

PWMA Standard

**MARKING STANDARD FOR SPRAY
NOZZLES USED WITH PORTABLE
PRESSURE WASHERS**

Pressure Washer Manufacturers' Association

Sponsor:



1300 Sumner Avenue
Cleveland, Ohio 44115-2851
www.pwma.org

PWMA PW301-2019

PRESSURE WASHER MANUFACTURERS' ASSOCIATION
MARKING STANDARD FOR SPRAY NOZZLES USED WITH PORTABLE PRESSURE WASHERS

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Suggestions for improvement of this standard will be welcome. They should be sent to the Pressure Washer Manufacturers' Association.

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Foreword (This foreword is included for information only and is not part of PWMA PW301-2019 MARKING STANDARD FOR SPRAY NOZZLES USED WITH PORTABLE PRESSURE WASHERS)

The following standard has been developed by the Technical Committee of the Pressure Washer Manufacturers' Association (PWMA) as an assistance and guide to the manufacturers, purchasers, and users of pressure washers. It is intended as a reference to provide a marking standard for Spray Nozzles used with Portable Pressure Washers. The standard was reaffirmed in 2019.

PWMA recognizes the need to periodically review and update this standard. Suggestions for improvement should be forwarded to the Pressure Washer Manufacturers' Association, 1300 Sumner Avenue, Cleveland, Ohio 44115-2851. All constructive suggestions for expansion and revision of this standard are welcome.

The existence of a Pressure Washer Manufacturers' Association standard does not in any respect preclude any member or non-member from manufacturing or selling products not conforming to this standard nor is the PWMA responsible for its use.

PWMA STANDARD

PW301-2019

MARKING STANDARD FOR SPRAY NOZZLES USED WITH PORTABLE PRESSURE WASHERS

1.0 PURPOSE

The purpose of this standard is to provide a Marking method for Spray Nozzles used with Pressure washers to help indicate Pressure/Flow Rating as well as Spray Angle. Spray Nozzles are used to dispense water at various pressure and flows as well as at various spray angles.

2.0 SCOPE

This standard lays down the methodology to markings used to indicate pressure, flow and spray angle. This standard applies to pressure washers intended for the household, farm, consumer, or commercial/industrial markets. The pressure washers covered by this standard are portable, engine or electric motor driven, in which the discharge line is hand supported and manipulated.

3.0 DEFINITIONS

3.1 Size Rating: A reference code that would be used to indicate the size of the nozzle orifice.

3.2 Spray Angle Rating: A reference code that would be used to indicate the spray angle of the discharge from the nozzle orifice.

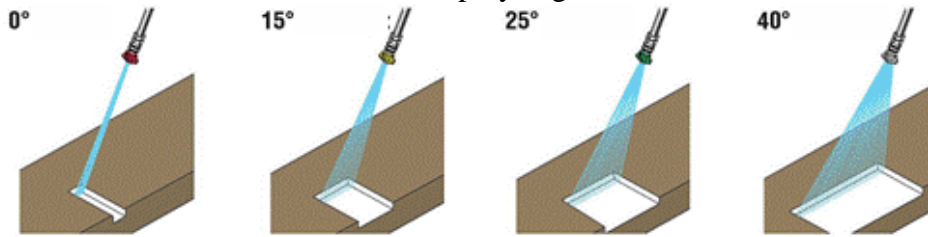
4.0 IDENTIFICATION STATEMENT

The following statement may be used in test reports, catalogues and sales literature when electing to comply with this standard.

“Nozzle Marking Requirements conform to PW301-2012, Marking Standard for Spray Nozzles used with Portable Pressure Washers.”

5.0 DETERMINE NOZZLE SPRAY ANGLE

Determine the nozzle spray angle by performance testing the nozzle at 1000psi while discharging against a backdrop or otherwise to determine the value of the spray angle.



6.0 DETERMINE NOZZLE SIZE

Determine the nozzle size by measuring the flow (GPM – gallons per minute) of a nozzle at 4000psi.

