

Calibration options when applying XtendiMax, FeXapan, and Engenia Using a 15-inch nozzle spacing and an 04 orifice.

Prepared by Robert E. Wolf, Feb. 18, 2017

What are the speed and pressure options/limitations when using the recommended GPA and MPH options for XtendiMax and Engenia?				
04 with 15-inch nozzle spacing only – determining the useable PSI (Range 45-65 ¹)				
GPA ²	MPH ³	Calculated GPM ⁴	Calculated PSI ⁵	Use – Yes or NO ⁶
12	13	.39	38.0	NO
12	14	.42	44.1	NO
12	15	.45	50.6	YES
13	12	.39	38.0	NO
13	13	.43	46.2	YES
13	14	.46	52.9	YES
13	15	.49	60.0	YES
14	11	.39	38.0	NO
14	12	.42	44.1	NO
14	13	.46	52.9	YES
14	14	.49	60.0	YES
14	15	.53	70.2	NO
15	10	.38	36.1	NO
15	11	.42	44.1	NO
15	12	.45	50.6	YES
15	13	.49	60.0	YES
15	14	.53	70.2	NO
16	10	.40	40.0	NO
16	11	.44	48.4	YES
16	12	.48	57.6	YES
16	13	.53	70.2	NO
17	10	.43	46.2	YES
17	11	.47	55.2	YES
17	12	.52	67.6	NO
18	10	.45	50.6	YES
18	11	.50	62.5	YES
18	12	.55	75.6	NO
19	10	.48	57.6	YES
19	11	.53	70.2	NO
20	10	.51	65.0	YES (Engenia)
20	11	.56	78.4	NO

¹The XtendiMax label specifies a maximum pressure of 63 PSI. The Engenia label does not specify a maximum pressure, but suggests not to exceed the nozzle manufacturer's suggested limits. As a safety factor when using Engenia, to limit the driftable fines, it is suggested not to exceed 65 psi. Neither label specifies a minimum pressure. Thus, based on research, and through years of experience working with this nozzle type, the author is suggesting a lower pressure cut-off at 45 psi. Using a lower pressure with the TTI nozzle may result in a poor pattern, with larger than needed droplet sizes, with the possibility of reduced coverage and weed control.

²The label specifies a minimum of 10 GPA.

³The label specifies a maximum driving speed of 15 MPH. Speeds below 10 MPH would be acceptable, but do the math first to determine the proper combination! Remember – the pressure gauge should be used as your speedometer!

⁴The following formula was used to determine GPM: $GPM = GPA * MPH * 15 / 5940$

⁵The usable pressure is determined with the following formula: $GPM_1 / GPM_2 = \sqrt{PSI_1} / \sqrt{PSI_2}$

⁶As shown by the calculations in this table, there are several more options when working with the 15-inch nozzle spacing. The YES-options are identified in green in the above table. The NO-options are in red.

Calibration options when applying XtendiMax, FeXapan, and Engenia Using a 20-inch nozzle spacing and an 04 orifice.

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What are the speed and pressure options/limitations when using the recommended GPA and MPH options for XtendiMax and Engenia?				
11004 with 20-inch nozzle spacing only – determining the useable PSI (Range 45-65 ¹)				
GPA ²	MPH ³	Calculated GPM ⁴	Calculated PSI ⁵	Use – Yes or NO ⁶
10	10	.34	28.9	NO
10	11	.37	34.2	NO
10	12	.40	40.0	NO
10	13	.44	48.4	YES
10	14	.47	55.2	YES
10	15	.51	65.0	YES (Engenia)
11	10	.37	34.2	NO
11	11	.41	42.0	NO
11	12	.44	48.4	YES
11	13	.48	57.6	YES
11	14	.52	67.6	NO
11	15	.56	78.4	NO
12	10	.40	40.0	NO
12	11	.44	48.4	YES
12	12	.48	57.6	YES
12	13	.53	70.2	NO
12	14	.57	81.2	NO
12	15	.61	93.2	NO
13	10	.44	48.4	YES
13	11	.48	57.6	YES
13	12	.53	70.2	NO
14	10	.47	55.2	YES
14	11	.52	67.6	NO
14	12	.57	81.2	NO
15	10	.51	65.0	YES (Engenia)
15	11	.56	78.4	NO
16	10	.54	72.9	NO

¹The XtendiMax label specifies a maximum pressure of 63 PSI. The Engenia label does not specify a maximum pressure, but suggests not to exceed the nozzle manufacturer's suggested limits. As a safety factor when using Engenia, to limit the driftable fines, it is suggested not to exceed 65 psi. Neither label specifies a minimum pressure. Thus, based on research, and through years of experience working with this nozzle type, the author is suggesting a lower pressure cut-off at 45 psi. Using a lower pressure with the TTI nozzle may result in a poor pattern, with larger than needed droplet sizes, with the possibility of reduced coverage and weed control.

²The label specifies a minimum of 10 GPA.

³The label specifies a maximum driving speed of 15 MPH. Speeds below 10 MPH would be acceptable. Remember – the pressure gauge should be used as your speedometer!

⁴The following formula was used to determine GPM: $GPM = GPA * MPH * 20 / 5940$

⁵The usable pressure is determined with the following formula: $GPM_1 / GPM_2 = \sqrt{PSI_1} / \sqrt{PSI_2}$

⁶As shown by the calculations in this table, there are a limited number of options when adhering to the GPA, MPH, and PSI parameters specified for applying XtendiMax and Engenia. As shown above, to use the maximum speed of 15 MPH, then 10 GPA at 65 PSI would be the result. When considering a maximum GPA, then 15 GPA would be possible at 10 MPH, also at 65 PSI. In total, when using the TTI 11004, there are only 11 combinations that will meet specifications. There would be other options for higher GPA's at speeds below 10 MPH. Those 11 YES-options are identified in green in the above table. The NO-options are in red.