

PTO Form 1860 (Rev 9/2007)

OMB No. xxx-xxxx (Exp. x/xxxx)

Request for Reconsideration after Final Action

The table below presents the data as entered.

Input Field	Entered
SERIAL NUMBER	78867933
LAW OFFICE ASSIGNED	LAW OFFICE 114
MARK SECTION (current)	
STANDARD CHARACTERS	NO
USPTO-GENERATED IMAGE	NO
DESCRIPTION OF THE MARK (and Color Location, if applicable)	The mark consists of round disk head on sprayer nozzle.
MARK SECTION (proposed)	
MARK FILE NAME	\\TICRS2\EXPORT14\788\679\78867933\xml1 RFR0002.JPG
STANDARD CHARACTERS	NO
USPTO-GENERATED IMAGE	NO
COLOR MARK	NO
DESCRIPTION OF THE MARK (and Color Location, if applicable)	The mark consists of round disk head on sprayer nozzle.
PIXEL COUNT ACCEPTABLE	YES
PIXEL COUNT	480 x 618
ARGUMENT(S)	
<p>Request for Reconsideration and Remand A Notice of Appeal is also being filed with the TTAB</p> <p>Section 2(e)(5) Utilitarian Configuration Refusal</p> <p>The Examining attorney states "the round head shape, the planar discharge surface, the orifice, the body of the spray head, the deflection ridge and the impingement surface, are functional for the goods because the nozzle system with each of these parts affects the amount of spray applied to the target area, the uniformity of the applied spray, the coverage obtained on the sprayed surfaces</p>	

and the amount of drift that can occur." This statement is incorrect. The visible features of the nozzle are not the functional elements which provide the desired spaying effect. It is the features not visible without disassembly which control the spaying function and they are not shown nor claimed in the trademark drawing.

As previously stated, the round head shape of the top of the nozzle serves no function whatsoever. There is evidence in the record which shows various competitor spray nozzle top shapes. The spray nozzle top claimed as the trademark herein does not perform the functions as stated by the examining attorney. The functions covered by the utility Patent No. 7,108,204 of the sprayer nozzle are contained in the internal, non-visible portions of the spray nozzle. A Declaration was previously provided from Thomas Les Johnson the designer of the sprayer nozzle stating the trademark does not include the functional aspects of the sprayer nozzle.

The examining attorney states that "the 90 degree impingement surface shown in the proposed trademark was claimed by applicant in its patent." Also stated in the Final Refusal by the examining attorney, "in applicant's proposed trademark, the impingement surface serves the same function as one's thumb in that it disperses the water in a fan shape, which helps to distribute the liquid in an even distribution, enabling the same quantity of liquid material to be distributed in each increment of the discharge pattern." The impingement surface is hidden within the nozzle and thus is not part of the trademark claim. It is no more relevant than the formula to Coke® is to the shape of the bottle which contains the fluid. The formula, like the impingement surface are not visible on sight by the purchaser.

The examining attorney states that in Claim 16 of the patent, "a deflection ridge at the intersection of the impingement surface and the sealing surface, the deflection ridge being at least in part adjacent to the triangular base of the sealing surface. Applicant's proposed trademark configuration has a deflection ridge as well." A deflection ridge is likewise not shown as part of the trademark.

Lastly the examiner states, "the round head shape of the nozzle is functional because it helps to form the fan shaped discharge pattern of the fluid. In fact, this was claimed in the prior art cited against applicant's patent, namely in U.S. Patent No. 2,338, 273, wherein 'a spray nozzle having an outlet opening, a wall spaced from and overhanging said opening' was claimed." As previously stated the round head shape is not functional. The dispersal of liquid from the nozzle is not controlled by the round shape. The examining attorney confuses the round shape of the nozzle head with the round covered orifice design which is not shown in the trademark drawing.

Also the examining attorney states, "if the shape were square or in a shape other than round, the spray pattern would not have a fan shape." This statement is incorrect, and is total conjecture by the examining attorney. The physics of the nozzle are complex but in any event, they are not as speculatively proposed by the examining attorney. The examining attorney is invited to read the claims of the patent number 7,108,204 to have a further understanding of the physics, but suffice it to say, the external features do not control the spray pattern in this device.

The examining attorney found that Applicant's advertising and the advertising of its

distributors touts the utilitarian advantages of the round head design when it states "[a]ll nozzles feature a multi patented round covered orifice design which improves spray pattern & distribution." The advertising materials and the third parties who sell applicant's products tout the advantages of the round covered orifice design of the spray nozzle's internal features. There is no advertisement or reference to the trademark design or statements that the spray nozzle top as claimed in the trademark is functional. Again, the examining attorney is confusing the orifice design with the nozzle top in the trademark drawing. The trademark does not include the orifice design as claimed in the patent.

