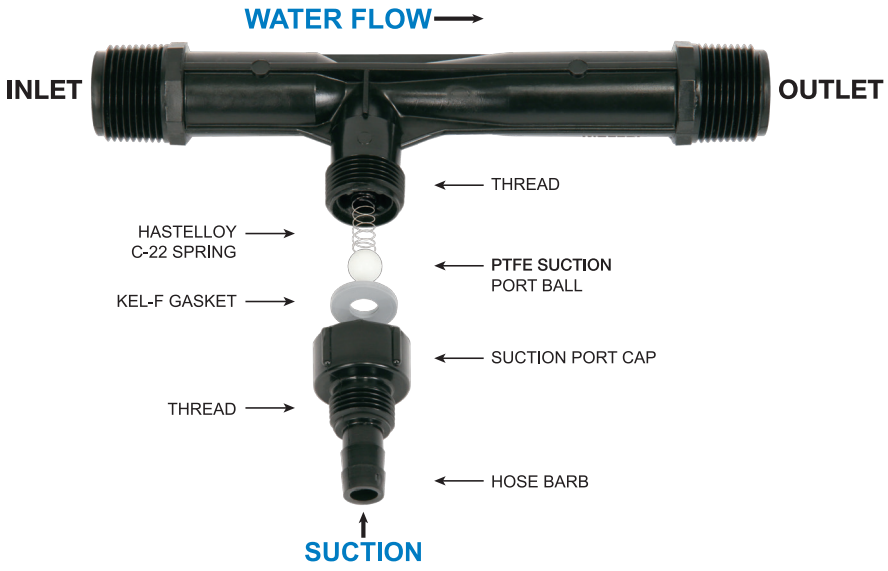
Guide to Injector Performance Tables

Mazzei injectors are extremely efficient, compact differential pressure injectors with internal mixing vanes. When sufficient pressure difference exists between the inlet and outlet ports of the patented injector, a vacuum is created inside the injector body, which initiates suction through the suction port.

Mazzei injectors are available in polypropylene, polyvinylidene fluoride (PVDF), and natural PVDF – all are high quality thermoplastics with superior strength, high temperature capability and are resistant to most chemicals. It is important to choose the correct material to be compatible with your chemical additives. When specified and applied correctly, Mazzei injectors will provide years of trouble-free operation.



To choose the Mazzei injector that fits your needs, reference the Mazzei Injector Performance Tables located on the Mazzei website, **www.mazzei.net**, and in the Mazzei Agriculture Product Catalog, or use our online calculator, the Injector Selector Tool™, at: **http://injectorselector.mazzei.net**, to aid in injector selection.

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Information Needed to Select an Injector

1 **INLET PRESSURE** (Upstream Pressure Available): What is the pressure upstream from the injector?

2 **MOTIVE FLOW RATE** (Flow through the Injector): How much water needs to go through the injector?

3 **OUTLET PRESSURE** (Downstream Pressure): What pressure will the injector see downstream after installation?

4 **INJECTION RATE** (Suction Rate): How much do you want to inject?

Example

A grower plans to inject **120 GPH** (2 GPM) of a liquid fertilizer through a by-pass into his irrigation system. He has **40 PSI** available and needs to maintain **25 PSI** downstream. He also wants to maintain a water flow rate of around **30 GPM** through the by-pass. Going by the grower's requirements, refer to the Injector Performance Table below:

Water Suction Capacity

Operating Pressure PSIG		Model 584 ½" & ¾" Threads		Model 684 ¾" Threads		Model 878-03 1" Threads		Model 885X-03 1" Threads		Model 1078-03 1" Threads		Model 1583 1½" Threads	
Injector Inlet	Injector Outlet	Motive Flow GPM	Water Suction GPH	Motive Flow GPM	Water Suction GPH	Motive Flow GPM	Water Suction GPH	Motive Flow GPM	Water Suction GPH	Motive Flow GPM	Water Suction GPH	Motive Flow GPM	Water Suction GPH
20	0	4.2	24.8	7.0	25.1	7.3						21.5	228
	5		24.8		25.2						95.4		205
	10		23.7		25.2						70.0		144
	12		19.2		18.4						51.5		132
	15	*(18.0)	14.6	*(16.5)	10.4	*(16.5)					30.3	*(17.9)	66.2
30	0	5.1	25.3	8.6	24.5	9.0					94.4	26.3	227
	5		25.4		24.6						94.5		226
	10		24.9		24.6						94.5		212
	15		25.2		24.6						82.1		167
	20		18.2		14.7		35.4		14.3		55.4		126
	25	*(27.0)	11.6	*(26.0)	6.8	*(26.1)	9.1	*(20.5)		*(26.0)		*(26.0)	18.3
40	0	5.9	25.6	9.9	25.0	10.3	77.5	10.1	141	15.5		30.3	227
	5		25.6		25.0		77.5		141				229
	10		25.6		25.1		77.5		139		93.2		227
	15		25.5		25.0		77.5		128		93.2		221
	20		25.2		25.1		73.6		90.5		91.9		193
	25		21.3		24.7		50.6		36.9		72.2		153
	30	*(35.5)	15.0	*(35.0)	10.8	*(34.4)	28.2	*(27.0)		*(34.4)	42.7	*(33.4)	81.5
50	0	6.6	25.6	11.1	25.0	11.6	74.8	11.3	140	17.3	92.4	33.9	227
	10		25.6		25.0		74.8		141		92.4		226
	20		25.4		24.9		74.8		128		92.4		224
	25		24.5		25.0		68.3		107		92.4		204
	30		21.6		17.1		56.2		59.0		86.4		172
	35		15.8		9.2		36.6		12.9		64.3		121
	40	*(45.0)	2.8	*(42.0)	6.7	*(42.3)	9.6	*(36.0)		*(43.9)	35.0	*(41.9)	40.5

