



Flow Regulators are usually mounted behind cultivator shanks for the subsurface application of liquid fertilizers and soil fumigants. They are also used for above-ground streaming applications.

How to order:

Specify orifice plate number.
Example: CP4916-008



Note: Always insert Orifice Plate with side marked with number facing the outlet.

MATERIAL: Stainless Steel

Tip Strainer Size Recommendation

FOR ORIFICE SIZE	USE MESH SIZE
15 and smaller	200
16-39	100
40-70	50
72 and larger	—

Typical Assembly



To determine the orifice plates you need, use the following equations:

$$\text{GPM (Per Nozzle)} = \frac{\text{GPA} \times \text{MPH} \times \text{W}}{5,940}$$

$$\text{GPA} = \frac{5,940 \times \text{GPM (Per Nozzle)}}{\text{MPH} \times \text{W}}$$

- W = Nozzle spacing (in inches) for broadcast spraying.
- = Spray width (in inches) for single nozzle, band spraying or boomless spraying.
- = Row spacing (in inches) divided by the number of nozzles per row for directed spraying.

Tabulated flow rates are for spraying water into air at atmospheric pressure. If your application creates backpressure, or if spraying into a liquid, measure and calibrate to ensure proper application rates. For spraying solutions other than water, see page 141 for conversion factors.

Orifice Plate	GPM						
	5 PSI	10 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI
CP4916-008	0.003	0.004	0.006	0.007	0.008	0.009	0.010
CP4916-10	0.005	0.007	0.009	0.011	0.013	0.015	0.016
CP4916-12	0.007	0.010	0.013	0.016	0.019	0.021	0.023
CP4916-14	0.009	0.013	0.018	0.022	0.025	0.028	0.031
CP4916-15	0.010	0.015	0.021	0.025	0.029	0.032	0.036
CP4916-16	0.012	0.017	0.023	0.029	0.033	0.037	0.040
CP4916-18	0.015	0.021	0.030	0.036	0.042	0.047	0.051
CP4916-20	0.018	0.026	0.037	0.045	0.052	0.058	0.064
CP4916-22	0.022	0.031	0.043	0.053	0.061	0.068	0.075
CP4916-24	0.026	0.037	0.052	0.064	0.074	0.083	0.091
CP4916-25	0.028	0.040	0.056	0.068	0.079	0.088	0.097
CP4916-26	0.030	0.043	0.061	0.074	0.086	0.096	0.105
CP4916-27	0.032	0.046	0.064	0.079	0.091	0.102	0.111
CP4916-28	0.035	0.049	0.069	0.085	0.098	0.110	0.120
CP4916-29	0.038	0.054	0.076	0.094	0.108	0.121	0.132
CP4916-30	0.040	0.057	0.081	0.099	0.114	0.127	0.140
CP4916-31	0.043	0.062	0.087	0.107	0.123	0.138	0.151
CP4916-32	0.048	0.068	0.095	0.117	0.135	0.151	0.165
CP4916-34	0.052	0.074	0.104	0.127	0.147	0.164	0.180
CP4916-35	0.056	0.079	0.111	0.136	0.157	0.176	0.192
CP4916-37	0.061	0.086	0.122	0.149	0.172	0.192	0.211
CP4916-39	0.068	0.096	0.135	0.165	0.191	0.214	0.234
CP4916-40	0.072	0.102	0.144	0.177	0.204	0.228	0.250
CP4916-41	0.075	0.106	0.149	0.183	0.211	0.236	0.258
CP4916-43	0.082	0.116	0.163	0.200	0.231	0.258	0.283
CP4916-45	0.088	0.125	0.177	0.217	0.250	0.280	0.306
CP4916-46	0.095	0.135	0.191	0.234	0.270	0.302	0.331

