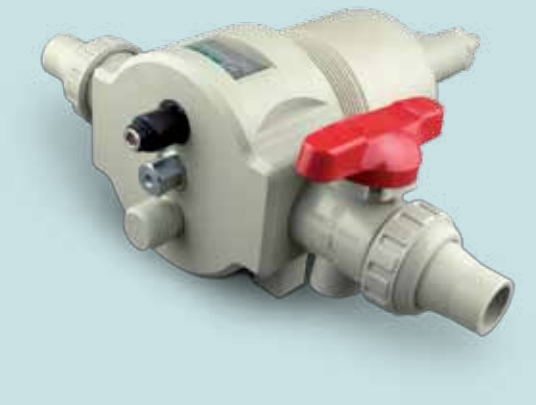

KVA

Use in waste incineration

Measuring devices

The increasing scarcity of disposal sites means waste incineration is on the rise. Large metropolitan areas can no longer cope with the ever increasing quantities of waste. Thermal waste recycling is a particularly efficient solution.

The high levels of resilience and flexibility in plastic valves mean they can be used in numerous stages of the process. They are even suitable for applications where water is chemically contaminated.
A type 57 butterfly valve or type 21 ball valve will ensure tight closing of a pipe. Precise information about the chemical and physical properties of the medium involved is of course also required. This information can be obtained visually by a type 28 inspection glass or a type M335/350 flow meter. A wide variety of sensors (for temperature and conductivity for example) are necessary in the automated variant for feeding back to a control unit. Fitting the sensors to our type 12 flow valve is a straightforward matter. All sensors are then clearly visible and fitted centrally within the system. The integrated ball valves allow the valve to be depressurised at any time.



If required, our type 12 flow valves can be equipped with measurement sensors for temperature and pH for example. We can also tailor the pipe connection to your individual specifications.

Use in chemical plants

Plastic valves for corrosive media

The proportion of plastic pipe systems in the industrial field is growing steadily. This is due to the particularly high degree of flexibility offered by these innovative materials. The various materials available allow the special properties to be used in a targeted way for the plastic valves. This guarantees efficient operation of the plant.

Plastic pipe systems have become well established for use in process and conveying pipes which contain aggressive media. Lots of acids and alkaline solutions are highly corrosive to metals. This would normally mean that expensive, high-alloyed stainless steels or titanium would be required.
With its valves FRANK offers a wide selection of casings and sealing materials which enable processes to be controlled reliably while also preventing corrosion damage. Experiences when using plastic valves speak volumes. Increases in service life and longer service and overhaul intervals prevent unnecessary downtime and save money.

We would be delighted to assist you in the appropriate choice of material for your application. Our experience with a wide range of chemicals stretches back over 50 years. This is also backed up by the profound knowledge of our experts and the innovative solutions we can offer.

EL-PVDF type 14 diaphragm valves. The alternative for chlorine electrolysis
Permanent contact with free chlorine at high temperatures (conditions which occur in chlorine electrolysis lines for example) will result in bubbling on the contact surfaces of PVDF valves after approximately two years of use. The inner surface of the valve may actually come away after use for a longer period under certain circumstances.
Our solution: The type 14 diaphragm valve made of EL-PVDF, which stands out due to a considerably longer service life than standard PVDF valves. This development was achieved following a series of modifications which result in increased operational stability as well as a longer service life.

Use in water treatment

Regulating valves for precise dosing

Many industrial processes result in waste water which is contaminated with chemicals. This waste water must undergo treatment before it can be released into the communal drainage system.

Three media are frequently called upon in this regard:

- Acids (usually sulphuric acid or hydrochloric acid)
- Alkaline solutions (normally sodium hydroxide solution)
- Flocculating agents (often $FeCl_3$ or milk of lime)

The media must be dosed with absolute precision in the water treatment process. Plastic control valves are the best option for precise dosing as they are resistant to chemical media, unlike metal control valves.
As valves made completely from plastic, our EXNER globe control valves are resistant to the chemicals used. They are cost-effective, durable and reliable.

Type C 11-K 10 pressure reducer with 1/4" threaded adapter socket and filter

100% plastic valve housing

The trim set is made of the same material as the valve housing

Use in the high purity field

PURAD pipe systems

Our PURAD pipe systems are extremely suitable for the high demands associated with conveying high purity media (UPW, HPW, PW, WFI), highly aggressive chemicals and aggressive exhaust air plus contaminated process exhaust air. They are highly pure, chemically resistant and secure.

