



# MAZZEI VENTURI FERTILIZER INJECTORS- 15MM - 50MM

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Mazzei Injectors (patented) are extremely efficient, compact differential injection devices. Currently operating successfully in thousands of installations worldwide. Mazzei Injectors offer a reliable, accurate and economical method to inject virtually any liquid or gas substance into a pressurized fluid stream.

## Application

The highly versatile Mazzei Injectors are suitable for a wide variety of applications -

### Agriculture

*Ag Irrigation Systems* - to inject fertilizers and other chemicals or water treatment additives.

*Ag Spray Systems* - for mixing and/or the transfer of concentrated pesticide materials.

*Food Processing* - for water chlorination, injection of detergents, bacterial agents and other water treatment purification additives.

### Home and Garden

*Irrigation Systems* - for application of liquid fertilizer through landscape sprinkler or drip irrigation systems, hose end sprinklers and/or spray nozzles.

(Check local guides)

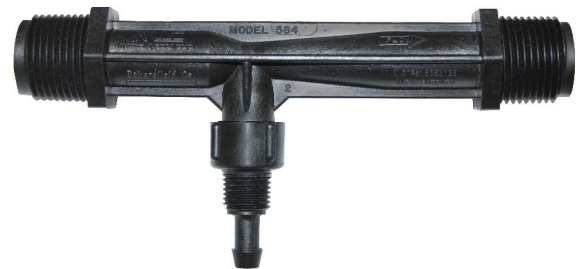
### Industrial/Commercial

*Water Treatment* - to inject air, liquids, gases (ozone) and other water purification chemicals for cooling tower or other water or fluid recirculatory systems, waste

water systems and potable water systems.

*Washing and Cleaning* - to inject detergents, solvents and other cleaning agents

into carpet cleaning equipment, car wash systems, dishwashing equipment and other industrial cleaning processes.



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## Features

- Molded from high quality thermoplastics with superior strength, high temperature capability and resistant to most chemicals
- No moving parts, low maintenance trouble-free operation
- Unique design allows maximum cavitation in the injection chamber, thereby providing instantaneous mixing
- Ideally suited for continuous mixing functions, requires no secondary blending devices
- Initial cost and installation cost are low
- Powered by the motive fluid, no external energy required for most installations
- Available in a broad range of sizes, flows and injection capacities

**\*\*Please note it is strongly recommended that a pressure gauge be fitted on either side of the injector**

Part No.	Description	Part No.	Description
HR283	7.8lph Mazzei Venturi Fertilizer Injector - 15mm	HRK184	Suction Kit suits HR283, HR384, HR484 & HR584
HR384	38.4lph Mazzei Venturi Fertilizer Injector - 15mm	HRK183	Suction Kit suits HR878, HR1078 & HR1583A
HR484	48lph Mazzei Venturi Fertilizer Injector - 15mm	HRK282	Suction Kit suits HR2081A
484X	PVDF Mazzei Venturi Fertilizer Injector - 20mm Suitable for chlorine, sulphuric and nitric acids Resistant to ozone	<b>Mazzei Fertilizer Injector Spare Parts</b>	
HR584	81.6lph Mazzei Venturi Fertilizer Injector - 20mm	CR2	Ball & Washer for HR383, HR484, HR584
HR878	212.4lph Mazzei Venturi Fertilizer Injector - 25mm	CR3	Ball / Spring & Washer for HR878, HR1078
HR1078	327lph Mazzei Venturi Fertilizer Injector - 25mm		
HR1583A	652.8lph Mazzei Venturi Fertilizer Injector - 40mm		
HR2081A	4716lph Mazzei Venturi Fertilizer Injector - 50mm		

\* Injection flow rates for Mazzei Injectors based on 350kPa inlet with 211kPa on outlet

