

AQ Matic® Fluid Ejectors

Commercial control valve accessories



OPERATING SPECIFICATIONS

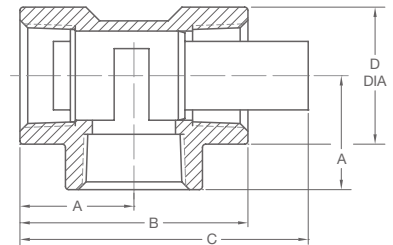
Min Operating Pressure	20 psi (1.37)
Max Operating Pressure	125 psi (8.6 bars)
Operating Temperature	up to 140°F (60°)
Body Material	PVC

For optimum performance, ejectors should be installed with a section of straight pipe extending from the discharge side.

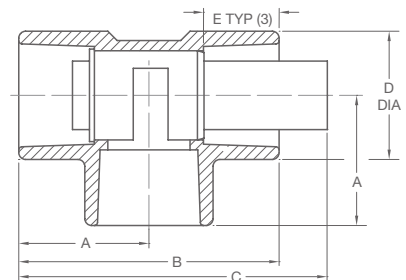
DIMENSIONS (NOMINAL & APPROXIMATE)

MODEL #	SIZE		DIAMETER				
	NPT	SOCKET	A	B	C	D	E
540	1/2"	-	1.24" (32 mm)	2.50" (64 mm)	-	1.19" (30 mm)	-
540S	-	1/2"	1.37" (35 mm)	2.75" (70 mm)	-	1.31" (33 mm)	0.88" (22 mm)
541	3/4"	-	1.72" (44 mm)	3.44" (88 mm)	-	1.5" (40 mm)	-
541S	-	3/4"	1.72" (44 mm)	3.44" (88 mm)	-	1.56" (40 mm)	1" (25 mm)
542	1"	-	1.72" (44 mm)	3.44" (88 mm)	-	1.81" (46 mm)	-
542S	-	1"	1.88" (48 mm)	3.75" (96 mm)	-	1.81" (46 mm)	1.13" (20 mm)
544	1-1/2"	-	2.09" (53 mm)	4.19" (106 mm)	5.25" (143 mm)	2.38" (60 mm)	-
544S	-	1-1/2"	2.38" (60 mm)	4.75" (120 mm)	5.63" (143 mm)	2.38" (60 mm)	1.38" (35 mm)
546	2"	-	2.78" (71 mm)	5.56" (168 mm)	6.63" (168 mm)	3" (76 mm)	-
546S	-	2"	2.78" (71 mm)	5.56" (168 mm)	6.63" (168 mm)	3.06" (78 mm)	1.5" (38 mm)

NPT



Socket Weld



PERFORMANCE

INLET PRESSURE PSI (BAR)	NOZZLE FLOW RATES - GAL/MIN (L/MIN)													
	540 (1/2")						541 (3/4")				542 (1")			
	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
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
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
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
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
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
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
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
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
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
Nozzle Dia. E	0.038	0.042	0.052	0.070	0.086	-	0.098	0.125	0.157	-	0.188	0.219	0.250	-
Throat Dia. F	0.076	0.086	0.104	0.140	0.172	-	0.196	0.250	0.312	-	0.375	0.438	0.500	-

INLET PRESSURE PSI (BAR)	NOZZLE FLOW RATES - GAL/MIN (L/MIN)											
	544 (1-1/2")						546 (2")					
	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)	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)	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)	12.3 (48.4)	19.0 (71.2)	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)	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)	15.0 (66.3)	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)	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)	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)	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)	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	0.281	0.312	0.359	0.406	0.438	-	0.469	0.500	.0547	0.578	0.625	-
Throat Dia. F	0.562	0.625	0.719	0.812	0.875	-	0.938	1.000	1.094	1.156	1.250	-

Data based on: 1. Water media specific gravity 1.0;
3. Discharge head 0 ft. or meters;

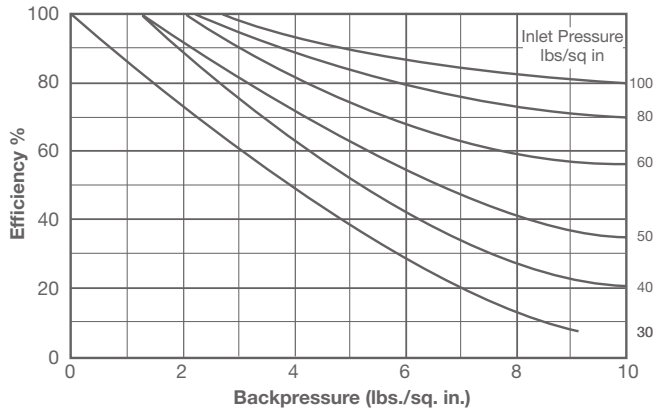
2. Suction lift 3 ft. (1 meter);
4. Media temperature 60°F (15°C)



PERFORMANCE

Fig. 1: Efficiency vs. Backpressure

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



SPECIFIC GRAVITY

FLUID	SPECIFIC GRAVITY
Saturated Brine (NaCl)	1.2
Hydrochloric Acid (30%)	1.14
Sodium Hydroxide (50%)	1.52
Sulphuric Acid (20%)	1.13
Sodium Hydroxide (25%)	1.16

DRAW RATE

TO CALCULATE DRAWRATE

A = Nozzle flowrate

B = Specific gravity

C = Draw factor

D = Efficiency factor

$$\text{Drawrate} = \frac{(A) (C) (D)}{B}$$

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).

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