Standard Nozzle Size	Pounds Per Square Inch (PSI)																
	500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	3250	3500	3750	4000	4500	5000
2	0.71	0.87	1.00	1.12	1.22	1.32	1.41	1.50	1.58	1.66	1.73	1.80	1.87	1.94	2.00	2.12	2.24
2.5	0.88	1.08	1.25	1.40	1.53	1.65	1.77	1.88	1.98	2.07	2.17	2.25	2.34	2.42	2.50	2.65	2.80
3	1.06	1.30	1.50	1.68	1.84	1.98	2.12	2.25	2.37	2.49	2.60	2.70	2.81	2.90	3.00	3.18	3.35
3.5	1.24	1.52	1.75	1.96	2.14	2.32	2.47	2.63	2.77	2.90	3.03	3.15	3.27	3.39	3.50	3.71	3.91
4	1.41	1.73	2.00	2.24	2.45	2.65	2.83	3.00	3.16	3.32	3.46	3.61	3.74	3.87	4.00	4.24	4.47
4.5	1.59	1.95	2.25	2.52	2.76	2.98	3.18	3.38	3.56	3.73	3.90	4.06	4.21	4.36	4.50	4.77	5.03
5	1.77	2.17	2.50	2.80	3.06	3.31	3.54	3.75	3.95	4.15	4.33	4.51	4.68	4.84	5.00	5.30	5.59
5.5	1.94	2.38	2.75	3.07	3.37	3.64	3.89	4.13	4.35	4.56	4.76	4.96	5.14	5.33	5.50	5.83	6.15
6	2.12	2.60	3.00	3.35	3.67	3.97	4.24	4.50	4.74	4.97	5.20	5.41	5.61	5.81	6.00	6.36	6.71
6.5	2.30	2.81	3.25	3.63	3.98	4.30	4.60	4.88	5.14	5.39	5.63	5.86	6.08	6.29	6.50	6.89	7.27
7	2.47	3.03	3.50	3.91	4.29	4.63	4.95	5.25	5.53	5.80	6.06	6.31	6.55	6.78	7.00	7.42	7.83
7.5	2.65	3.25	3.75	4.19	4.59	4.96	5.30	5.63	5.93	6.22	6.50	6.76	7.02	7.26	7.50	7.95	8.39
8	2.83	3.46	4.00	4.47	4.90	5.29	5.66	6.00	6.32	6.63	6.93	7.21	7.48	7.75	8.00	8.49	8.94
8.5	3.01	3.68	4.25	4.75	5.21	5.62	6.01	6.38	6.72	7.05	7.36	7.66	7.95	8.23	8.50	9.02	9.50
9	3.18	3.90	4.50	5.03	5.51	5.95	6.36	6.75	7.12	7.46	7.79	8.11	8.42	8.71	9.00	9.55	10.06
9.5	3.36	4.11	4.75	5.31	5.82	6.28	6.72	7.13	7.51	7.88	8.23	8.56	8.89	9.20	9.50	10.08	10.62
10	3.54	4.33	5.00	5.59	6.12	6.61	7.07	7.50	7.91	8.29	8.66	9.01	9.35	9.68	10.00	10.61	11.18
11	3.89	4.76	5.50	6.15	6.74	7.28	7.78	8.25	8.70	9.12	9.53	9.92	10.29	10.65	11.00	11.67	12.30
12	4.24	5.20	6.00	6.71	7.35	7.94	8.49	9.00	9.49	9.95	10.39	10.82	11.22	11.62	12.00	12.73	13.42
12.5	4.42	5.41	6.25	6.99	7.65	8.27	8.84	9.38	9.88	10.36	10.83	11.27	11.69	12.10	12.50	13.26	13.98
13	4.60	5.63	6.50	7.27	7.96	8.60	9.19	9.75	10.28	10.78	11.26	11.72	12.16	12.59	13.00	13.79	14.53
15	5.30	6.50	7.50	8.39	9.19	9.92	10.61	11.25	11.86	12.44	12.99	13.52	14.03	14.52	15.00	15.91	16.77
20	7.07	8.66	10.00	11.18	12.25	13.23	14.14	15.00	15.81	16.58	17.32	18.03	18.71	19.36	20.00	21.21	22.36
25	8.84	10.83	12.50	13.98	15.31	16.54	17.68	18.75	19.76	20.73	21.65	22.53	23.39	24.21	25.00	26.52	27.95
30	10.61	12.99	15.00	16.77	18.37	19.84	21.21	22.50	23.72	24.87	25.98	27.04	28.06	29.05	30.00	31.82	33.54
40	14.14	17.32	20.00	22.36	24.49	26.46	28.28	30.00	31.62	33.17	34.64	36.06	37.42	38.73	40.00	42.43	44.72
50	17.68	21.65	25.00	27.95	30.62	33.07	35.36	37.50	39.53	41.46	43.30	45.07	46.77	48.41	50.00	53.03	55.90
60	21.21	25.98	30.00	33.54	36.74	39.69	42.43	45.00	47.43	49.75	51.96	54.08	56.12	58.09	60.00	63.64	67.08

Figure 1

7.0 DETERMINE NOZZLE MARKINGS

Nozzle size and Spray angle will be represented by a 5 digit numeric set composed as follows:

1. The first two numeric digits represent the spray discharge angle as per section 5.0
2. The following three numeric digits represent the nozzle size as per section 6.0

Example of a size 027, 15 degree nozzle:

