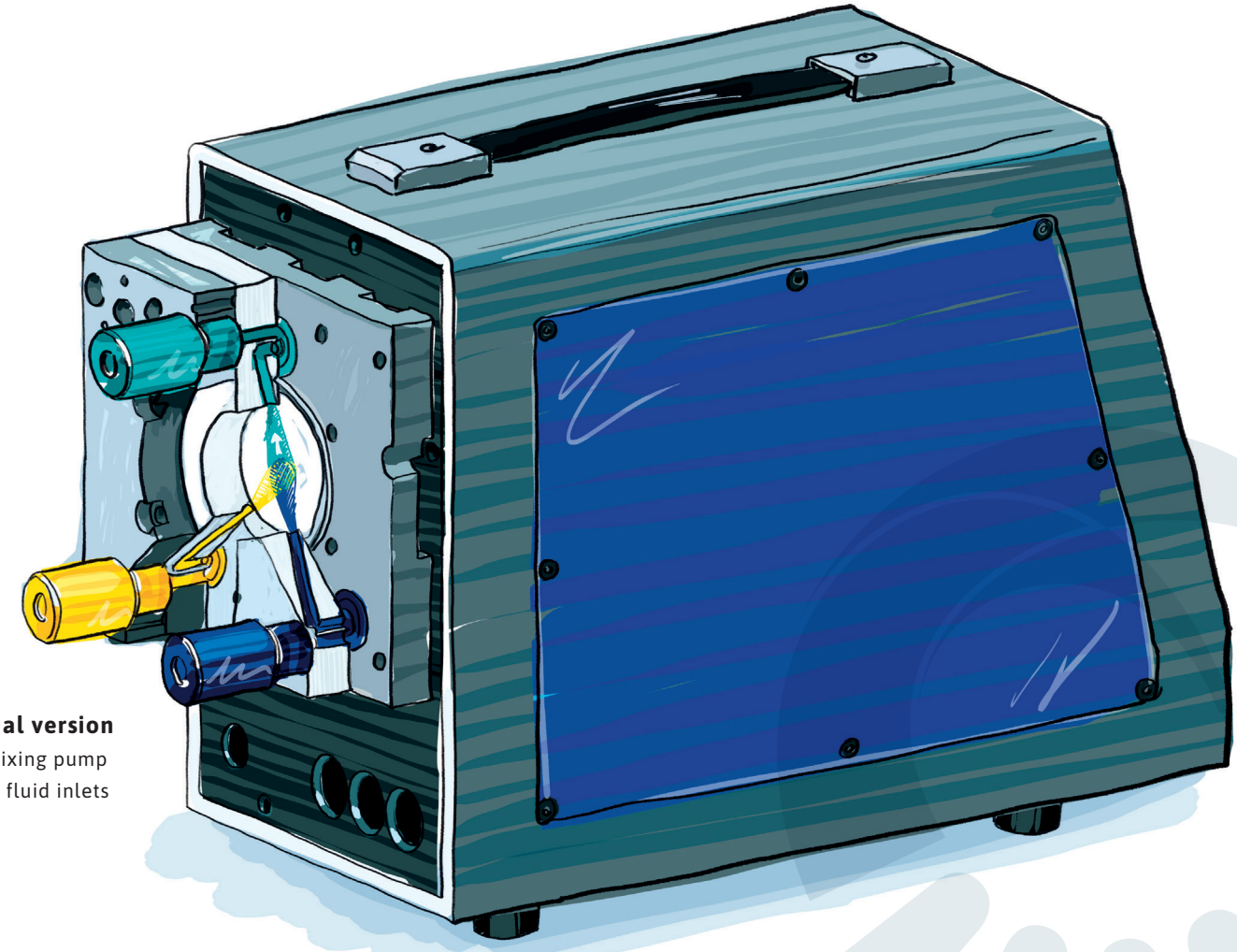
FINK
CHEM + TEC

PTFE diaphragm metering pump

liquids + gases

Ritmo R05

Smart diaphragm metering pump with wetted parts completely made of full PTFE with positively controlled valves for the highest metering requirements



Special version
R05 mixing pump
with 2 fluid inlets

- **0,003 to 900ml/min**
- **-1,0 to +4 bar**
- **-20 to +120°C**

customized configurable

MADE IN GERMANY

www.finkct.de

PTFE diaphragm metering pump

Dosing pump Ritmo®05

Ritmo®05 dosing pumps are self-priming precision dosing devices with positively controlled valve technology. Ritmo R05 differ significantly in essential details from diaphragm dosing pumps currently available on the market and the sum of these features makes them a unique dosing pump.

Material equipment

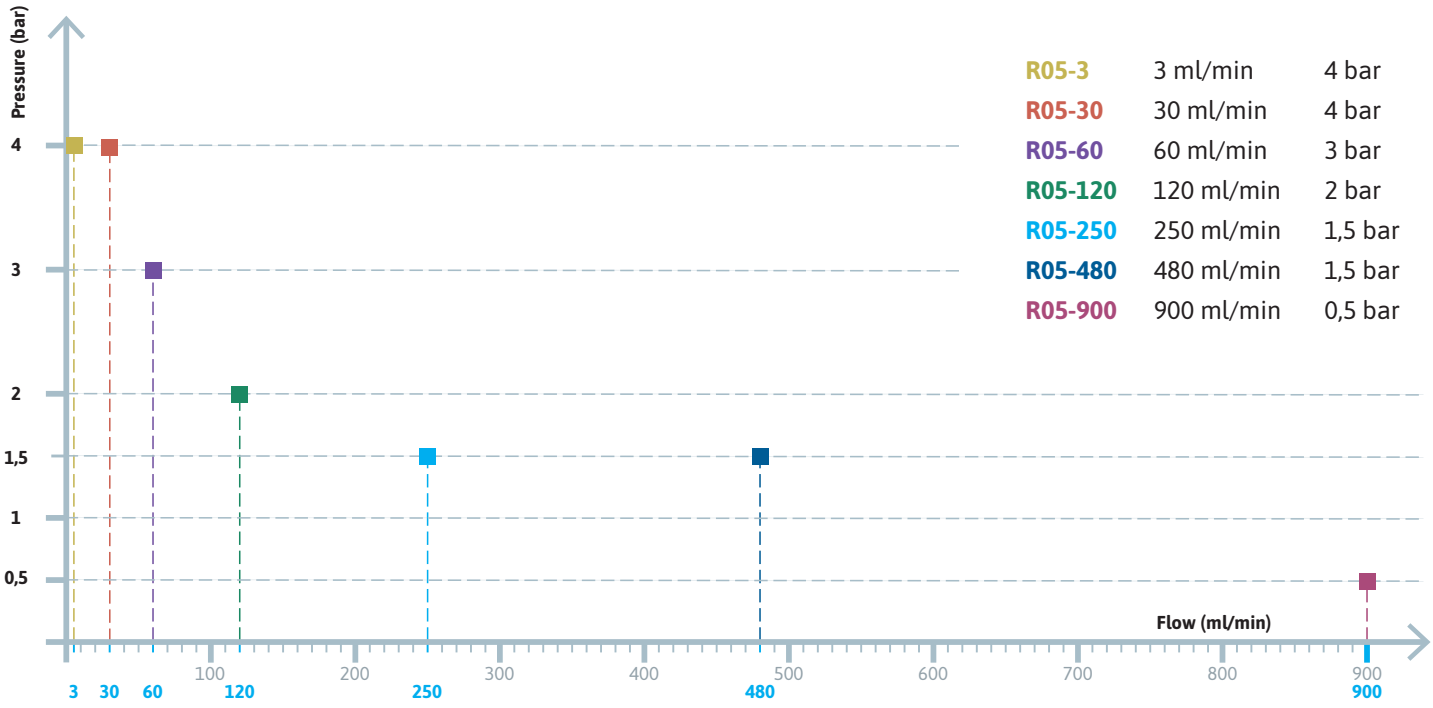
All wetted parts - valves, diaphragm, pump head and fluid fittings - are made of virgin, high-purity PTFE and thus guarantee extremely high chemical resistance. Ritmo® dosing pumps also meet the criteria of the FDA (CFR 21 Section 177-1550) and BGVO (EU Directives 10/2011; 1935/2004; 2023/2006). Since no other materials, seals or valves limit the chemical resistance, Ritmo® precision dosing devices are suitable for dosing almost all aggressive fluids and gases, acids, alkalis and solvents. They can carry out dosing tasks with the highest degree of purity and absolute metal-free down to the ppt range.

High functionality

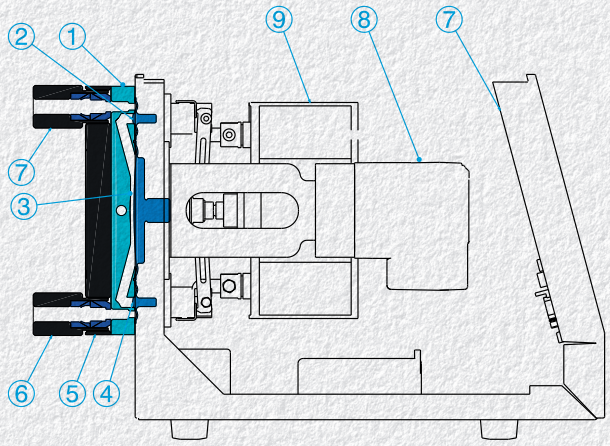
The combination of design specifics results in a previously unattainable level of flexibility and user-friendliness for a Ritmo®05 dosing pump. The dosing rate is entered directly in ml/min. The user does not need to calculate the desired dosing rate from the stroke frequency and stroke volume. The return function allows the dosing pump to pump backwards in the opposite direction back to the reservoir. The clean function allows both valves to be opened simultaneously to allow free passage. The installed pump head can be rinsed and cleaned. The max function ensures that the equipment is filled quickly from the reservoir to the reaction vessel.

Valve and drive technology

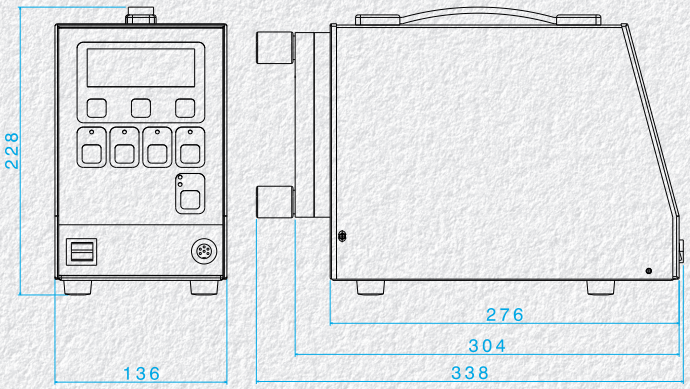
Ritmo®05 dosing pumps differ significantly from diaphragm dosing pumps with check valve technology that is usually used. R05 dosing pumps work with small valve diaphragms. These valves are opend by solenoids and ensure absolutely tight working conditions and a high vacuum capability of the dosing pump. Ritmo®05 dosing pumps are therefore completely self-priming and absolutely tight between the suction and pressure sides. They do not need to be vented, filled or protected against dry running. Ritmo®05 dosing pumps always work with the full stroke length, regardless of the desired dosing rate. The dosing is carried out exclusively via the stroke frequency with the associated discharge speed. A dosing output is therefore variable from 1.3 seconds to 30 minutes and reduces the typical pulsation of a diaphragm pump.



R05-3	3 ml/min	4 bar
R05-30	30 ml/min	4 bar
R05-60	60 ml/min	3 bar
R05-120	120 ml/min	2 bar
R05-250	250 ml/min	1,5 bar
R05-480	480 ml/min	1,5 bar
R05-900	900 ml/min	0,5 bar



1. Pump chamber (PTFE)
2. valve pressure side (PTFE)
3. diaphragm (PTFE)
4. valve suction side (PTFE)
5. pressure plate (Aluminium)
6. Fluidanschluss REA (PTFE)
7. Pump electronic
8. Diaphragm drive
9. Solenoid pressure valve



Fluid connection

Ritmo®05 are equipped with RGL fluid connections as standard. They are made of PTFE. The PTFE hoses are connected using a clamp and sealing ring. If required, the dosing pumps can also be equipped with stainless steel cutting ring screw connections. Special REA-Flex connections can also be considered for heatable dosing pumps or for vacuum dosing.

Software-Options R05

Software options can expanding the application possibilities of a standard R05 pump with adaptations to special fluid properties, system configurations and control options. Solutions for viscous or slightly boiling media are available, as are timers or batch dosing tasks.

Heating and cooling

For temperature-controlled processes, the pumps can be connected to a thermostat or cryostat. Ritmo®05 dosing pumps can also be equipped with electrical heating. Setpoint setting, control and regulation done directly on the dosing pump. The fluid temperatures required by the process can be maintained. This includes, among other things, avoiding crystallization or reducing high viscosities of a fluid or removing exothermic energy and avoiding evaporation effects during dosing.

pH measurement and control technology

Ritmo®05 pH dosing pumps are equipped with a self-learning fuzzy controller, interfaces for connecting a pH sensor (directly on the pump) and a second dosing pump for two-sided pH control, as well as software specially adapted to pH-dependent operation. In this version, the R05-pH represents a coordinated system solution consisting of pH measurement, dosing of leach and/or acidic fluids and pH control. This saves space, installation effort and costs.

Multi-channel design

Because of positivley controlled valves of the Ritmo R05 pump's, which are unique on the market, up to 4 valves can be installed on each pump. The multi-channel dosing pump with 2 pressure-side outputs can alternately carry out 2 filling processes or dosing in two parallel reactors. The investment in a second dosing pump is saved. Tasks such as reflux division or sampling under process conditions would also be possible. As well es Mixing or dilution with two suction side connectors.

ATEX

Ritmo®05 Ex dosing pumps are designed for use in potentially explosive areas of Zones 1 and 2. All liquid and gaseous media of gas class IIB can be dosed. The explosion protection design is based on the ignition protection type EEx p in accordance with EC Directive 214/34/EU. Ex II 2G Ex eb mb pxb IIb T4

CAT MIM

In addition to their extremely high chemical resistance to 98% nitric acids, the design of Ritmo®05 CAT nitric acid pumps is particularly adapted to the high safety requirements of the debinding process in the metal injection molding process (MIM). Control of the dosing pump via the associated debinding furnace including its start release after nitrogen blanketing in the debinding furnace, or feedback of working states such as diaphragm or valve position.

The Fink Chem+Tec GmbH ...

... is a medium-sized company, founded in 1996 as a sole proprietorship. In our two locatoins Leinfelden-Echterdingen and Papenburg, we develop specialized dosing, laboratory and mixing pumps e.g. for the chemical and pharmaceutical industries.

At our headquarters in L.-Echterdingen we take care of the dosing technology, from our high-precision PTFE Dosing pumps down to temperature, flow and ph controllers.

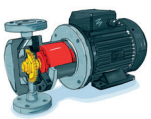
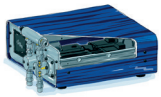
We develop and manufacture at the Papenburg location customer-specific feed pumps with magnetic coupling. Through the process-optimized design of the pumps and the selection of special materials the pumps always operate at the respective operating point configured for the customer-specific application.

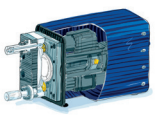
Both regnerative turbine pumps for liquids, multi-phase reaction mixing pumps and gas circulation pumps we offer on a small scale up to industrial applications, especially in high-pressure or high temperature design we have a very specialized field of activity.

Technical parameters

Characteristic	R05-3	R05-30	R05-60	R05-120	R05-250	R05-480	R05-900
Max. flow rate [ml/min]	3	30	60	120	250	480	900
Min. flow rate [ml/min] (inclding Stroke adjustment)	0,003	0,03	0,06	0,12	0,25	0,48	0,9
Stroke volume [ml]	0,095	0,6	1,25	2,6	4,8	9,4	19
Max. stroke frequency [strokes/min]	35	50					
Filling time [sek]	ca. 0,7						
Max. dosing time [min] (single stroke)	ca. 30						
Max. pressure [bar] (suction and pressure sides)	4	4	3	2	1,5	1,0	0,5
Max. vacuum [mbar abs.] (suction and pressure sides)	1						
Max. viscosity [mpas] (using anti-cavitation mode)	200	400	600	800	800	800	800
Max. temperature dosing media [°C]	120 / 150 (Special version)						
absolute deviation	< 1%						
relative deviation (reproducibility)	< 0,5%						
Material wetted parts	PTFE						
Power supply	80-264VAC (47-63Hz)						
Power consumption [W]	30 (electrical heated 125-800)						
IP protection class	30 (electrical heated 125-800)						
ambient temperature [°C]	50						
dimensions LxWxH [mm]	270x130x205						
weight [kg]	5,5						

Pumps tailored precisely to your needs

FINK CHEM + TEC

Fink Chem+Tec GmbH
Gutenbergstr. 4
D-70771 Echterdingen

Tel.: +49 711 400 423-0
info@finkct.de
www.finkct.de