We offer a complete programme to match every possible application. This includes pipes, fittings, valves, measurement and control technology plus special parts made of PVDF, ECTFE, PP-Pure and Polypure.
Production of the PURAD pipe systems takes place with the most up to date systems under ISO class 5 clean room conditions.

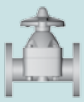
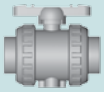
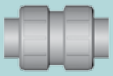
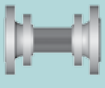
Secure connections
In addition to the high product quality of the PURAD pipe system, connection technology and installations are other important factors for secure operation of a high-purity media system. FRANK provides secure solutions for welding and pipe fitting:

- Infra-red welding (SP series)
- Butt welding
- Bead free welding (SP110-B)
- Mechanical jointing solutions:
  DIN, ANSI, JIS flange connections, clamped connections, threaded and union nut connections appropriate for high-purity media
- Pipe clip

Applications
- Semi-conductor manufacture
- Circuit board manufacture
- Pharmaceutical industry
- Biotechnology
- Beverage and food industry
- Dairies
- Pure water and ultra pure water systems

Product range
- Pipes
- Fittings
- Valves
- Measurement and control technology
- Special components tailored to the requirements of your application
- ePTFE Seal Clean flange gaskets
- Hire and sale of welding equipment
- Project support and supervision

Product overview
Industrial valves

		Type	Housing/disc materials	Gasket materials	Nominal diameter	Pressure classifications
Diaphragm valve		14, 15, 72	PVC-U, PVC-C, PP, PVDF, EL-PVDF	EPDM, CSM, PTFE/EPDM, PVDF cushion cover	DN 15 – DN 250	Up to DN 100 → PN 10 Up to DN 250 → PN 7 - PN 4
Butterfly valve		56/ 57/ 75 57L	PVC-U, PP, PVDF, PDCPD	EPDM, CSM, NBR, FKM, FKM-F	DN 40 – DN 1200	Up to DN 250 → PN 10 Up to DN 1200 → PN 7.5
Ball valve **3/2 way ball valve**		21 23	PVC-U, PVC-C, PP, PVDF	EPDM, CSM, FEP, FKM, FKM-F	DN 10 – DN 100	Up to DN 80 → PN 10/16 DN 100 → PN 10
Check valve		30/ 31/ 32	PVC-U, PVC-C, PP, PVDF	EPDM, FKM, FKM-F	DN 15 – DN 100	Up to DN 50 → PN 10 Up to DN 100 → PN 7/5
Wafer check valve		34	PVC-U, PP, PVDF	EPDM, FKM, PTFE	DN 32 – DN 500	Up to DN 250 → PN 5/6/8 Up to DN 500 → PN 3/4/5
Non-return valve		33	HI-PVC, PP, PVDF	EPDM, CSM, PTFE/FKM-F, PTFE/PFA	DN 15 - DN 200	Up to DN 80 → PN 10 Up to DN 150 → PN 7 Up to DN 200 → PN 5
Rotameter		M335/ M350/ M123	PVC, PA, PSU, PVDF	EPDM, FKM	DN 10 - DN 65	PN 10
Exner plastic globe control valve **Milk of lime control valve**		630/ 640/ 650 680	PVC-U, PP, PVDF, PTFE Stainless steel	EPDM, FKM, FEP	DN 15 - DN 100 DN 25 - DN 80	PN 6/10 PN 10
Pressure relief valve		V85/ V185	PVC-U, PP, PVDF	EPDM, PTFE	DN 10 - DN 100	Up to DN 50 → PN 10 Up to DN 80 → PN 6 Up to DN 100 → PN 4
Pressure retaining valve		V86/ V186	PVC-U, PP, PVDF	EPDM, PTFE	DN 10 - DN 100	Up to DN 50 → PN 10 Up to DN 80 → PN 6 Up to DN 100 → PN 4
Pressure reducer		V82/ V182 V782	PVC-U, PP, PVDF	EPDM, FKM, EPDM, PTFE	DN 10 - DN 100 DN 10 - DN 40	Up to DN 50 → PN 10 Up to DN 80 → PN 6 Up to DN 100 → PN 4
Strainer		51 36 37	PVC-transparent PVC-U, PP, PVDF PP, PVDF	EPDM, FKM	DN 15 - DN 100 DN 15 - DN 50 DN 65 - DN 500	PN 10/6 PN 10/16 PN 4/6/10
Butterfly throttle valve		LDK	PE, PVC-U, PP, PPs, PVDF, PVC-GFK, PP-GFK	EPDM, FKM, PTFE	DN 50 - DN 2700	PN 0.1
Inspection glass		28	PVC-U, PP, PVDF	EPDM, FKM	DN 20 - DN 150 Larger nominal diameters on request	Up to DN 50 → PN 10 Up to DN 80 → PN 7 Up to DN 100 → PN 6 Up to DN 150 → PN 5

