

## MAZZEI® INJECTORS

### PP (polypropylene) or PVDF (kynar) body

Highly efficient in the injection of liquids and gas by pressure difference.

The Mazzei injectors offer a safe, precise and economic method to inject practically any kind of liquid or gas into a pressurised current.

### Operation

- When a fluid under pressure enters the injector it is channelled towards the injection chamber, and sharply increases speed.  
This acceleration causes a drop in pressure that allows another liquid or gas to be sucked through a special orifice and be mixed with the drive flow.
- When the drive flow advances towards the injector outlet, its speed reduces, creating an increase in pressure (at a lower level than at the injector inlet).

The Mazzei injectors require a negligible pressure difference between inlet and outlet to create a feed through the suction orifice.

### Advantage

- Low investment and installation cost
- No external power source is required in most installations
- Low maintenance costs
- Suitable for continuous mixing, without requiring additional equipment.

### Why Kynar™

- Because Kynar (PVDF) is more than twice as good as most other plastic
- Strength, pressure (15 bar), chemical & temperature resistance range are greater
- Extremely resistant to most AG chemicals:
  - Sulfuric acid 90%, good to 100° C (PP, PE., Acetal are not recommended)
  - Nitric Acid 65%, good to 60° c. (PP, PE. not recommended)
  - (PP, PE. resistant up to 6% at 20° C to 40° C)
  - Chlorine (PP not resistant)
  - Xylene, good to 40° C (PP, PE, PVC. not resistant).



**AIV 287-P**  
**AIV 287 (Kynar)**

Built in non-return valve.  
Body in polypropylene or Kynar.  
*Connection: 1/0 1/2" M NPT*  
*Suction: 4.7 mm socket*

**AIC484**  
**AIC 484-X**  
**AIC584**  
**AIC584-PPG**

Built in non-return valve.  
Body in polypropylene or Kynar.  
*Connection: 1/0 3/4" M BSP*  
*Suction: 1/4" M NPT and 6.3 mm socket*

**AIC885X**  
**AIC885X-PPG**  
**AIC1078**  
**AIC1078-PPG**

Pre-assembled non-return valve ACP83.  
Body in polypropylene or Kynar.  
*Connection: 1 1/2" M BSP*  
*Suction: 1/2" M NPT and 9.5 mm socket*

**AIC1583**  
**AIC1583-PPG**

Built in non-return valve.  
Body in polypropylene or Kynar.  
*Connection: 1/0 1" 1/2 M*  
*Suction: 1/2" M NPT and 12 mm socket.*



**AIC2081-X**  
**AIC2081-PPG**

Pre-assembled non-return valve ACP86.  
Body in Kynar or polypropylene (Kynar model) and C75 (PP model).  
*Connection: 1/0 2" M BSP*  
*Suction: 1/2" M NPT and 12 mm socket*



**AIC4090**

Built in non-return valve.  
Body in Kynar.  
*Connection: 1/0 4" M BSP*  
*Suction (two): 2" M BSP*

Codes ending "-p" or "-ppg" are made of polypropylene

## Data required for selecting injectors

To select the most suitable injector model the following data is required:

1. Total water flow rate of the system ..... (l/min)
2. Desired fertiliser/chemical product injection flow rate ..... (l/min)
3. Pressure differential "d" available in the system, calculated as follows:
  - a. maximum working pressure of system, at injector inlet ..... bar
  - b. minimum working pressure of system, at injector outlet ..... bar
  - c. difference between pressures "a" and "b" ..... bar

Percentage pressure differential "d" = (c/a) x 100 ..... %

If "d" is equal or more than 20%, the By Pass installation method can be used (see diagram 1+2)

If "d" is less than 20% then the injectors have to be installed in series with an auxiliary pump (see diagrams)

*Example: 1=250 l/min; 2=341 l/h; a= 5.5 bar; b= 4 bar; c= 1.5 bar. Therefore "d" = 27%. This means that we can use a By Pass installation, there is no need for a booster pump.*

## Installation diagrams

Diagram 1

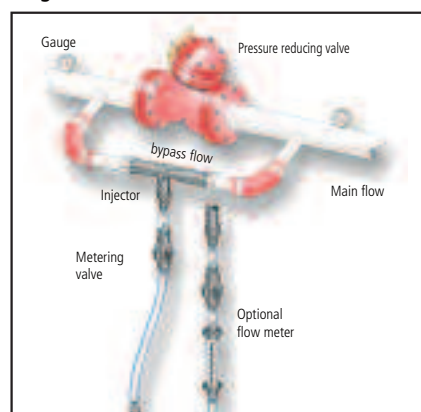


Diagram 2

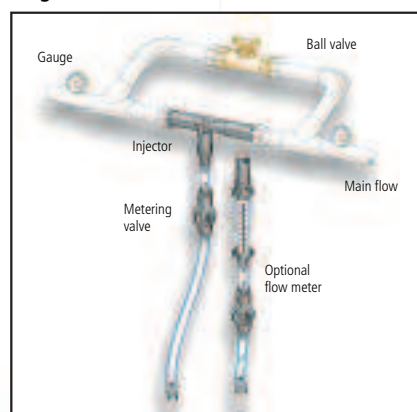
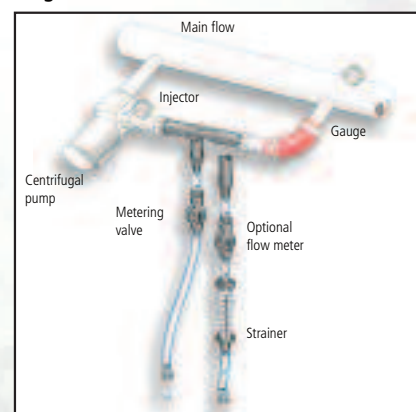


Diagram 3



## Selecting the right model

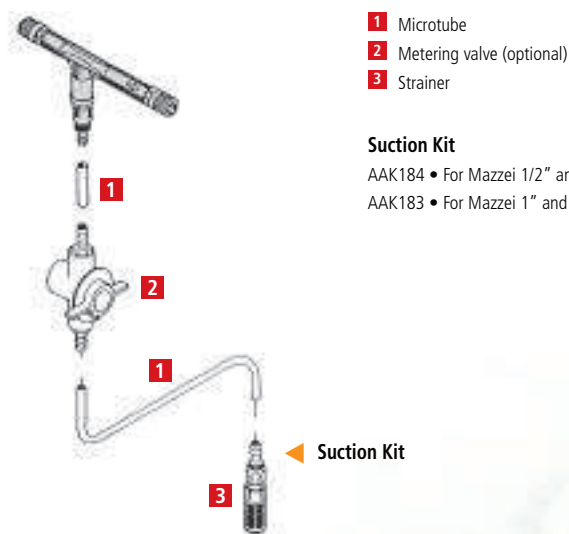
Following the example given above, proceed as follows:

- Find the pressure column with "a" = 5.5 bar.
- Move to the right until "b" = 4 bar
- Move to the right along the line to the suction capacity column, continue right until the nearest value to the desired suction capacity is found (using the example, 341/h). We will select 30 "l/h. the top of this column shows the code of the model to use, in this case AIC584.

Model AIC584 will be capable of sucking 30 l/h only if the by-pass is guaranteed a flow rate of 28 Vmin as indicated in the "Injector flow rate".

If, in practise, the injector does not really have this flow rate, the suction capacity will not meet the data given.

## Assembly diagram



# FERTIGATION

## MAZZEI® INJECTOR

Performance chart

Pressure		AIC 287 1/2"		AIC 484-X 3/4"		AIC 484 3/4"		AIC 584 3/4"		AIC 1078 1"		AIC 1583 1 1/2"		AIC 2081 2"	
a	b	Injector Flow rate l/min	Suction Flow rate l/min	Injector Flow rate l/min	Suction Flow rate l/min	Injector Flow rate l/min	Suction Flow rate l/min	Injector Flow rate l/min	Suction Flow rate l/min	Injector Flow rate l/min	Suction Flow rate l/min	Injector Flow rate l/min	Suction Flow rate l/min	Injector Flow rate l/min	Suction Flow rate l/min
0,35	0	1,10	0,33	4,50	1,48	4,50	0,92	7,91	1,84	20,74	6,40	40,60	8,57	122,60	39,70
	0,07		0,16		1,05		0,66		1,82		2,93		5,33		39,70
	0,14		0,11		0,75		0,42		1,80		1,40		3,36		39,70
	0,21		0,08		0,46		0,06		1,60		0,17		-		13,50
	0,28		-		-		-		0,63		-		-		8,60
	-		-		-		-		-		-		-		-
0,70	0	1,21	0,39	6,40	1,88	6,40	1,18	11,20	1,78	29,30	6,67	57,40	13,87	173,40	39,70
	0,14		0,30		1,46		0,88		1,78		4,78		9,07		39,70
	0,35		0,12		0,75		0,38		1,73		2,64		4,97		29,50
	0,49		0,05		0,24		0,18		0,84		1,21		2,65		9,40
	0,56		-		-		-		0,69		0,28		-		1,90
	-		-		-		-		-		-		-		-
1,05	0	1,59	0,43	7,83	2,44	7,83	1,18	13,70	1,78	35,88	6,39	70,30	14,21	212,30	39,80
	0,35		0,26		1,32		0,72		1,76		5,04		10,33		39,30
	0,49		0,18		0,99		0,52		1,77		4,08		7,85		36,40
	0,70		0,08		-		0,06		0,88		2,16		5,46		13,40
	0,84		-		-		-		0,70		1,07		0,92		4,80
	-		-		-		-		-		-		-		-
1,41	0	1,93	0,44	9,01	2,49	9,01	1,14	15,82	1,57	41,45	6,20	81,20	14,39	245,30	39,80
	0,35		0,38		1,74		0,99		1,57		6,02		12,96		39,80
	0,70		0,21		0,84		0,60		1,50		4,42		9,06		29,50
	0,84		0,12		0,53		0,49		1,21		3,25		8,31		18,80
	1,05		0,03		-		0,06		0,92		1,91		4,18		9,60
	-		-		-		-		-		-		-		-
1,76	0	2,20	0,49	10,11	2,50	10,11	1,13	17,68	1,59	46,33	6,05	90,80	14,31	274,40	39,80
	0,35		0,44		2,03		1,09		1,59		6,10		14,28		39,80
	0,70		0,28		1,39		0,87		1,59		5,64		12,23		39,50
	1,05		0,15		0,63		0,47		1,31		4,30		9,34		25,50
	1,41		-		-		0,06		0,77		2,01		3,09		8,50
	1,76		-		-		-		-		-		-		-
2,11	0	2,46	0,50	11,05	2,51	11,05	1,09	19,38	1,60	50,76	5,95	99,50	14,29	300,50	39,80
	0,35		0,50		2,41		1,08		1,60		5,96		14,28		39,80
	0,70		0,35		1,82		1,05		1,57		5,96		13,35		39,80
	1,05		0,23		1,07		0,71		1,59		5,18		10,55		32,30
	1,41		0,11		-		0,45		1,15		3,50		7,92		21,50
	1,76		-		-		-		0,73		1,13		1,15		3,90
2,46	0	2,65	0,51	11,96	2,54	11,96	1,09	20,93	1,61	54,84	5,93	107,40	14,30	324,40	39,80
	0,35		0,50		2,48		1,10		1,61		5,93		14,29		39,80
	0,70		0,43		2,14		1,10		1,60		5,96		14,14		39,80
	1,05		0,32		1,53		1,10		1,59		5,80		12,98		39,50
	1,41		0,19		0,93		0,70		1,38		4,68		10,40		29,00
	1,76		0,07		-		0,25		1,04		2,98		5,62		16,10
2,81	0	2,84	0,51	12,76	2,57	12,76	1,08	22,37	1,62	58,63	5,88	114,80	14,34	347,10	39,80
	0,35		0,51		2,44		1,12		1,61		5,88		14,43		39,80
	0,70		0,47		2,43		1,12		1,62		5,88		14,33		39,80
	1,05		0,40		1,89		1,12		1,61		5,88		13,91		39,80
	1,41		0,27		1,31		0,96		1,59		5,79		12,17		33,00
	1,76		0,17		0,41		0,72		1,35		4,56		9,68		24,90
2,11	0,02	-	0,25	0,95	2,69	5,14	10,70								
3,16	0	3,07	0,51	13,55	2,61	13,55	1,09	23,73	1,63	62,19	5,86	121,80	14,38	367,90	39,80
	0,35		0,51		2,46		1,09		1,64		5,86		14,40		39,80
	0,70		0,51		2,39		1,10		1,64		5,86		14,38		39,80
	1,05		0,44		2,21		1,10		1,63		5,86		14,10		39,80
	1,41		0,35		1,70		1,05		1,62		5,92		13,40		38,30
	1,76		0,25		1,15		0,87		1,49		5,48		11,03		32,00
2,11	0,15	-	0,65	1,22	4,18	7,13	21,50								
2,46	-	-	0,23	0,85	2,32	2,97	9,40								
3,52	0	3,22	0,52	14,27	2,63	14,27	1,10	25,02	1,61	65,56	5,83	128,40	14,35	388,00	39,80
	0,35		0,52		2,55		1,10		1,61		5,83		14,35		39,80
	0,70		0,52		2,47		1,12		1,61		5,83		14,28		39,80
	1,05		0,50		2,36		1,12		1,61		5,83		14,23		39,80
	1,41		0,37		1,86		1,12		1,60		5,83		14,16		39,80
	1,76		0,28		1,28		1,04		1,54		5,83		12,85		37,10
2,11	0,19	0,52	0,80	1,36	5,45	10,88	28,60								
2,46	0,08	-	0,49	0,99	4,06	7,61	18,90								
2,81	-	-	-	-	2,21	2,55	7,30								

