

COMMERCIAL CONTROL VALVE ACCESSORIES

AquaMatic® Fluid Ejectors

540 Series



AquaMatic 540 Series Fluid Ejectors are constructed of corrosion-resistant PVC and specifically designed for water treatment applications. The ejector cartridge is chemically bonded inside the housing for years of trouble-free service. For optimum performance, ejectors should be installed with a section of the straight pipe extending from the discharge area.

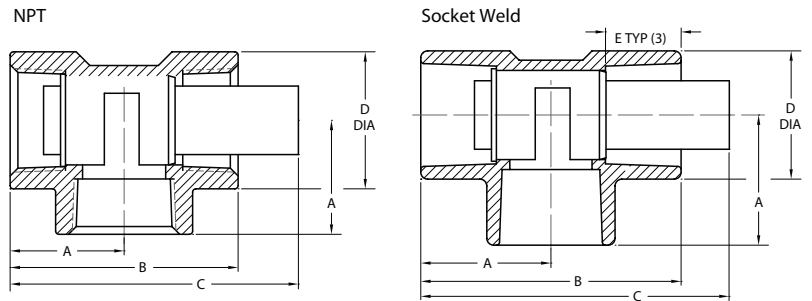
- Available in U.S. Standard socket weld ends* and NPT ends
- Min./max. operating pressure: 20 to 125 psi (1.37 to 8.6 bars)
- Operating temperature up to 140°F (60°)

*Add an "S" to the end of the series number when ordering U.S. Standard socket weld ends

Dimensions

Series	Size – Inches		A	B	C	D	E
	NPT	Slip					
540	1/2 – 14		1.37 (35)	2.75 (70)	N/A	1.31 (33)	N/A
540S		1/2					
541	3/4 – 14		1.72 (44)	3.44 (88)	N/A	1.50 (38)	N/A
541S		3/4					
542	1 – 11-1/2		1.88 (48)	3.75 (96)	N/A	1.81 (46)	N/A
542S		1					
544	1-1/2 – 11-1/2		2.09 (53)	4.19 (106)	5.25 (133)	2.38 (60)	N/A
544S		1-1/2	2.38 (60)	4.75 (120)	5.63 (143)		1.38 (35)
546	2 – 11-1/2		2.78 (71)	5.56 (142)	6.63 (168)	3.00 (76)	N/A
546S		2					

NOTE: 1. Dimensions are nominal.
 2. N/A denotes not applicable.
 3. Maximum temperature 140°F (60°C)
 4. Due to the differences in the tees which are supplied by vendor, all dimensions are subject to variations.



Performance

Inlet Pressure (PSI)	Nozzle Flow Rates – gals/min (L/min)																									
	540 1/2-inch						541 3/4-inch				542 1-inch				544 1-1/2-inch					546 2-inch						
	540-1 Black	540-2 Brown	540-3 Red	540-4 White	540-5 Blue	Draw Factor	541-1 Red	541-2 White	541-3 Blue	Draw Factor	542-1 Red	542-2 White	542-3 Blue	Draw Factor	544-1 Red	544-2 White	544-3 Blue	544-4 Yellow	544-5 Orange	Draw Factor	546-1 Red	546-2 White	546-3 Blue	546-4 Yellow	546-5 Orange	Draw Factor
20 (1.37)	0.13 (0.52)	0.18 (0.73)	0.31 (1.22)	0.62 (2.44)	0.90 (3.50)	0.80	1.07 (4.30)	1.80 (7.20)	2.90 (11.2)	1.15	4.40 (17.3)	5.80 (22.0)	8.20 (31.7)	1.04	8.70 (34.2)	13.4 (52.5)	17.0 (66.0)	21.0 (83.0)	24.5 (97.6)	1.08	29.5 (116)	35.7 (140)	28.4 (152)	45.0 (178)	52.0 (207)	1.08
30 (2.06)	0.16 (0.60)	0.23 (0.84)	0.38 (1.42)	0.76 (2.82)	1.10 (4.00)	0.78	1.30 (4.90)	2.10 (8.30)	3.50 (13.0)	1.20	5.40 (20.0)	7.10 (25.0)	10.0 (36.0)	0.94	10.6 (39.5)	16.4 (60.0)	20.7 (76.0)	25.7 (96.0)	30.0 (112)	1.12	36.0 (134)	43.7 (162)	47.0 (176)	55.0 (205)	64.0 (240)	1.12
40 (2.75)	0.19 (0.74)	0.26 (1.00)	0.44 (1.74)	0.88 (3.50)	1.20 (4.90)	0.82	1.50 (6.00)	2.50 (10.2)	4.00 (16.0)	1.26	6.20 (24.5)	8.20 (31.0)	11.7 (45.0)	0.95	12.3 (48.4)	19.0 (74.4)	24.0 (93.4)	29.7 (117)	34.7 (138)	1.16	41.7 (164)	50.0 (198)	54.0 (216)	64.0 (252)	74.0 (294)	1.16
50 (3.44)	0.21 (0.86)	0.29 (1.20)	0.49 (2.02)	0.98 (4.00)	1.40 (5.70)	0.83	1.70 (7.00)	2.80 (11.8)	4.50 (18.4)	1.25	7.00 (28.4)	9.20 (36.0)	13.0 (52.0)	0.85	13.8 (58.0)	21.2 (86.0)	26.8 (108)	33.2 (136)	38.8 (160)	1.15	46.6 (190)	56.5 (230)	61.0 (250)	71.4 (292)	83.0 (340)	1.15
60 (4.13)	0.23 (0.91)	0.32 (1.27)	0.54 (2.14)	1.10 (4.20)	1.50 (6.08)	0.85	1.80 (7.40)	3.10 (12.5)	4.90 (19.5)	1.15	7.60 (30.0)	10.0 (38.0)	14.4 (55.0)	0.82	15.0 (59.3)	23.0 (91.0)	29.5 (114)	36.3 (144)	42.5 (170)	0.95	51.0 (200)	62.0 (244)	66.5 (265)	78.0 (310)	91.0 (360)	0.95
70 (4.82)	0.25 (0.96)	0.35 (1.34)	0.58 (2.25)	1.20 (4.40)	1.65 (6.40)	0.88	2.00 (7.80)	3.30 (13.1)	5.30 (20.5)	1.08	8.20 (31.6)	10.8 (40.0)	15.5 (58.0)	0.80	16.3 (62.0)	25.0 (96.0)	31.8 (120)	39.3 (152)	46.0 (178)	0.90	55.0 (212)	67.0 (256)	71.0 (278)	84.5 (325)	98.0 (380)	0.90
80 (5.51)	0.27 (1.05)	0.37 (1.47)	0.62 (2.47)	1.30 (4.90)	1.80 (7.00)	0.85	2.15 (8.50)	3.60 (14.4)	5.70 (22.5)	1.00	8.70 (34.8)	11.6 (44.0)	16.6 (63.0)	0.78	17.4 (68.0)	27.0 (105)	34.0 (132)	42.0 (166)	49.0 (195)	0.80	59.0 (232)	71.0 (280)	77.0 (306)	90.0 (357)	106 (416)	0.80
100 (6.9)	0.30 (1.13)	0.42 (1.60)	0.70 (2.66)	1.40 (5.20)	2.00 (7.50)	0.83	2.40 (9.20)	4.00 (15.5)	6.40 (24.3)	0.95	9.80 (37.5)	13.0 (47.5)	18.5 (68.5)	0.75	19.5 (74.0)	30.0 (113)	38.0 (142)	47.0 (180)	55.0 (210)	0.80	66.0 (250)	80.0 (300)	86.0 (330)	100 (385)	118 (445)	0.80
120 (8.27)	0.33 (1.21)	0.46 (1.70)	0.76 (2.84)	1.50 (5.60)	2.20 (8.10)	0.80	2.60 (9.80)	4.30 (16.6)	7.00 (26.0)	0.90	10.7 (40.0)	14.2 (50.7)	20.0 (73.0)	0.70	21.3 (78.0)	32.8 (120)	41.5 (152)	51.5 (190)	60.0 (225)	0.75	72.0 (268)	87.0 (325)	94.0 (350)	110 (410)	130 (480)	0.75
Nozzle Dia. ("E" – inches)	0.038	0.042	0.052	0.070	0.086	—	0.098	.125	.157	—	.188	.219	.250	—	.281	.312	.359	.406	.438	—	.469	.500	.547	.578	.625	—
Throat Dia. ("F" – inches)	0.076	0.086	.104	.140	.172	—	.196	.250	.312	—	.375	.438	.500	—	.562	.625	.719	.812	.875	—	.938	1.000	1.094	1.156	1.250	—

