Injection Fittings I-R-A-F

General
Injection fittings are used to inject the chemical delivered by the metering pump into the system to be treated.

Injection Pipe
The injection pipe (I) allows the metering chemical to be injected into the centre of the piping system, to ensure uniform mixing.

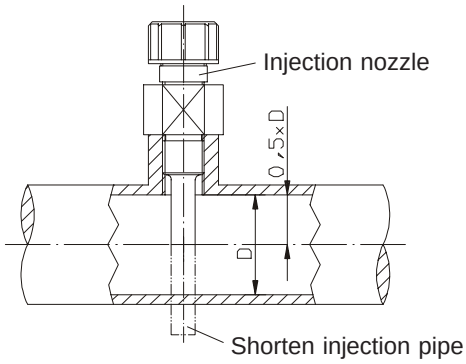
Non-Return Valve
The non-return valve (R) prevents liquid from flowing backward from the system under pressure into the metering plant or metering tank. All sizes are available in the form of a single-ball non-return valve with an opening pressure of approx. 0.1 bar. Special types with an opening pressure of approx. 1.2 bar are also available.

Shutoff Valve
A shut-off valve (A) allows to separate the metering installation, including the non-return valve, from the plant under pressure. Due to the shut-off valve the non-return valve can be maintained after being separated from the system. Prior to longer periods of standstill it should be closed since the sealing of the non-return valve may be affected by dirt particles or wear.

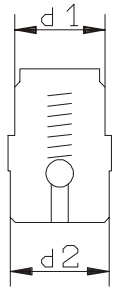
Cooling Pipe
In mixed assemblies, where the metering plant fittings and pipes are of plastic and the plant itself is of steel or other metals, because the liquid temperatures are higher, a cooling pipe (K) can be used to radiate the heat. This allows plastic fittings and pipes to be connected to the plant.

Connections
The transition from the injection fitting to the metering pipe can be made in various ways, using the connections listed on MB 1 23 01 / 4. The individual elements described before are available in functional combinations and have appropriate type codes for indentification.

Selection Criteria
The determining factors for selecting the appropriate injection fitting are the chemical flow, the chemical resistance and the heat resistance. PVC injection fittings may be used for temperatures of up to 40°C; other types up to 80°C; and with a cooling pipe up to 120°C.
PVC-version: p_{max} = 10 bar
Stainless steel version:
Normal version: p_{max} = 40 bar

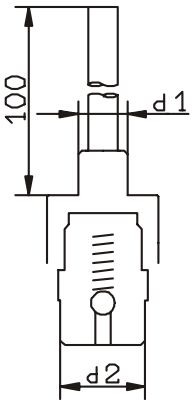


Type R (Non-Return Valve)



DN	l/h*	d1	d2	PVC		1.4571		
				Viton	Hypalon	PTFE	AF/ Viton	Hypalon
4	70	G 1/2	G 5/8	12325087	12335092	12326920	-	-
6	150	G 3/4	G 1	12325694	12326859	-	12326860	-
10	400	G 1 1/4	G 1 1/4	12325707	12326845	-	12329696	-
15	900	G 1	G 1 1/4	12325719	12326861	-	-	12326862
25	2600	G 1 1/2	G 1 1/2	12325732	12326863	-	-	12626864

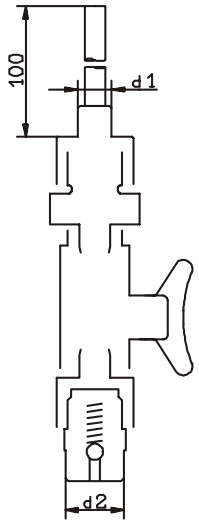
Type IR (Injection Fitting with Non-Return Valve)



DN	l/h*	d1	d2	PVC		1.4571		
				Viton	Hypalon	PTFE	AF/ Viton	Hypalon
4	70	G 1/4	G 5/8	12325744	12335299	12326924	-	-
		G 1/2		12325692	12334942	12326925	-	-
		G 3/4		12325747	12335300	12326926	-	-
6	150	G 1/2	G 1	12325779	12326865	-	12326868	-
		G 3/4		12325703	12326866	-	12326869	-
		G 1		12325780	12326867	-	12326870	-
10	400	G 1	G 1 1/4	12325792	12326877	-	12326880	-
		G 1 1/4		12325711	12326878	-	12326881	-
		G 1 1/2		12325793	12326879	-	12326882	-
15	900	G 1	G 1 1/4	12325883	12326891	-	-	12326894
		G 1 1/2		12325814	12326892	-	-	12326895
		G 2		12325723	12326893	-	-	12326896
25	2600	G 1 1/2	G 1 1/2	12325880	12326907	-	-	12326909
		G 2		12325737	12326908	-	-	12326910

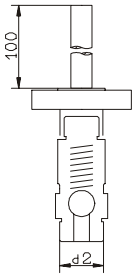
* Flow values only valid with uniform flow. Without pulsation dampener the max. flow rate for motor pumps amounts to 1/3 and for solenoid pumps to 1/5 of the indicated value.