## MAZZEI VENTURI FERTILIZER INJECTOR SPARE PARTS

**Suction Kit**



**Ball / Spring & Washer**





# MAZZEI VENTURI FERTILIZER INJECTORS- 15MM - 50MM

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) -**

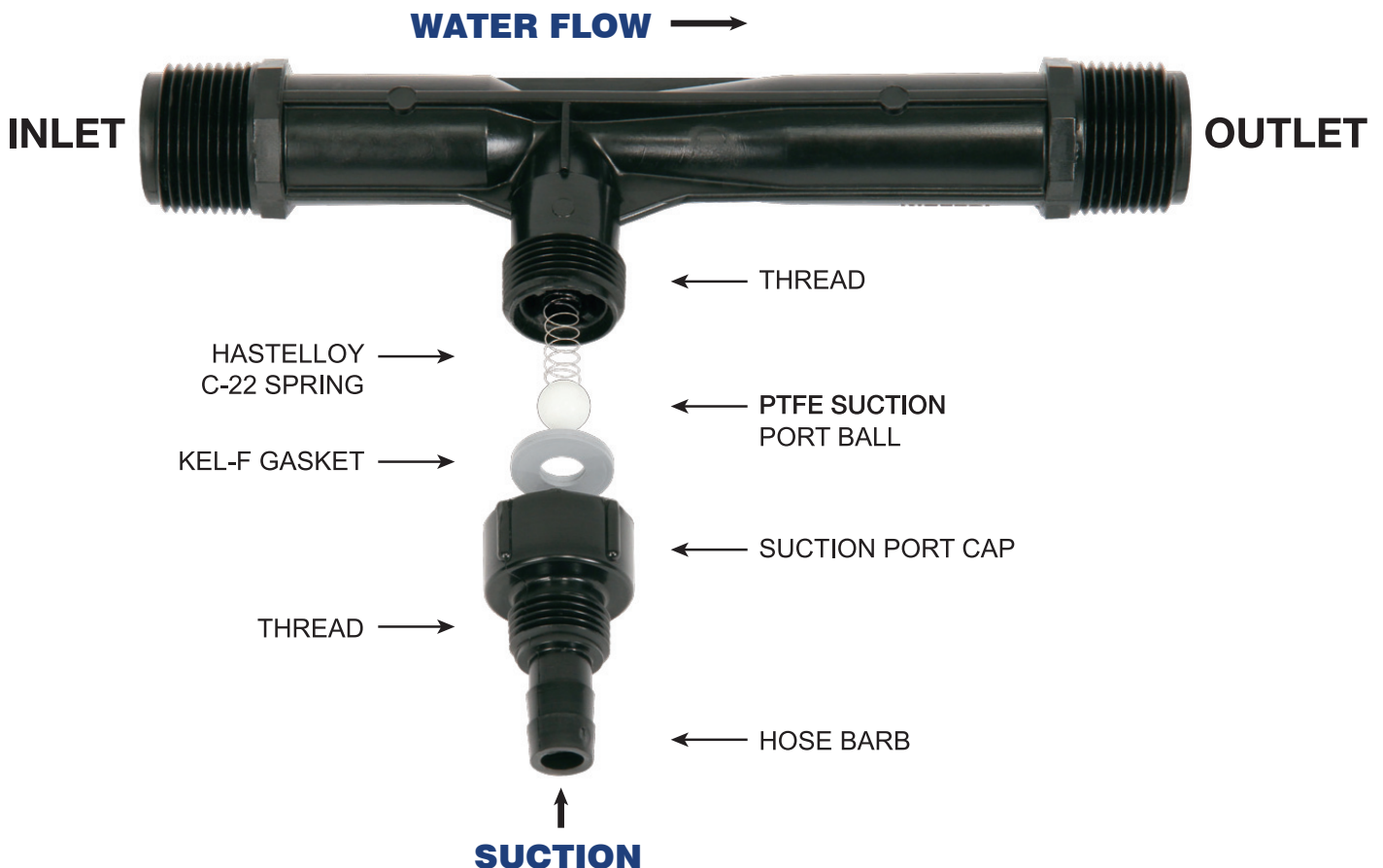
How much water needs to go through the injector?

**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?

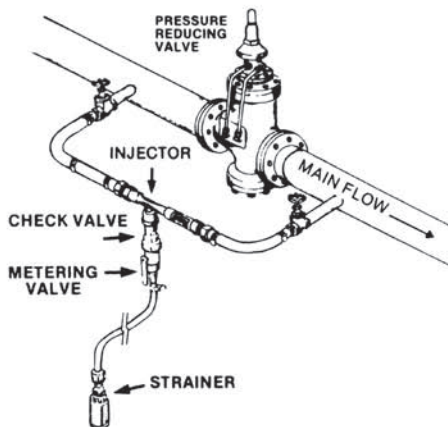


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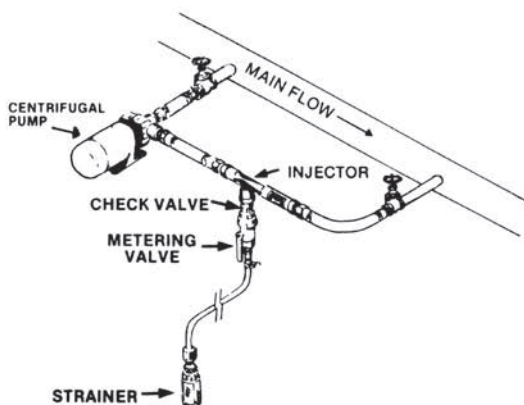
## How the Mazzei Fertilizer Injector works:

When pressurized, operating (motive) fluid enters the Injector inlet, it is constricted toward the injection chamber and changes into a high velocity jet stream. The increase in velocity through the injection chamber results in a decrease in pressure, thereby enabling an additive material to be drawn through the suction port and entrained into the motive stream. As the jet stream is diffused toward the injector outlet, its velocity is reduced and it is converted into pressure energy (but at a pressure lower than the injector inlet pressure.)

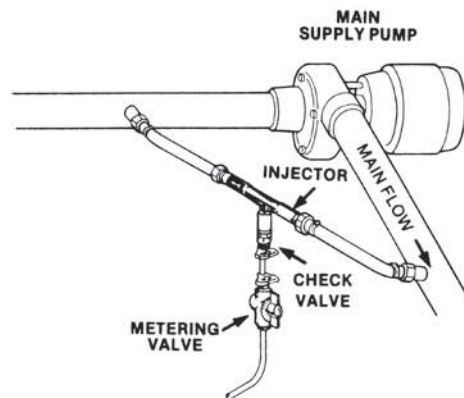
## Typical Installations



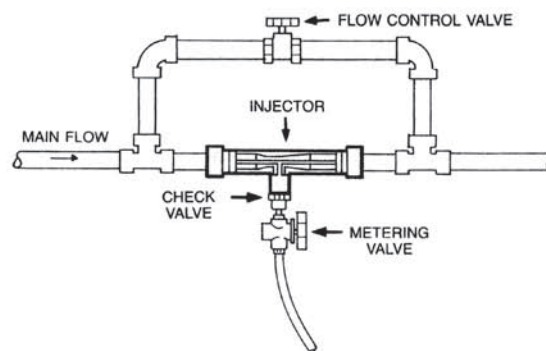
Injector installed around a point of restriction such as a regulator valve or gate valve which creates a differential pressure, thereby allowing the injector to produce a vacuum.



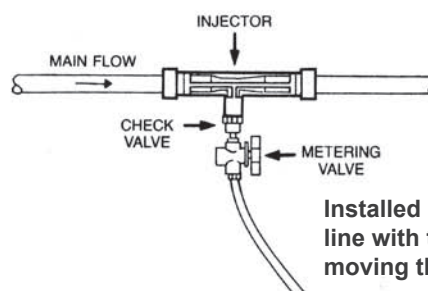
Installed in conjunction with a centrifugal pump to boost pressure through the injector thereby creating a differential pressure and producing a vacuum for chemical induction downstream from the pump.



Injector installed across the differential pressure created by an existing booster or supply pump in the system. It is plumbed from the discharge side to the intake side of the pump.



Injector installed in main flow line with flow control valve on by-pass line.



Installed directly in the main flow line with total flow of the system moving through the injector.



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INJECTOR PERFORMANCE TABLE																				
Operating Pressure		Suction Capacity of Mazzei Injectors at Various Operating Conditions																		
Inlet kPa	Outlet kPa	HR283 15mm		HR384 15mm		HR484 15mm		484X 20mm		HR584 20mm		HR878 25mm		HR1078 25mm		HR1583 40mm		HR2081A 50mm		
		Motive Flow lpm	Liquid Suction lpm	Motive Flow lpm	Liquid Suction lpm	Motive Flow lpm	Liquid Suction lpm	Motive Flow lpm	Liquid Suction lpm	Motive Flow lpm	Liquid Suction lpm	Motive Flow lpm	Liquid Suction lpm	Motive Flow lpm	Liquid Suction lpm	Motive Flow lpm	Liquid Suction lpm	Motive Flow lpm	Liquid Suction lpm	
35	0		0.20		0.65		0.92		1.4		1.8		3.9		6.4		8.5		39.7	
	7	0.64	0.13	2.7	0.54	4.5	0.65	4.5	1.0	7.9	1.8	13.8	2.2	20.7	2.9	40.6	5.3	123	39.7	
	14		0.06		0.47		0.42		0.75		1.7		1.5		1.3		3.3		39.7	
	21				0.32				0.46		1.6		0.46		0.17				13.5	
	28	*(0.25)		*(0.27)		*(0.31)		*(0.25)		*(0.31)	0.63	*(0.28)		*(0.28)		*(0.31)		*(0.32)		8.5
70	0		0.30		0.96		1.1		1.8		1.7		5.9		6.6		13.8		39.7	
	14	0.91	0.18	3.8	0.72	6.4	0.88	6.4	1.4	11.2	1.7	19.5	3.9	29.3	4.7	57.4	9.0	174	39.7	
	35		0.07		0.48		0.38		0.74		1.7		2.3		2.6		4.9		29.5	
	49				0.13		0.17		0.23		0.83		0.99		1.2		2.6		9.4	
	56	*(0.49)		*(0.58)		*(0.59)		*(0.53)		*(0.63)	0.69	*(0.61)		*(0.57)	0.27	*(0.61)		*(0.63)		1.9
105	0		0.34		0.84		1.1		2.4		1.7		5.5		6.3		14.2		39.7	
	35		0.17		0.71		0.72		1.3		1.7		3.9		5.0		10.3		39.3	
	49	1.1	0.11	4.6	0.53	7.8	0.52	7.8	0.98	13.7	1.7	23.9	2.8	35.9	4.0	70.3	7.8	213	36.3	
	70				0.30						0.88		1.4		2.1		5.4		13.4	
	84	*(0.74)		*(0.91)		*(0.88)		*(0.61)		*(0.95)	0.69	*(0.88)	0.45	*(0.92)	1.0	*(0.91)	0.92	*(0.94)		4.8
141	0		0.37		0.82		1.1		2.4		1.5		5.2		6.1		14.3		39.7	
	35		0.23		0.83		0.98		1.7		1.5		5.0		6.0		12.9		39.7	
	70	1.2	0.13	5.4	0.58	9.0	0.59	9.0	0.84	15.8	1.4	27.6	3.0	41.4	4.4	81.2	9.0	245	29.5	
	84		0.03		0.40		0.49		0.53		1.2		2.1		3.2		8.3		18.8	
	105	*(1.05)		*(1.16)		*(1.20)		*(0.93)		*(1.27)	0.92	*(1.16)	1.3	*(1.22)	1.9	*(1.26)	4.1	*(1.23)		9.5
