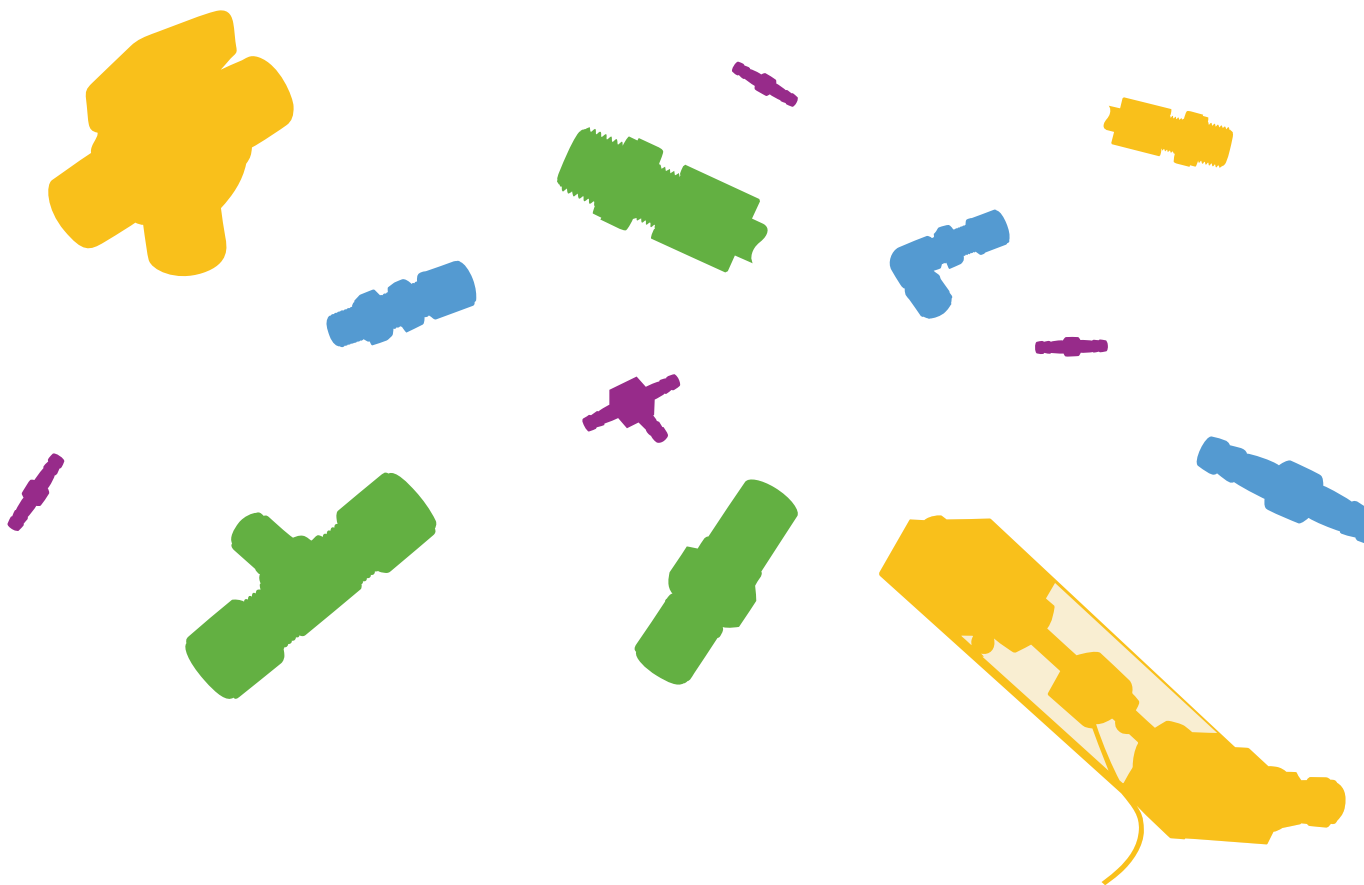


Product Overview

Connectors, Fittings, Connecting Technology

High-tech plastic products for classy solutions



EM-TECHNIK

EM-TECHNIK: Competency and top quality for your applications

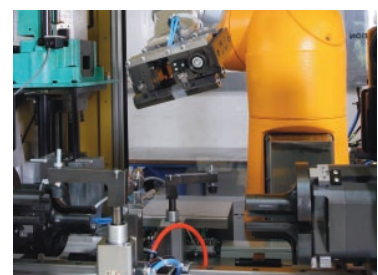
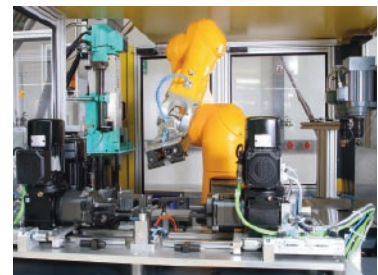
The EM-TECHNIK GROUP is a world-leading manufacturer of small high-quality fittings and connectors made of special plastics. For 40-plus years, we have established our market position by remaining faithful to our mission: to consistently develop high-quality products as seen from our customers' perspective. With this background, we have conceived a modular product range wherein all parts are compatible with each other and each part can be used in many different applications. In a nutshell, we are a one-stop solution provider for many industrial sectors and our products are precisely tailored to our customers' requirements.

Safety for the highest requirements

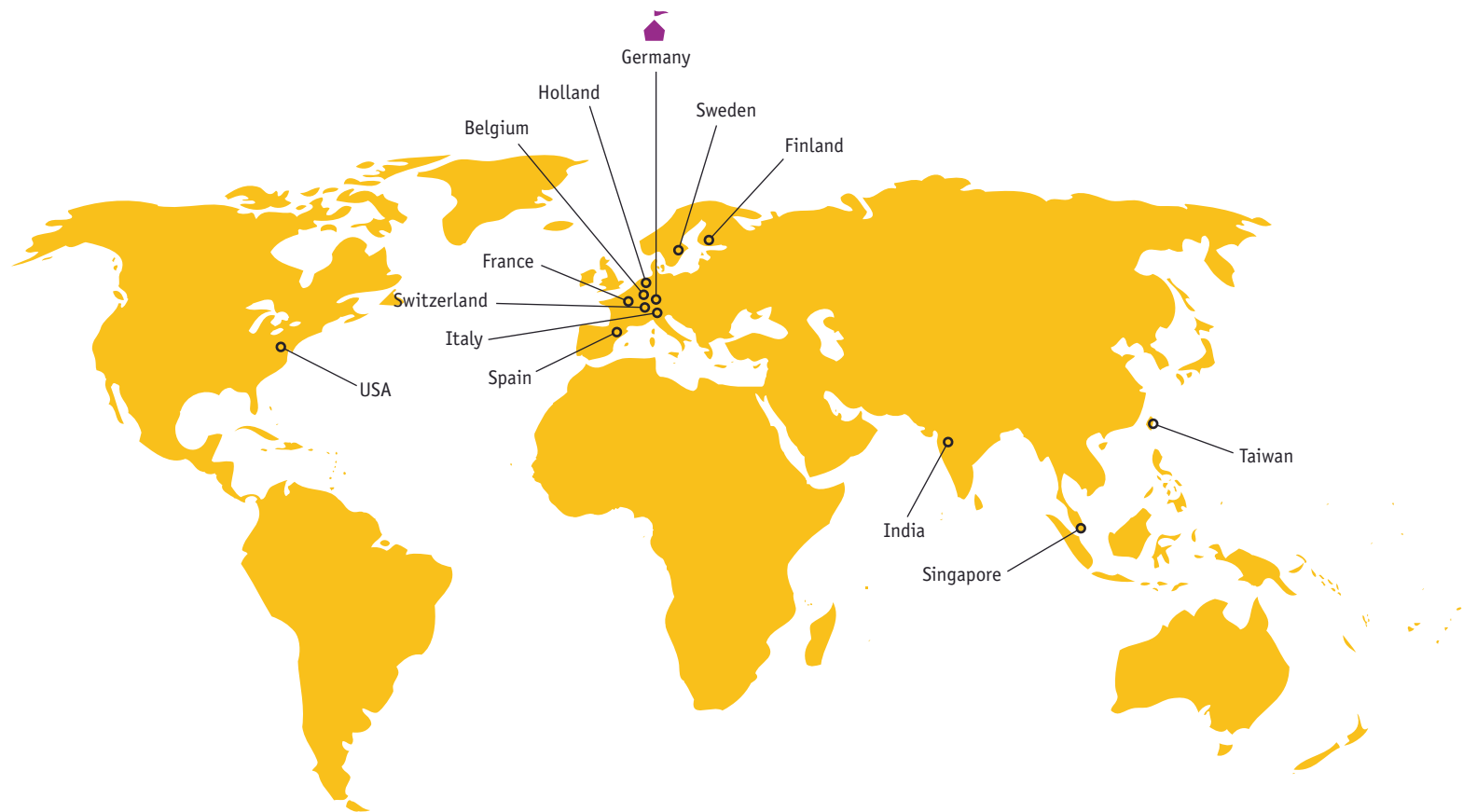
In sensitive production areas where extremely high demands are placed on safety, the high-quality products from EM-TECHNIK are your first choice. Our customers are predominantly active in high-tech, future-oriented sectors such as analytical systems, instrumentation and control, chemical industry, systems engineering, machine tool and equipment manufacture, biotechnology, ultrapure water technology and semiconductor technology. Our product development and manufacturing processes reflect the continuing progress in science and technology.

