

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](http://www.pwma.org)

**PWMA PW301-2019**

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

Sponsor

**Pressure Washer Manufacturers' Association**

A Pressure Washer Manufacturers' Association (PWMA) standard is intended as a guide to aid the manufacturer, the consumer, and the general public. The existence of a PWMA standard does not in any respect preclude anyone, whether he has approved the standard or not, from manufacturing, marketing, purchasing or using products, processes, or procedures not conforming to the standard. Pressure Washer Manufacturers' Association standards are subject to periodic review and users are cautioned to obtain the latest editions.

## **CAUTION NOTICE:**

This Pressure Washer Manufacturers' Association standard may be revised or withdrawn at any time. The procedures of the PWMA require that action be taken to reaffirm, revise, or withdraw this standard no later than five years from the date of publication. Purchasers of PWMA standards may receive current information on all standards by calling or writing the Pressure Washer Manufacturers' Association.

Sponsored and published by:  
**PRESSURE WASHER MANUFACTURERS' ASSOCIATION**  
1300 Sumner Avenue  
Cleveland, OH 44115-2851  
Phn: 216/241-7333  
Fax: 216/241-0105  
E-Mail: [pwma@pwma.org](mailto:pwma@pwma.org)  
URL: [www.pwma.org](http://www.pwma.org)

Copyright © 2019 by Pressure Washer Manufacturers' Association  
All Rights Reserved

No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without the prior written permission of the publisher.

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

Printed in the United States of America

## CONTENTS

## PAGE

<b>Foreword</b> .....	v
1. Purpose .....	1
2. Scope .....	1
3. Definitions .....	1
4. Identification Statement.....	1
5. Spray Angle .....	2
6. Nozzle Size.....	2
7. Identification Marking.....	3

## FIGURES

1. Figure 1.....	2
------------------	---

**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.

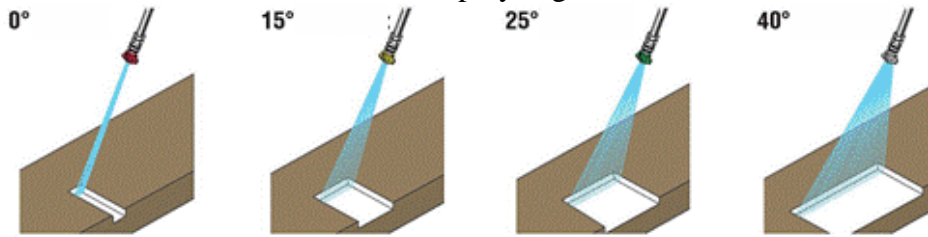
#### **4.0 IDENTIFICATION STATEMENT**

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:

