

General

Rekos pumps can be supplied as simplex piston metering pumps type KR and duplex piston metering pumps type ZKR.

Advantages of piston metering pumps are: minor dependency on back pressure and linear flow variation as a function of the stroke length.


The metering pumps are therefore very suitable for proportional metering where the stroke length is adjusted by means of a remote control signal.

Standard versions have the metering head on the left-hand side.

Type KR...L (Symbol )

Upon request metering pumps are available with the metering head on the right-hand side.

Type KR...R (Symbol )

For duplex metering pumps, the heads may be combined as listed in the below tables. Depending on the head size they are arranged in parallel (Symbol )

or diagonally (Symbol )
Type code ZKR.../...

Metering head

Metering heads are supplied in plastic for max. 10 bar and in stainless steel for up to 200 bar.

The correct choice of the metering heads depends on the aggressivity of the chemical, its temperature and viscosity, and on the system pressure. Environmental factors (harsh operating conditions, radiant heat) must also be considered.

Suction and discharge valves

Suction and discharge valves can be supplied as double-ball valves, spring-loaded single-ball valves or disk valves, depending on the size. Spring-loaded valves are recommended if the viscosity of the chemical exceeds 400 mPas.



Flushing attachment

Metering heads are generally fitted with a flushing attachment.

Flushing water should be applied if the chemical being used is very **aggressive**, to prevent damage by corrosion from leakage that is bound to occur.

If the medium used is **abrasive**, the flushing water is intended to prevent the piston and packing from failing after only a short time of operation as a result of intensified leakage. The flushing water pressure should, in this case, be greater than that of the medium.

Technical data

REKOS KR		8	20	30	40	75	125	180	295	420	725
Max. pressure [bar]	Plastic	10									
	SS	200	190	130	95	50	30	20	12	10	5
Output at [l/h]		9	20	31	40	75	125	180	295	420	725
max. pressure [ml/stroke]		1.5	3.4	5.3	6.8	12.5	21.2	30.5	50	71.3	122
Piston ø [mm]		8	12	15	17	23	30	36	46	55	72
Stroke frequency [1/min]		100									
Suction lift [mbar]		120									
Motor output [kW]		0.55 kW (0.75 kW with frequency converter)									
Weight [kg]	Metering head	Plastic	2				3				4
		SS	7				10				15
	Simplex gear	manual	25				26				27
		ATE/ATP	37				38				39
	Duplex gear	manual	32				34				36
ATE/ATP		49				51				53	

Max. supply pressure (Σ static + dynamic): 500 mbar

Abrasive media

Piston packings can be supplied as PTFE net packings or Aramid-kevlar packings. PTFE packings with the edges reinforced with Aramid are also available.

The standard PTFE packing can be used with practically all chemicals at a pressure of up to 40 bar. Higher pressures may increase leakage.

As far as abrasive media are concerned, and in the case of pressures much higher than 40 bar, it may be advisable to use Aramid-kevlar packings, if the chemical allows it. Aramid-kevlar is **not** resistant to concentrated acids or alkalis. If these substances are to be metered at higher pressures, the user should revert to the edge-reinforced PTFE packing, despite the intensified leakage that will occur, and apply flushing.

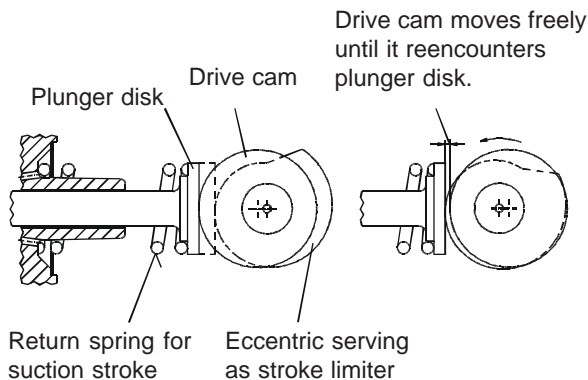
Piston-diaphragm system KMS

Three sizes of piston-diaphragm metering heads are also available. Their use is recommended where, despite higher pressures, it is important to avoid leakage due to a toxic, aggressive or abrasive chemical being used.

Piston-diaphragm metering heads are separated from the transmission lubricant, and have their own hydraulic system (glycerine).

Piston-diaphragm metering heads can also be retrofitted to piston metering pumps already installed (see MB 1 40 01).

Functional diagram



Drive

The drive is an oil-filled worm gear with a single-state down mechanism. The stroke is created by means of a drive cam moving back and forth a spring-loaded plunger to which the piston is fixed. The metering stroke is induced by the thrust of the drive cam, the suction stroke by the return spring. Length of stroke is determined by means of a plunger return stop, with a manually adjustable eccentric serving as a stroke limiter.

The stroke length, which determines the flow rate, can be adjusted manually during operation in a range of between 0 and 100%.

The standard version is equipped with a manual adjustment. Electrical (ATE) remote control adjustment equipment can be supplied on request.

The drive motor is normally a three-phase motor. Controllable a.c. motors and explosion-proof motors can also be supplied.