176	0		0.37		0.89		1.1		2.4		1.5		5.1		6.0		14.3		39.7	
	35		0.20		0.89		1.0		2.0		1.5		5.1		6.0		14.2		39.7	
	70	1.3	0.16	6.0	0.80	10.1	0.86	10.1	1.3	17.7	1.5	30.9	4.6	46.3	5.6	90.8	12.2	274	39.5	
	105		0.04		0.42		0.46		0.62		1.3		2.8		4.3		9.3		25.4	
	141	*(1.30)		*(1.44)		*(1.52)		*(1.16)		*(1.55)	0.76	*(1.48)	1.2	*(1.54)	2.0	*(1.55)	3.0	*(1.57)		8.4
211	0		0.38		0.89		1.0		2.5		1.5		5.0		5.9		14.2		39.7	
	35		0.37		0.91		1.0		2.4		1.6		4.9		5.9		14.2		39.7	
	70	1.5	0.24	6.6	0.87	11.1	1.0	11.1	1.8	19.4	1.5	33.9	4.8	50.8	5.9	99.4	13.3	301	39.7	
	105		0.15		0.67		0.71		1.0		1.5		4.1		5.1		10.5		32.2	
	141	*(1.58)		*(1.77)		*(1.79)		*(1.20)		*(1.90)	0.72	*(1.84)	0.57	*(1.83)	1.1	*(1.83)	1.1	*(1.83)		3.9
246	0		0.38		0.91		1.0		2.5		1.6		5.0		5.9		14.3		39.7	
	35		0.38		0.91		1.0		2.4		1.6		5.0		5.9		14.2		39.7	
	70	1.5	0.30	7.1	0.91	11.9	1.0	11.9	2.1	20.9	1.6	36.6	4.8	54.8	5.9	107	14.1	325	39.7	
	105		0.21		0.86		1.0		1.5		1.5		4.7		5.7		12.9		39.5	
	141	*(1.83)		*(2.01)		*(2.07)		*(1.65)		*(2.22)	1.0	*(2.12)	1.9	*(2.11)	2.9	*(2.07)	5.6	*(2.14)		16.1
281	0		0.38		0.89		1.0		2.5		1.6		4.8		5.8		14.3		39.7	
	35		0.38		0.89		1.1		2.4		1.6		4.8		5.8		14.4		39.7	
	70	1.6	0.35	7.6	0.88	12.8	1.0	12.8	2.4	22.4	1.6	39.1	4.8	58.6	5.8	115	14.3	347	39.7	
	105		0.26		0.88		1.0		1.8		1.6		4.6		5.7		12.1		33.0	
	141	*(2.07)		*(2.25)		*(2.34)		*(1.84)		*(2.50)	0.94	*(2.42)	1.7	*(2.42)	2.6	*(2.35)	5.1	*(2.36)		10.6
316	0		0.38		0.86		1.0		2.6		1.6		5.0		5.8		14.3		39.7	
	35		0.38		0.87		1.0		2.4		1.6		5.0		5.8		14.4		39.7	
	70		0.37		0.87		1.1		2.3		1.6		5.0		5.8		14.3		39.7	
	105	1.7	0.31	8.0	0.86	13.5	1.1	13.5	2.2	23.7	1.6	41.5	5.0	62.2	5.8	122	14.1	368	39.7	
	141		0.21		0.87		1.0		1.6		1.6		4.9		5.9		13.4		38.2	
352	0		0.38		0.89		1.0		2.6		1.6		4.7		5.8		14.3		39.7	
	35		0.38		0.89		1.0		2.5		1.6		4.7		5.8		14.3		39.7	
	70		0.38		0.89		1.1		2.4		1.6		4.7		5.8		14.2		39.7	
	105		0.36		0.89		1.1		2.3		1.6		4.7		5.8		14.2		39.7	
	141	1.8	0.30	8.5	0.85	14.3	1.1	14.3	1.8	25.0	1.6	43.7	4.7	65.5	5.8	128	14.1	388	39.7	
352	176		0.22		0.85		1.0		0.51		1.5		4.3		5.8		12.8		37.0	
	211		0.13		0.63		0.80				1.3		3.5		5.4		10.8		28.5	
	246		0.04		0.38		0.49				0.99		2.3		4.0		7.6		18.9	
	281	*(2.60)		*(2.78)		*(2.88)		*(2.04)		*(3.16)		*(2.97)	0.60	*(3.09)	2.2	*(2.95)	2.5	*(2.92)		7.2

\*Numbers in parenthesis indicate the injector outlet pressure when suction stops (Zero Suction Point).