Orifice Plate	GPM						
	5 PSI	10 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI
CP4916-47	0.097	0.138	0.194	0.238	0.275	0.307	0.337
CP4916-48	0.101	0.143	0.202	0.248	0.286	0.320	0.350
CP4916-49	0.104	0.148	0.209	0.255	0.295	0.330	0.361
CP4916-51	0.116	0.165	0.233	0.285	0.329	0.368	0.403
CP4916-52	0.118	0.168	0.237	0.290	0.335	0.375	0.410
CP4916-54	0.127	0.180	0.255	0.312	0.360	0.402	0.441
CP4916-55	0.133	0.189	0.267	0.326	0.377	0.421	0.462
CP4916-57	0.141	0.200	0.283	0.346	0.400	0.447	0.490
CP4916-59	0.153	0.217	0.306	0.375	0.433	0.484	0.530
CP4916-61	0.165	0.233	0.330	0.404	0.466	0.521	0.571
CP4916-63	0.174	0.246	0.347	0.425	0.491	0.549	0.601
CP4916-65	0.185	0.261	0.369	0.452	0.522	0.584	0.639
CP4916-67	0.196	0.278	0.392	0.481	0.555	0.621	0.680
CP4916-68	0.203	0.287	0.405	0.496	0.573	0.641	0.702
CP4916-70	0.216	0.306	0.433	0.530	0.612	0.684	0.750
CP4916-72	0.226	0.320	0.453	0.554	0.640	0.716	0.784
CP4916-73	0.233	0.330	0.467	0.572	0.660	0.738	0.808
CP4916-75	0.245	0.347	0.491	0.601	0.694	0.776	0.850
CP4916-78	0.272	0.385	0.544	0.667	0.770	0.861	0.943
CP4916-80	0.280	0.397	0.561	0.687	0.793	0.887	0.971
CP4916-81	0.290	0.411	0.581	0.711	0.821	0.918	1.01
CP4916-83	0.317	0.449	0.634	0.777	0.897	1.00	1.10
CP4916-86	0.332	0.470	0.664	0.813	0.939	1.05	1.15
CP4916-89	0.346	0.490	0.693	0.849	0.980	1.10	1.20
CP4916-91	0.369	0.523	0.739	0.905	1.05	1.17	1.28
CP4916-93	0.387	0.547	0.774	0.947	1.09	1.22	1.34
CP4916-95	0.404	0.572	0.808	0.990	1.14	1.28	1.40

Orifice Plate	GPM						
	5 PSI	10 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI
CP4916-98	0.442	0.625	0.884	1.08	1.25	1.40	1.53
CP4916-103	0.461	0.653	0.923	1.13	1.31	1.46	1.60
CP4916-107	0.518	0.733	1.04	1.27	1.47	1.64	1.79
CP4916-110	0.548	0.775	1.10	1.34	1.55	1.73	1.90
CP4916-115	0.605	0.855	1.21	1.48	1.71	1.91	2.09
CP4916-120	0.629	0.890	1.26	1.54	1.78	1.99	2.18
CP4916-125	0.693	0.980	1.39	1.70	1.96	2.19	2.40
CP4916-128	0.721	1.02	1.44	1.77	2.04	2.28	2.50
CP4916-132	0.774	1.10	1.55	1.90	2.19	2.45	2.68
CP4916-136	0.840	1.19	1.68	2.06	2.38	2.66	2.91
CP4916-140	0.894	1.27	1.79	2.19	2.53	2.83	3.10
CP4916-144	0.926	1.31	1.85	2.27	2.62	2.93	3.21
CP4916-147	0.953	1.35	1.91	2.33	2.70	3.01	3.30
CP4916-151	1.04	1.47	2.08	2.55	2.94	3.29	3.60
CP4916-156	1.10	1.55	2.20	2.69	3.11	3.47	3.80
CP4916-161	1.15	1.63	2.31	2.83	3.27	3.65	4.00
CP4916-166	1.21	1.72	2.43	2.97	3.43	3.84	4.20
CP4916-170	1.30	1.84	2.61	3.19	3.69	4.12	4.51
CP4916-172	1.36	1.92	2.71	3.32	3.84	4.29	4.70
CP4916-177	1.41	2.00	2.83	3.46	4.00	4.47	4.90
CP4916-182	1.47	2.08	2.95	3.61	4.17	4.66	5.10
CP4916-187	1.56	2.21	3.12	3.82	4.41	4.93	5.40
CP4916-196	1.73	2.45	3.46	4.24	4.90	5.47	6.00
CP4916-205	1.88	2.65	3.75	4.59	5.31	5.93	6.50
CP4916-218	2.11	2.98	4.21	5.16	5.96	6.66	7.30
CP4916-234	2.45	3.47	4.91	6.01	6.94	7.76	8.50
CP4916-250	2.83	4.00	5.66	6.93	8.00	8.94	9.80

Note: Always double check your application rates. Tabulations are based on spraying water at 70°F (21°C). See pages 136-157 for useful formulas and other information.