Through the combination of a controllable drive motor and a remotely controllable stroke length adjuster, the metering pump is provided with two independent means of adjustment control so that disturbance-variable feed-forwarding is possible in automatic control systems.

Optional components

Stroke counting

The metering pump can, on request, be equipped with an inductive scanning head for the eccentric shaft in order to count the number of strokes for batch processes.

Metering head heating

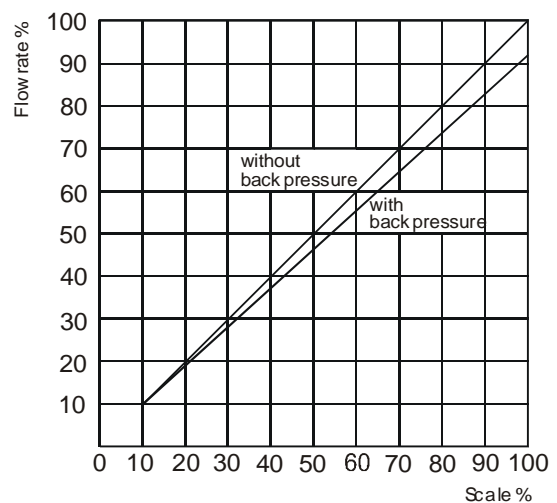
For fluids which are solid when cold the metering head can be fitted with warm water, steam or electrical heating.

Thyristor controller

For controlling the direct current drive. (See MB 4 20 01)

For other accessories - see "Installation example".

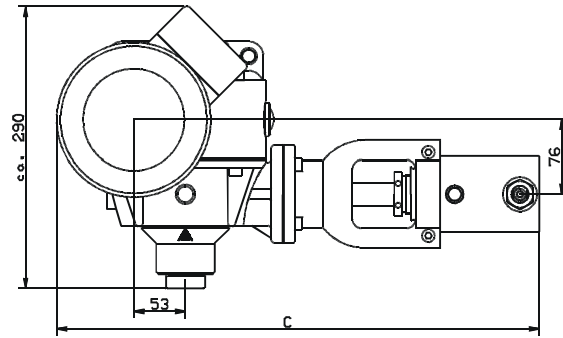
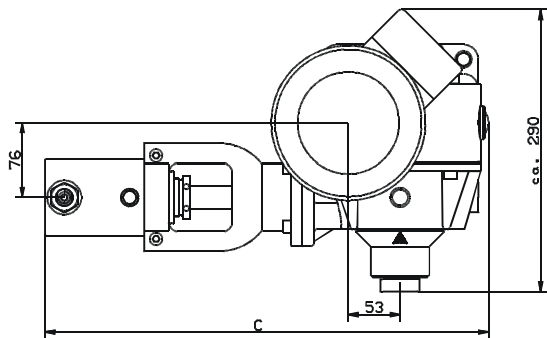
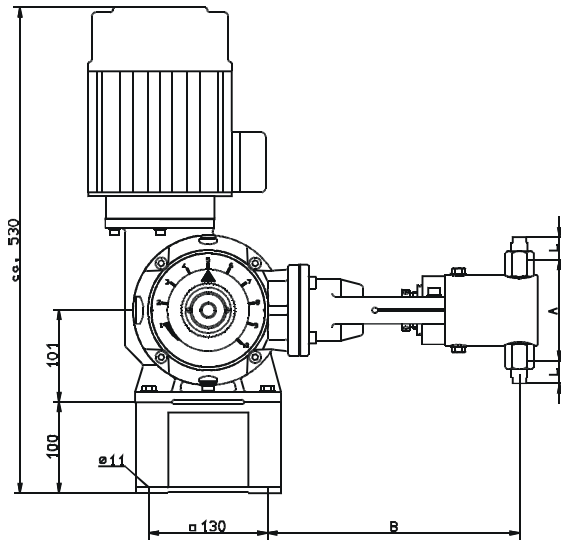
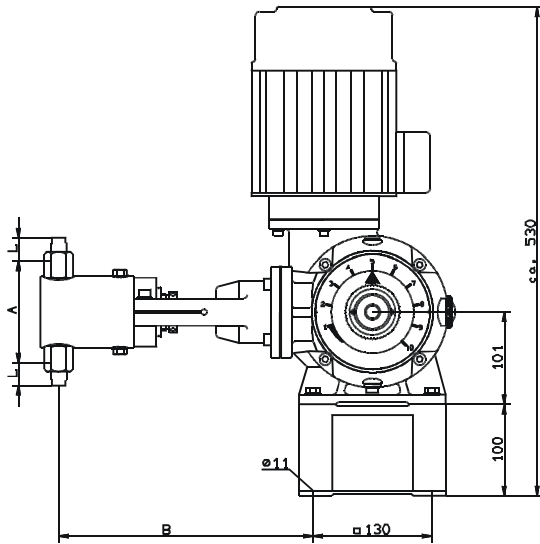
Performance curves



Simplex pumps

Left-hand version

Right-hand version



KR 8 L . . . KR 725 L

KR 8 R . . . KR 725 R

Piston Metering Pump REKOS KR