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Operating Pressure		Suction Capacity of Mazzei Injectors at Various Operating Conditions																	
Inlet kPa	Outlet kPa	HR283 15mm		HR384 15mm		HR484 15mm		484X 20mm		HR584 20mm		HR878 25mm		HR1078 25mm		HR1583 40mm		HR2081A 50mm	
		Motive Flow lpm	Liquid Suction lpm	Motive Flow lpm	Liquid Suction lpm	Motive Flow lpm	Liquid Suction lpm	Motive Flow lpm	Liquid Suction lpm	Motive Flow lpm	Liquid Suction lpm	Motive Flow lpm	Liquid Suction lpm	Motive Flow lpm	Liquid Suction lpm	Motive Flow lpm	Liquid Suction lpm	Motive Flow lpm	Liquid Suction lpm
422	0		0.38		0.86		1.1		2.6		1.6		4.5		5.8		14.4		39.7
	35		0.38		0.86		1.1		2.6		1.6		4.5		5.8		14.4		39.7
	70		0.38		0.85		1.1		2.4		1.6		4.5		5.8		14.4		39.7
	105	2.0	0.38	9.3	0.85	15.6	1.1	15.6	2.4	27.4	1.6	47.9	4.5	71.8	5.8	141	14.3	425	39.7
	141		0.36		0.84		1.1		2.3		1.6		4.5		5.8		14.3		39.7
	211		0.24		0.78		1.0		1.4		1.6		4.4		5.8		13.0		37.8
	246		0.15		0.73		0.96				1.5		3.9		5.7		11.5		32.0
	281		0.08		0.52		0.75				1.2		2.6		4.8		9.3		24.0
	316		*(3.20)		*(3.33)		*(3.57)		*(2.43)		*(3.76)		*(3.60)		*(3.59)		*(3.47)		*(3.52)
492	0		0.38		0.76		1.1		2.6		1.6		4.6		5.8		14.4		39.7
	35		0.38		0.76		1.1		2.6		1.6		4.6		5.8		14.4		39.7
	70		0.38		0.77		1.0		2.4		1.6		4.6		5.8		14.4		39.7
	105		0.38		0.76		1.0		2.3		1.6		4.6		5.8		14.4		39.7
	141	2.2	0.38	10.0	0.77	16.9	1.0	16.9	2.2	29.6	1.6	51.7	4.6	77.5	5.8	152	14.4	459	39.7
	211		0.33		0.77		1.0		1.9		1.6		4.6		5.8		14.2		39.7
	281		0.18		0.75		1.0		1.0		1.6		4.2		5.8		12.5		33.3
	316		0.12		0.69		0.84				1.4		2.9		5.1		10.0		27.7
	352		0.05		0.47		0.71				1.0		1.9		3.4		7.8		20.5
387		*(3.80)		*(3.68)		*(4.11)		*(2.86)		*(4.43)		*(4.10)		*(4.14)		*(3.99)		*(4.11)	8.9
562	0		0.38		0.73		1.0		2.6		1.6		4.6		5.9		14.6		39.7
	35		0.38		0.73		1.0		2.6		1.6		4.6		5.9		14.6		39.7
	70		0.38		0.73		1.0		2.6		1.6		4.6		5.9		14.6		39.7
	105		0.38		0.73		1.0		2.5		1.6		4.6		5.9		14.6		39.7
	141	2.3	0.38	10.7	0.73	18.0	1.0	18.0	2.5	31.6	1.6	55.3	4.6	82.9	5.9	162	14.6	491	39.7
	211		0.38		0.73		1.0		2.5		1.6		4.6		5.9		14.6		39.7
	281		0.28		0.73		0.99		1.7		1.6		4.6		5.9		13.9		38.1