Technical Information

Spraying Liquids with a Density Other Than Water

Since all the tabulations in this catalog are based on spraying water, which weighs 8.34 lbs. per USA gallon, conversion factors must be used when spraying liquids that are heavier or lighter than water. To determine the proper size nozzle for the liquid to be sprayed, first multiply the desired GPM or GPA of liquid by the water rate conversion factor. Then use the new converted GPM or GPA rate to select the proper size nozzle.

Example:

Desired application rate is 20 GPA of 28%N. Determine the correct nozzle size as follows:

$$\begin{aligned} &\text{GPA (liquid other than water)} \times \\ &\text{Conversion Factor} \\ &= \text{GPA (from table in catalog)} \end{aligned}$$

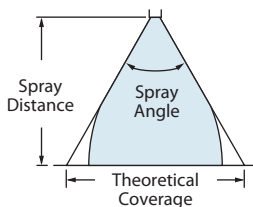
$$\begin{aligned} &20 \text{ GPA (28\%)} \times 1.13 \\ &= 22.6 \text{ GPA (water)} \end{aligned}$$

The applicator should choose a nozzle size that will supply 22.6 GPA of water at the desired pressure.

WEIGHT OF SOLUTION	SPECIFIC GRAVITY	CONVERSION FACTOR
7.0 lbs./gal.	.84	.92
8.0 lbs./gal.	.96	.98
8.34 lbs./gal.	1.00 – WATER	1.00
9.0 lbs./gal.	1.08	1.04
10.0 lbs./gal.	1.20	1.10
10.65 lbs./gal.	1.28 – 28% nitrogen	1.13
11.0 lbs./gal.	1.32	1.15
12.0 lbs./gal.	1.44	1.20
14.0 lbs./gal.	1.68	1.30

Spray Coverage Information

This table lists the theoretical coverage of spray patterns as calculated from the included spray angle of the spray and the distance from the nozzle orifice. These values are based on the assumption that the spray angle remains the same throughout the entire spray distance. In actual practice, the tabulated spray angle does not hold for long spray distances.



INCLUDED SPRAY ANGLE	THEORETICAL COVERAGE AT VARIOUS SPRAY HEIGHTS (IN INCHES)							
	8"	10"	12"	15"	18"	24"	30"	36"
15°	2.1	2.6	3.2	3.9	4.7	6.3	7.9	9.5
20°	2.8	3.5	4.2	5.3	6.4	8.5	10.6	12.7
25°	3.5	4.4	5.3	6.6	8.0	10.6	13.3	15.9
30°	4.3	5.4	6.4	8.1	9.7	12.8	16.1	19.3
35°	5.0	6.3	7.6	9.5	11.3	15.5	18.9	22.7
40°	5.8	7.3	8.7	10.9	13.1	17.5	21.8	26.2
45°	6.6	8.3	9.9	12.4	14.9	19.9	24.8	29.8
50°	7.5	9.3	11.2	14.0	16.8	22.4	28.0	33.6
55°	8.3	10.3	12.5	15.6	18.7	25.0	31.2	37.5
60°	9.2	11.5	13.8	17.3	20.6	27.7	34.6	41.6
65°	10.2	12.7	15.3	19.2	22.9	30.5	38.2	45.8
73°	11.8	14.8	17.8	22.0	27.0	36.0	44.0	53.0
80°	13.4	16.8	20.2	25.2	30.3	40.3	50.4	60.4
85°	14.7	18.3	22.0	27.5	33.0	44.0	55.4	66.4
90°	16.0	20.0	24.0	30.0	36.0	48.0	60.0	72.0
95°	17.5	21.8	26.2	32.8	40.3	52.4	65.5	78.6
100°	19.1	23.8	28.6	35.8	43.0	57.2	71.6	85.9
110°	22.8	28.5	34.3	42.8	51.4	68.5	85.6	103
120°	27.7	34.6	41.6	52.0	62.4	83.2	104	
130°	34.3	42.9	51.5	64.4	77.3	103		
140°	43.8	54.8	65.7	82.2	98.6			
150°	59.6	74.5	89.5					

Nozzle Nomenclature

There are many types of nozzles available, with each providing different flow rates, spray angles, droplet sizes and patterns. Some of these spray tip characteristics are indicated by the tip number.

Remember, when replacing tips, be sure to purchase the same tip number, thereby ensuring your sprayer remains properly calibrated.