* Flange connection in accordance with DIN EN 1092-1; ANSI 150 lbs

Further sealing materials on request

	Drive	Connection	Notes
	Manual, pneumatic, electric	Flange*, True union nut with socket, threaded connection or spigot up to DN 50	PTFE diaphragm with PVDF cushion cover Travel stop mechanism as standard EL-PVDF for hot, moist chlorine Accessories: Solenoid valve, limit switch, electro-pneumatic positioner
	Lever, gear unit with hand wheel, pneumatic, electrical	Flange*	Lockable lever with 5° increments Plastic gear unit with limit switch option DIN/ISO top flange allows straightforward, retrospective automation Type 57L lug butterfly valve up to DIN 250 PVDF as standard with FKM-F seal Accessories: Solenoid valve, limit switch
	Manual, pneumatic, electric	True union nut with flange*, socket, threaded connection or spigot	Optional ATEX certification for all versions Stem with safety function and double stem O-ring Optional relief bore With integrated holder DIN/ISO top flange allows straightforward, retrospective automation PVDF as standard with FKM-F seal Accessories: Solenoid valve, limit switch
	---	Flange*, socket, True union nut with threaded connection or spigot up to DN 50	PP housing optionally with PVC ball PVDF as standard with FKM-F seal Vertical installation position
	---	Wafer flange	Return spring made of Hastelloy-C4 or stainless steel Vertical or horizontal installation position (return spring required) Accessories: Distance ring as outlet flange adaptor
	---	Flange*	Free passage Maintenance aperture Vertical or horizontal installation position Screws available in V4A steel
	---	True union nut with socket, threaded connection or spigot	Available with solenoid float Special scales available. Can be created in line with customer requests Accessories: Limit switch or measurement sensor
	Manual, pneumatic (with positioner), electric	Flange*	ATEX certification available as an option Exchangeable trim set Milk of lime control valve with CrN coated trim set Technical support during the k_{vs} value design
	---	Spigot, flange*, True union nut with socket up to DN 50	Continuously variable pressure setting via adjustment screw Screws available in V4A steel
	---	Spigot, flange*, True union nut with socket up to DN 50	Continuously variable pressure setting via adjustment screw Screws available in V4A steel
	---	Spigot, flange*, True union nut with socket up to DN 50	V 82/182 with pressure gauge Continuously variable pressure setting via adjustment screw Screws available in V4A steel
	---	Flange*, True union nut with flange or socket	Type 51: PVC strainer insert with 0.7 mm, 0.25 mm or 0.5 mm mesh size Type 36/37: ETFE strainer insert with 2.0 mm, 0.5 mm, 1.0 mm or 1.8 mm mesh size
	Manual, pneumatic, electric	Flange*	Modular construction allows individual parts of the system to be replaced Seal tightness approx. 99.5 vol.% of cross section 99.9 vol.% on request Flange connection and installation length according to customer requirements
	---	Flange*	Inspection glass made of chemical resistant borosilicate glass Double gasket Unobstructed passage free of dead areas

FRANK

Personal. Flexible. Competent.

Plastic pipeline systems are part of our modern world. They are widely used in gas and drinking water distribution systems, cooling and heating installations, sewerage networks and many other fields. The FRANK Group has been one of the leading suppliers in the plastic pipe market for over 50 years.

We offer tried and tested plastic piping systems made in PE, PP, PVDF and ECTFE that are being optimised and improved on a continuous basis. Apart from tubes, pipes and fittings, we provide electrofusion and other joining equipment, plastic valves, semi-finished goods, geosynthetics, parts for biogas plants and components for shallow geothermal systems.

Do you have any queries? Then please do not hesitate to contact us!

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