Type IRA (Injection Fitting with Non-Return Valve and Shutoff Valve)



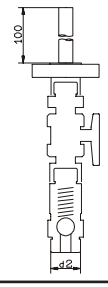
DN	l/h*	d1	d2	PVC		1.4571		
				Viton	Hypalon	PTFE	AF/ Viton	Hypalon
4	70	G 1/4	G 5/8	12325748	12335301	12326930	-	-
		G 1/2		12325691	12335302	12326931	-	-
		G 3/4		12325749	12335303	12326932	-	-
6	150	G 1/2	G 1	12325781	12326871	-	12326874	-
		G 3/4		12325704	12326872	-	12326875	-
		G 1		12325782	12326873	-	12326876	-
10	400	G 1	G 1 1/4	12325794	12326883	-	12326886	-
		G 1 1/4		12325714	12326884	-	12326887	-
		G 1 1/2		12325795	12326885	-	12326888	-
15	900	G 1	G 1 1/4	12325882	12326897	-	-	12326900
		G 1 1/2		12325815	12326898	-	-	12326901
		G 2		12325726	12326899	-	-	12326902
25	2600	G 1 1/2	G 1 1/2	12325876	12326911	-	-	12326913
		G 2		12325741	12326912	-	-	12326914

Type IRF (Injection Fitting with Non-Return Valve and Flange Connection)



DN	l/h*	d2	PVC		1.4571
			Viton	Hypalon	Hypalon
10	400	G 1 1/4	-	12327742	-
15	900	G 1 1/4	12325966	12326903	12326904
25	2600	G 1 1/2	12325969	12326915	12326916

Type IRAF (Injection Fitting with Non-Return Valve, Shutoff Valve and Flange Connection)



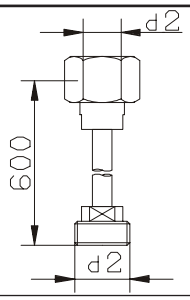
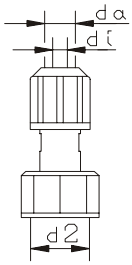
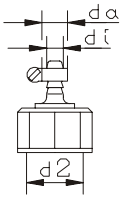
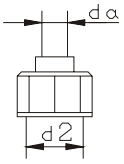
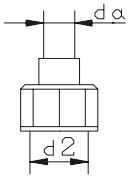
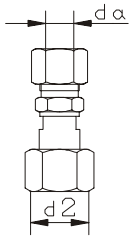
DN	l/h	d2	PVC		1.4571	
			Viton	Hypalon	AF/ Viton	Hypalon
10	400	G 1 1/4	12326313	12326889	12326890	-
15	900	G 1 1/4	12325967	12326905	-	12326906
25	2600	G 1 1/2	12325971	12326917	-	12326918

* Flow values only valid with uniform flow. Without pulsation dampener the max. flow rate for motor pumps amounts to 1/3 and for solenoid pumps to 1/5 of the indicated value.

Order Example:

An injection fitting with shutoff valve is required to be used with a MINIDOS A 24, for phosphate metering into a potable water pipe (max. 10 bar). A connection sleeve with G 1/2 is available.Supply line: tubing id=4; od=6. From the IRA table on this page, size DN 4 up to 50 l/h, with d_1=G 1/2 is chosen. PVC version, type IRA, consisting of injection pipe, shutoff valve and non-return valve. Part Number 12325691. From table Cooling Pipe (K) and Connections on MB 1 23 01 / 4, for a 4/6 tubing, the connection, Part Number 20975 is selected.

Cooling Pipe (K) and Connections

	DN	d2	di/da	da	PVC	1.4571
Cooling pipe 	4	G 5/8	-	-	-	25849
	6	G 1	-	-	-	25853
	10	G 1 1/4	-	-	-	25892
	15		-	-	-	25893
	25	G 1 1/2	-	-	-	25903
Tubing connection 	4	G 5/8	4/6	-	20975	-
			6/8	-	25176	-
			6/12	-	19180	-
	6	G 1	6/12	-	25902	-
Hose liner 	4	G 5/8	6/12	-	23092	23093
	6	G 1	6/12	-	25908	25909
			9/15	-	32470	-
	10	G 1 1/4	9/15	-	25921	25925
	15		16/26	-	25936	25935
	25	G 1 1/2	25/34	-	25947	25949
PVC cemented connection 	4	G 5/8	-	10	23087	-
			-	12	23089	-
	6	G 1	-	10	25911	-
			-	12	22137	-
	10	G 1 1/4	-	12	25923	-
	15		-	20	25937	-
	25	G 1 1/2	-	32	25950	-
Threaded connection 	4	G 5/8	-	G 1/4	23088	22999
	6	G 1	-	G 1/4	27259	25914
			-	G 3/8	25915	31096
	10	G 1 1/4	-	G 3/8	25930	27037
	15		-	G 1/2	25943	25944
	25	G 1 1/2	-	G 3/4	-	25953
			-	G 1	-	27036
Stainless steel piping connection 	4	G 5/8	-	6	-	24959
			-	10	-	23090
	6	G 1	-	8	-	25913
	10	G 1 1/4	-	12	-	27039
	15		-	18	-	25939
	25	G 1 1/2	-	22	-	25952
			-	28	-	27035