	352		0.15		0.71		0.94		0.43		1.5		3.5		5.7		11.1		31.9
	422				0.43		0.39				1.0		1.6		3.3		5.8		17.0
457		*(4.26)		*(4.35)		*(4.64)		*(3.65)		*(5.10)		*(4.75)		*(4.82)		*(4.92)		*(4.68)	3.8
633	0		0.38		0.70		0.86		2.6		1.7		4.6		5.9		14.4		39.7
	35		0.38		0.70		0.86		2.6		1.7		4.6		5.9		14.4		39.7
	70		0.38		0.70		0.86		2.5		1.7		4.6		5.9		14.4		39.7
	141		0.38		0.70		0.86		2.5		1.7		4.6		5.9		14.4		39.7
	211	2.5	0.38	11.4	0.70	19.1	0.86	19.1	2.4	33.6	1.7	58.7	4.6	87.9	5.9	172	14.4	521	39.7
	281		0.36		0.70		0.86		2.1		1.7		4.6		6.0		14.4		39.7
	352		0.22		0.70		0.86		1.6		1.7		4.4		5.9		13.7		37.9
	422		0.10		0.69		0.84				1.5		3.0		5.3		11.2		28.9
	492				0.29		0.26				0.83		1.1		2.4		3.0		11.3
527		*(4.78)		*(4.99)		*(5.20)		*(3.81)		*(5.66)		*(5.32)		*(5.41)		*(5.14)		*(5.31)	
703	0		0.38		0.68		0.83		2.6		1.8		4.8		5.9		14.6		39.7
	35		0.38		0.69		0.83		2.6		1.8		4.8		5.9		14.6		39.7
	70		0.38		0.68		0.83		2.5		1.8		4.8		5.9		14.6		39.7
	141		0.38		0.69		0.83		2.5		1.8		4.8		5.9		14.6		39.7
	211	2.6	0.38	12.0	0.69	20.2	0.83	20.2	2.5	35.4	1.8	61.8	4.8	92.7	5.9	182	14.6	549	39.7
	281		0.38		0.68		0.83		2.2		1.8		4.8		5.9		14.6		39.7
	352		0.32		0.69		0.83		1.7		1.8		4.7		5.9		14.4		39.2
	422		0.19		0.69		0.83				1.7		4.2		5.9		13.0		37.4
	492		0.07		0.66		0.81				1.4		2.8		5.1		9.2		26.0
562		*(5.34)		*(5.52)		*(5.83)		*(4.19)		*(6.33)		*(5.94)		*(6.05)		*(5.72)		*(5.84)	7.6
844	0		0.38		0.68		0.77		2.8		2.0		4.7		5.9				39.7
	35		0.38		0.68		0.77		2.7		2.0		4.7		5.9				39.7
	70		0.38		0.68		0.77		2.7		2.0		4.7		5.9				39.7
	141		0.38		0.68		0.77		2.6		2.0		4.7		5.9				39.7
	211		0.38		0.68		0.77		2.5		2.0		4.7		5.9				39.7
	281		0.38		0.68		0.77		2.3		2.0		4.7		5.9				39.7
	352	2.9	0.35	13.1	0.68	22.1	0.77	22.1	2.0	38.7	2.0	67.7	4.7	101	5.9	-		601	39.7
	422		0.33		0.68		0.77		1.5		1.9		4.7		6.0				38.6
	492		0.25		0.68		0.76		1.2		1.9		4.4		5.9				37.5
562		0.15		0.68		0.76				1.8		3.8		5.7				33.0	
633		0.06		0.54		0.73				1.0		2.1		3.8				19.5	
703		*(6.54)		*(6.81)		*(7.01)		*(5.00)		*(7.52)		*(7.14)		*(7.17)				*(7.09)	

\*Numbers in parenthesis indicate the injector outlet pressure when suction stops (Zero Suction Point).