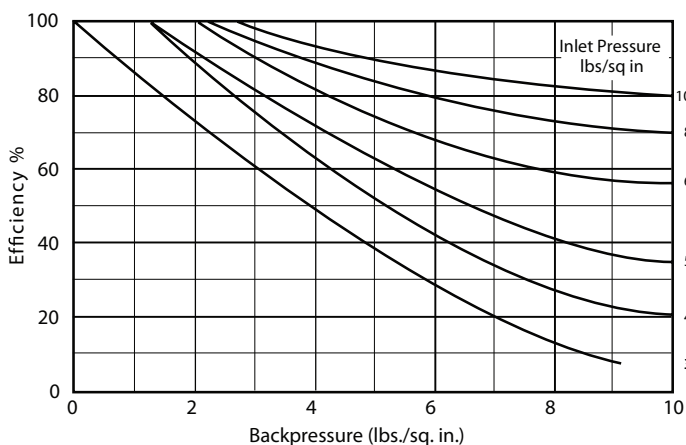
Data based on: 1. Water media specific gravity 1.0; 2. Suction lift 3 ft. (1 meter); 3. Discharge head 0 ft. or meters; 4. Media temperature 60°F (15°C)

Specific Gravity Chart

Fluid	Specific Gravity	Fluid	Specific Gravity	Fluid	Specific Gravity
Saturated Brine (Na Cl)	1.2	Sodium Hydroxide (50%)	1.52	Sodium Hydroxide (25%)	1.16
Hydrochloric Acid (30%)	1.14	Sulphuric Acid (20%)	1.13		

Fig. 1: Efficiency vs. Backpressure

At different inlet pressure. Suction lift 3 feet (1 m).



To Calculate Drawrate

Where A = Nozzle flowrate; B = Specific gravity; C = Draw factor; D = Efficiency factor
 Drawrate = $\frac{(A)(C)(D)}{B}$

Example:

Find drawrate for 30% hydrochloric acid at inlet pressure of 60 psi and back pressure of 5 psi for 1" blue code ejector.

From Nozzle Flowrate Table: At 60 psi, Series 542-3
 A = Nozzle flowrate = 14.4 gal./min.
 C = Draw factor = 0.82

From Specific Gravity Chart: B = S.G. of 30% HCL = 1.14

From Efficiency Table (Fig. 1): D = 5 psi backpressure @ 60 psi inlet pressure = 77%

$$\text{Drawrate} = \frac{(14.4)(0.82)(.77)}{1.14} = 7.97 \text{ gal./min.}$$

How to Order

1. Select series number based on required pipe size.
2. Add "S" suffix to series number if socket weld ends desired.
3. Add nozzle size suffix as determined by supply pressure and required flow (see example).

Example:

540-3, 1/2", red code threaded ejector; 540S-3, 1/2", red code socket weld ejector

AQMATIC SALES

P O Box 2272, Kernersville, NC 27285

P: 336.595.7400 | F: 336.595.9555 | WWW.BUYAQ-MATIC.COM | CUSTOMER CARE: 336.462.1926

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