Uncompromising: high purity for clean rooms

As early as 1997, we installed an ISO class 5 clean room at our factory to provide a contamination-free atmosphere for cleaning and assembling our products. All of our products, certified to conform to the high-purity standard, undergo a carefully monitored production process at our works.



ECHNIK: We are your reliable international partner



Our focus is on your goals

To ensure that our products conform to the highest quality standards with excellent resistance and reliability characteristics even when used with aggressive media, we only use virgin plastics such as PVDF, PFA, PTFE or PP for these applications. All of these materials are heat and pressure-resistant and can be sterilised in an autoclave without difficulty.

Our tightly geared product development, manufacture and quality management processes allow us to do all of our production at our central works in Maxdorf, Germany. At the same time, we are investing increasingly in international markets. We are there where you need us. With subsidiaries in Belgium, France, Holland, India, Italy, Switzerland and Taiwan and sales representatives in Finland, Sweden, Singapore, Spain and USA, our customers profit from direct on-site consultation.

Our products have set technical standards in many

application areas. The modular conception of our product range makes them versatile for use in many different application scenarios. Where this does not suffice, we collaborate with our customers to develop precisely tailored solutions. Feel free to contact our expert development and production department to assess your particular requirements.

We are currently using the following plastics in a variety of applications: PA, PP, natural PP, PP-EL, PVDF, PVDF-HP, PVDF-EL, PTFE, PFA, PFA-HP and PEEK – most of them with FDA certification.

Please contact us for more information on our company and product range or visit our Internet presence at: www.em-technik.com

We will gladly consult with you and discuss any questions you may have.



1

Series 1 – Connectors for flexible tubes

Materials: PA, PP, natural PP, PP-EL, PVDF, PVDF-HP, PVDF-EL, PFA, PFA-HP
Nominal diameters: DN 04/06 — DN 18/20, DN 1/8"/1/4" — DN 7/8"/1"
Threads: G 1/8" — G 1", NPT 1/8" — NPT 1", M 5 — M 24 × 1.5, UNF



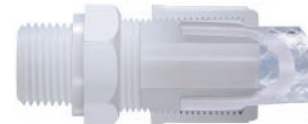
1A connection type



1C connection type



1B connection type



1D connection type



1M connection type



Depending on the materials and wall thicknesses of the flexible tubes to be connected, you can choose from the following types of connectors, all of which are also available in HP quality:

Series 1A connection type: insert the tube over the integrated connecting sleeve to form a friction-locked and leak-proof connection that can be detached at any time. By tightening the knurled nut, the clamping ring presses against the tube and fixes it in place.

Series 1B connection type: the textile-reinforced PVC tube is widened by pushing it onto the integrated connecting sleeve. The tube is fixed in place by tightening the knurled nut.

Series 1C connection type: insert the rigid tube or plastic pipe over the integrated connecting sleeve to form a friction-locked and leak-proof connection that can be detached at any time. The sealing ring

forms a seal for the connection. By tightening the knurled nut, the cutting ring presses against the tube or pipe to fix it in place.

Series 1D connection type: the tube is first expanded by applying heat (flaring) and then pushed onto the integrated connecting sleeve. The tube is fixed in place by tightening the knurled nut. The 1D connection type is free of dead volume and is available in HP quality.

Series 1M connection type: the micro-connectors are an ideal means of connecting PFA, silicon or Tygon® tubes. They consist of a threaded body with an integrated conical connecting sleeve, a knurled nut for holding the tube in place and a slotted pressure ring. The pressure ring can be omitted for PFA tubes.

Series 2 – Connectors for pipes and rigid tubes

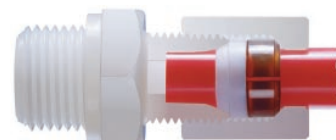
Materials: PP, natural PP, PP-EL, PVDF, PVDF-HP, PVDF-EL, PFA, PFA-HP, PTFE, PEEK

Nominal diameters: D 0.7 — D 25, D 1/8" — D 1"

Threads: G 1/8" — G 1", NPT 1/8" — NPT 1", M 10 × 1 — M 26 × 1.5, UNF



2N connection type



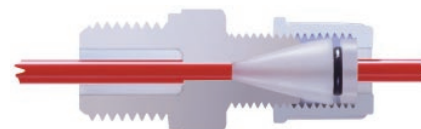
2D connection type



2M connection type



2T connection type



To connect rigid tubes and pipes with external diameters ranging from 25 to just 0.7 mm, you can utilise any of the following types of connections.

Series 2N connection type: the pipe is placed against the inner edge of the connector and a sealing ring seals off the connection. By tightening a hexagonal nut, the cutting ring presses against the pipe and holds it in place. Thus, this forms a friction-locked and leak-proof pipe connection that eliminates dead volume and does not affect the flow characteristics.

Series 2D connection type: corresponds to series 2N connection type with the difference that this is a bushing. The pipe or tube is inserted through the connector as required for bead tubes, immersion tubes, thermometers or sensors.

Series 2M connection type: specially designed for thin pipes and rigid tubes such as capillary tubes with external diameters between 0.7 and 6.35 mm. The sealing cone is pushed into the matching inner taper of the connector and acts as a bushing for the pipe while performing a sealing function. An additional o-ring guards the rigid tube and holds it in place. At the same time, the pressure disc protects the o-ring against damage.

Series 2T connection type: corresponds to series 2M with the difference that this is a bushing through which the rigid tube or pipe is inserted.

3

Series 3 – Fittings

Materials: PP, natural PP, PP-EL, PVDF, PVDF-HP, PVDF-EL, PFA, PFA-HP, PTFE, PEEK
Nominal diameters: D0.7 — D25, DN 1/8" / 1/4" — 7/8" / 1", D 1/8" — D 1"
Threads: G 1/8" — G 1 1/2", NPT 1/8" — NPT 1 1/2", M5 — M 24 x 1.5



Series 3F fittings: nipples, unions, reducers and flanges in various materials, variants, sizes and threads.

Series 3G glass thread adapters: connect laboratory-type glass cylinder with GL thread to flexible tube or G male thread.

Series 3K quick connectors: flexible tube connectors, male or female threads are combined with shut-off couplings or nipples. With a simple click, these can be connected or separated. The shut-off coupling seals the line before the coupling is disconnected and prevents media from leaking.

Series 3L Luer-Lock adapters: consists of Luer-Lock thread (DIN 13090, male/female) for typical disposable lab filters and connections with tube/pipe connector from series 1A, 2M or those with G or UNF male thread.

Series 3T barb connectors: available in various combinations of tube sleeves and threads. To secure the connection against shear forces, the tube has to be fastened to the connector using a clip or similar.

Series 3W welding adapters: for fixed connections between rigid and/or flexible tubes and pipes. These are combined with tube connectors of series 1A, 1C, 1D or threaded connectors.

Series 3C tri-clamp connectors: tri-clamp connector in accordance with DIN 32676 combined with tube/pipe connectors of series 1A, 1C, 2N or male thread.

Series 3E connectors: an inlay component with integrated tube/pipe connector or G male thread, can be connected to other fittings with G male thread (DIN 8063) using a knurled nut.

Series 4 – Flow meters

Materials: PP, PVDF, PFA, PTFE
 Nominal diameters: DN 04 — DN 10
 Threads: G 1/8" — G 1/2", NPT 1/8" — NPT 1/2"



Series 4 flow meters: for demanding flow measurement tasks; these flow meters utilise the float principle and, due to their technical properties, are suitable for precise measurements of gases and aggressive media. Made of Duran® glass and materials such as PP, PVDF, PFA or PTFE, these flow meters are well-suited and highly reliable for a range of applications.

Our Series 4 product range includes flow meters with a standard measuring tube. We also offer customised solutions with special measuring tubes for the medium, pressure, temperature, density, viscosity and measuring range requirements of your application.

5

Series 5 – Valves

Materials: PP, PVDF, PFA, PTFE
Nominal diameters: DN 04 — DN 10
Threads: G 1/8" — G 1/2", NPT 1/8" — NPT 1/2"



Our Series 5 valves are available in various special materials that are safe for use with aggressive media in a range of applications:

Series 5A shut-off valves: simply turn the spindle to reliably stop the flow of media.

Series 5H single-hand operated valves: Use one hand to open and to close the valve. Ideal for extracting samples from media lines.

Series 5L-5A control valves: these are perfectly suited to applications where the flow of gases and liquids has to be controlled by a maintenance-free component.

Series 5A fine control valves: for controlling small flow rates with high precision. Worthy of special mention is the highly precise linear flow characteristic of these valves.

Series 5R check valves: prevent return flow of media in plants or systems, or protect equipment from

blowback or backflow surges. Available with or without spring.

Series 5D pressure-keeping valves: these reduce pressure peaks by relieving pressure when setpoint is exceeded; can be installed horizontally or vertically.

Series 5A safety valves: protect control air systems by diverting backflow media and maintain system safety.

Series 5A venting valves: depending on model, these allow hazardous gases to escape, draw off aggressive media or serve as drains for manifolds.

Series 5A transmitter valves: these special valve blocks provide a safe means of connecting system lines to differential pressure transmitters.

Series 5A diaphragm valves: these serve as both a cut-off valve and a safety valve and, due to their various mounting positions, can be used for a range of applications.

Series 6 – Ball valves

Materials:

PP, natural PP, PVDF, PFA, PTFE

Nominal diameters: DN 03 — DN 15

Threads: G 1/8" — G 3/4", NPT 1/8" — NPT 1/2"



Series 6 ball valves are a tried-and-tested solution for all applications where aggressive gases and liquids have to be shut off, isolated, mixed and distributed safely and reliably.

Series 6L ball valves: as standard, these are available with a seamless female thread in various plastic materials for several types ranging from 2-way ball valves to 5-way ball valves. All models are manually operated but also available with either an electrical or pneumatic part-turn actuator. We also have 7, 9 or 11-way ball valves available as special models.

Series 6Z multiport ball valves: these models provide significant savings in plant construction since only one fitting is required. They contain two multi-way ball valves that are compactly arranged above each other in a single housing. There is no media flow connection between the two levels. The two levels are

switched using a single shaft making it possible to distribute or collect both media flows simultaneously. These units are manually operated but also available with electrical or pneumatic part-turn actuators.

Series 6T plug valves and Series 6M laboratory valves: in contrast to the ball valves, the shut-off mechanism here is a tapered plug. This fits precisely into the valve housing and is held in place using a nut. The Series 6T plug valves have no dead volume and are available in many nominal diameters and versions from simple 2-way valves to versatile 5-way valves. The compact Series 6M lab valves are available in size DN 03, G 1/8" making them highly suitable for special laboratory applications.

Series 6L and 6H mounting systems: various mounting systems are available for installing our ball valves in panel or wall mounts.

7

Materials:

Series 7 – Filters, injectors, condensate containers

PP, PVDF, PTFE, 1.4571, PVC

Nominal diameters: on request

Threads: G 1/8", G 1/4", G 3/8", G 1/2"



Series 7F filters: versatile for a range of applications, these filters are safe and simple to use, and eliminate solid contaminants from the media in use. There are four types of filters available for various applications.

Diaphragm filter: cost-effective, versatile, easy to use. Due to the design, scarcely any pressure is lost.

Cartridge filter: sight glass allows you to see degree of filter soiling from outside. This eliminates the need to open the filter housing for this purpose.

Mounted filter: this model is conceived for installations in front panel. The connections for the media tubes or pipes are located on the inside while the actual filter remains accessible from the outside. The degree of soiling in the filter can be assessed using the porthole. If necessary, it is also possible to replace the filter from the outside.

Inline filter: small, compact, cost-effective and designed for inline pipe installations. These are easy to replace during plant operation and can be retrofitted without problem.

Series 7I injectors: wearfree and robust pumps for transporting and mixing various media. A gaseous media effectively drives the injector. This media escapes at high pressure and with high speed through the nozzle. The surrounding medium is taken up or drawn in by the injected medium and can be supplied to the downstream production process.

Series 7K condensate containers: condensed liquids can be collected safely and reliably using the Series 7K condensate collectors. As standard, our condensate containers are supplied with female threads and are available in the following materials: PP, PVDF, transparent PVC or PTFE.

Series 8 – Manifolds

Materials: PA, PP, PVDF, PTFE
 Nominal diameters: on request
 Threads: on request



Series 8 manifolds: used wherever media needs to be collected or distributed. The special design makes it easy to couple multiple manifolds together. Depending on the application, the medium can be either distributed directly or shut-off as required

using appropriate fittings. Compact air manifolds with up to 28 outlets and manifolds for multi-core pneumatic cables supplement the comprehensive standard range. The Series 8 manifolds are suitable for a very wide range of specific application requirements.



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