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Performance chart

Pressure		AIC 287 1/2"		AIC 484-X 3/4"		AIC 484 3/4"		AIC 584 3/4"		AIC 1078 1"		AIC 1583 1 1/2"		AIC 2081 2"	
a	b	Injector Flow rate l/min	Suction Flow rate l/min	Injector Flow rate l/min	Suction Flow rate l/min	Injector Flow rate l/min	Suction Flow rate l/min	Injector Flow rate l/min	Suction Flow rate l/min	Injector Flow rate l/min	Suction Flow rate l/min	Injector Flow rate l/min	Suction Flow rate l/min	Injector Flow rate l/min	Suction Flow rate l/min
4,22	0	3,48	0,52	15,63	2,68	15,63	1,12	27,40	1,67	71,80	5,85	140,70	14,49	425,10	39,80
	0,35		0,52		2,67		1,12		1,67		5,85		14,44		39,80
	0,70		0,49		2,42		1,12		1,67		5,85		14,45		39,80
	1,05		0,49		2,40		1,12		1,67		5,85		14,32		39,80
	1,41		0,49		2,37		1,12		1,65		5,85		14,37		39,80
	2,11		0,36		1,46		1,09		1,60		5,87		13,03		37,90
	2,46		0,26		0,71		0,96		1,50		5,79		11,50		32,10
	2,81		0,17		-		0,76		1,27		4,87		9,33		24,00
	3,16		0,04		-		0,25		0,91		2,80		5,18		13,70
	4,92		0		3,75		0,52		16,88		2,67		16,88		1,14
0,39		0,52	2,68	1,14		1,63	5,89	14,43		39,80					
0,70		0,52	2,49	1,08		1,64	5,89	14,43		39,80					
1,05		0,52	2,35	1,08		1,64	5,89	14,43		39,80					
1,41		0,52	2,25	1,08		1,63	5,89	14,43		39,80					
2,11		0,47	1,98	1,08		1,62	5,90	14,24		39,80					
2,81		0,30	1,03	1,03		1,62	5,83	12,53		33,40					
3,16		0,22	0,57	0,85		1,47	5,16	10,07		27,80					
3,52		0,11	-	0,72		1,06	3,44	7,85		20,60					
3,87		-	-	0,09		0,57	1,82	2,73		9,00					
5,62	0	4,01	0,52	18,05	2,67	18,05	1,07	31,64	1,65	82,89	5,92	162,40	14,61	490,50	39,80
	0,35		0,52		2,65		1,07		1,60		5,92		14,61		39,80
	0,70		0,52		2,64		1,07		1,65		5,92		14,61		39,80
	1,05		0,52		2,57		1,07		1,65		5,92		14,61		39,80
	1,41		0,52		2,57		1,02		1,66		5,92		14,61		39,80
	2,11		0,51		2,51		1,03		1,66		5,92		14,61		39,80
	2,81		0,40		1,70		1,00		1,66		5,98		13,91		38,10
	3,52		0,26		0,43		0,94		1,58		5,77		11,19		31,90
	4,22		0,06		-		0,39		1,08		3,34		5,88		17,00
	4,57		-		-		-		0,50		2,08		0,76		3,80
6,33	0	4,28	0,52	19,15	2,67	19,15	0,86	33,57	1,71	87,93	5,96	172,30	14,47	520,40	39,80
	0,35		0,52		2,65		0,86		1,71		5,96		14,47		39,80
	0,70		0,52		2,57		0,86		1,71		5,96		14,47		39,80
	1,41		0,52		2,57		0,86		1,73		5,96		14,47		39,80
	2,11		0,52		2,49		0,86		1,72		5,96		14,47		39,80
	2,81		0,50		2,11		0,86		1,72		6,03		14,45		39,80
	3,52		0,36		1,66		0,86		1,72		5,95		13,74		38,00
	4,22		0,22		-		0,84		1,54		5,34		11,22		28,90
	4,92		0,01		-		0,27		1,08		2,50		3,10		11,30
	5,27		-		-		-		0,33		1,30		-		-
7,03	0	4,50	0,49	20,17	2,68	20,17	0,84	35,39	1,81	92,69	5,94	181,60	14,64	548,40	39,80
	0,35		0,49		2,65		0,84		1,81		5,94		14,64		39,80
	0,70		0,49		2,57		0,84		1,81		5,94		14,64		39,80
	1,41		0,49		2,50		0,84		1,84		5,94		14,64		39,80
	2,11		0,49		2,57		0,84		1,83		5,94		14,64		39,80
	2,81		0,47		2,21		0,84		1,82		5,94		14,64		39,80
	3,52		0,45		1,71		0,83		1,82		5,93		14,41		39,20
	4,22		0,33		0,96		0,84		1,79		5,99		13,01		37,50
	4,92		0,19		-		0,81		1,47		5,13		9,25		26,00
	5,62		-		-		0,06		1,06		1,93		1,62		7,60
8,44	0	5,00	0,40	22,10	2,89	22,10	0,78	38,76	2,03	101,60	5,96	598,00	-	598,00	39,80
	0,35		0,40		2,77		0,78		2,03		5,96		-		39,80
	0,70		0,40		2,73		0,78		2,03		5,96		-		39,80
	1,41		0,40		2,65		0,78		2,03		5,96		-		39,80
	2,11		0,40		2,54		0,78		2,03		5,96		-		39,80
	2,81		0,40		2,32		0,77		2,01		5,96		-		39,80
	3,52		0,38		2,02		0,77		2,01		5,96		-		39,80
	4,22		0,37		1,57		0,77		2,00		6,01		-		38,60
	4,92		0,30		1,29		0,77		2,00		5,96		-		37,50
	5,62		0,23		-		0,77		1,80		5,73		-		33,00
6,33	0,09	-	0,74	1,08	3,86	-	19,50								
7,03	-	-	-	0,69	0,69	-	-								

FERTIGATION