Model 1583 will work. This model has enough suction to provide a maximum of **153 GPH** @ **25 PSI** with a motive (water) flow of **30.3 GPM**

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Other Factors Affecting Liquid Injection

Suction capacity will differ from listed suction capacity under non-standard conditions (i.e. if not at sea level; if the injector placement and liquid additive are not at the same elevation; if the additive is heavier or more viscous than water; if temperatures differ significantly from 70º F; etc). *See* **Mazzei Technical Bulletin No. 1** – *available on the Mazzei website,* **www.mazzei.net** –*for correction calculations.*

Information Needed to Select an Injector

1. **INLET PRESSURE** (Upstream Pressure Available): What is the pressure upstream from the injector?
2. **MOTIVE FLOW RATE** (Flow through the Injector): How much water needs to go through the injector?
3. **OUTLET PRESSURE** (Downstream Pressure): What pressure will the injector see downstream after installation?
4. **INJECTION RATE** (Suction Rate): How much do you want to inject?

Example

A grower plans to inject **7.57 l/min** of a liquid fertilizer through a by-pass into his irrigation system. He has **2.81 kg/cm²** available and needs to maintain **1.76 kg/cm²** downstream. He also wants to maintain a water flow rate of around **116 l/min** through the by-pass. Going by the grower's requirements, refer to the Injector Performance Table below:

Water Suction Capacity (METRIC) REV 2014

Operating Pressure kg/cm²		Model 584 15mm & 20mm Threads		Model 684 20mm Threads		Model 878-03 25mm Thre		Model 885X-03		Model 1078-03 eads		Model 1583 40mm Threads	
Injector Inlet	Injector Outlet	Motive Flow l/min	Water Suction l/min	Motive Flow l/min	Water Suction l/min	Motive Flow l/min	W S l				Water Suction l/min	Motive Flow l/min	Water Suction l/min
1.41	0.00	15.8	1.5	26.5	1.5	27.6					6.1	81.2	14.3
	0.35		1.5		1.5						6.0		12.9
	0.70		1.4		1.5						4.4		9.0
	0.84		1.2		1.1						3.2		8.3
	1.05	*(1.27)	0.92	*(1.16)	0.65	*(1.16)					1.9	*(1.26)	4.1
2.11	0.00	19.4	1.5	32.5	1.5	33.9					5.9	99.4	14.2
	0.35		1.6		1.5						5.9		14.2
	0.70		1.5		1.5		4.6	33.0	7.9	50.8	5.9		13.3
	1.05		1.5		1.5		4.1		4.3		5.1		10.5
	1.41		1.1		0.92		2.2		0.90		3.4		7.9
	1.76	*(1.90)	0.72	*(1.83)	0.42	*(1.84)	0.57	*(1.44)		*(1.83)	1.1	*(1.83)	1.1
2.81	0.00	22.4	1.6	37.5	1.5	39.1	4.8	38.1	8.8	58.6	5.8	115	14.3
	0.35		1.6		1.5		4.8		8.9		5.8		14.4
	0.70		1.6		1.5		4.8		8.7		5.8		14.3
	1.05		1.6		1.5		4.8		8.0		5.8		13.9
	1.41		1.5		1.5		4.6		5.7		5.7		12.1
	1.76		1.3		1.5		3.1		2.3		4.5		9.6
	2.11	*(2.50)	0.94	*(2.46)	0.68	*(2.42)	1.7	*(1.90)		*(2.42)	2.6	*(2.35)	5.1
3.52	0.00	25.0	1.6	41.9	1.5	43.7	4.7	42.6	8.8	65.5	5.8	128	14.3
	0.35		1.6		1.5		4.7		8.8		5.8		14.3
	0.70		1.6		1.5		4.7		8.8		5.8		14.2
	1.05		1.6		1.5		4.7		8.7		5.8		14.2
	1.41		1.6		1.5		4.7		8.0		5.8		14.1
	1.76		1.5		1.5		4.3		6.7		5.8		12.8
	2.11		1.3		1.0		3.5		3.7		5.4		10.8
	2.46		0.99		0.57		2.3		0.81		4.0		7.6
	2.81	*(3.16)	0.17	*(2.95)	0.42	*(2.97)	0.60	*(2.53)		*(3.09)	2.2	*(2.95)	2.5

Model 1583 will work. This model has enough suction to provide a maximum of **9.6 l/min** @ **1.76 kg/cm²** with a motive (water) flow of **115 l/min**

1 2 3 4

Other Factors Affecting Liquid Injection

Suction capacity will differ from listed suction capacity under non-standard conditions (i.e. if not at sea level; if the injector placement and liquid additive are not at the same elevation; if the additive is heavier or more viscous than water; if temperatures differ significantly from 21° C; etc). *See* **Mazzei Technical Bulletin No. 1** – *available on the Mazzei website,* **www.mazzei.net** –*for correction calculations.*