It appears that the examining attorney is trying to use the *TrafFix* doctrine in a way which the United States Supreme court never stated, namely, that there is a blanket prohibition of trademark protection for features which are even remotely associated with a prior patent claim. The Court in *TrafFix Devices, Inc. v. Marketing Displays, Inc.*, 532 U.S. 23, 58 USPQ2d 1001 (2001); consistently refers to *claims* of the patent as the basis for their holding. Furthermore, *TrafFix* holds that even a claimed feature only creates a strong *presumption* of functionality, not an absolute bar, but the analysis does not have to go there to find that *TrafFix* does not apply to this case. The subject of this trademark application is not claimed in Applicant's U.S. Patent No 7,108,204 nor the third party U.S. Patent No. 2,338, 273.

The Court in *TrafFix* makes specific reference to how to handle arbitrary elements of an inventive structure:

In a case where a manufacturer seeks to protect arbitrary, incidental, or ornamental aspects of features of a product found in the patent claims, such as arbitrary curves in the legs or an ornamental pattern painted on the springs, a different result might obtain. *TrafFix*, at 1255.

In this case, the patents cover the internal features of the spray nozzle not the arbitrary shape or design of the spay nozzle top.

The *TrafFix* case has boundaries. The present trademark application falls well outside of the scope of the prohibited area defined by the Supreme Court. To extend the Court's definition of prohibited subject matter into the safe harbor explicitly defined by the Court (unclaimed aspects) would require an interpretation of *TrafFix* which cannot be found in that decision.

Further, there is documentary evidence via experts in the field that when purchasing a spray nozzle one cannot not assume a specific pattern or rate is obtained based on the shape of the head. See Statements from Ken Vahle, Richard J. Miller, Walter Byrd and Orvice L. Rozell all with more than 15 years of experience in manufacturing and distributing sprayer equipment. Also, see attached article in the newsletter "Range & Pasture" wherein a scientist, Dave Valcore, states "Boomless nozzles offer a wide range of spray volumes. Know what you need based on the specimen label for the product you're applying and pick a nozzle with the best pattern of uniformity." If it were as easy as picking a round shape head, the scientist would not warn users to take care when selecting these products.

Section 2(e)(5) Non-Distinctive Configuration Refusal

The examining attorney rejects the allegation of five years' use as insufficient to show acquired distinctiveness and request evidence of acquired distinctiveness.

Applicant has sold approximately \$2 million worth of products (approximately 80,000 sprayer nozzles) under the trademark applied for herein. The Applicant has spent in excess of \$150,000 on advertising the trademark in the United States. The products provided under the trademark are sold to manufactures of sprayer equipment.

Also as evidence of distinctiveness, Applicant has obtained multiple Statements from users of this product in the relevant field and purchasers of spray nozzles specifically attesting to their recognition of the trademark as an indicator of Applicant as a source for the goods. Applicant believes that these Statements are sufficient to prove the acquired distinctiveness necessary for registration of the mark. As it can be appreciated, users and customers of the product, do not relish the prospect of becoming involved in a legal matter, even as simple as providing a declaration, yet, obtaining confirmatory statements of customers has not been difficult. The product shape is highly distinctive in the relevant industry and the evidence supports this. The applicant has carried and exceeded its burden of proof.

Also as evidence of acquired distinctiveness attached are several web pages owned by distributors which advertise the distinctive trademark shape of Applicant's spray nozzle head.

The examining attorney alleges that several spray nozzle manufacturers make the same round head design, thus Applicant's design has very little distinctiveness. A close look at the evidence provided from AllSpray.com, Bete, Spraying Systems Co., Bex Products and others, show different variations of spray nozzle shapes, though none are similar to Applicant's distinctive design. There is a distinction, the Bex and other nozzles have a *wide open jaw*. These citations all refer to a single device, which we will call "Bex" for convenience.

It is important to note that the vast majority of nozzles do not look like the present applicant's nor Bex. The additional metal required to make a round nozzle adds significantly to the expense especially when the metal is brass or stainless. Therefore, it is inaccurate to assert that the round head shape is common in the industry. It is clearly not.

More importantly, the Bex device is distinguishable in its wide open jaw. In the base of Bex is indeed quite functional as it provides a flow path for the spray. Bex is primarily intended for fire suppression or other uses where *precision* spraying is not required. The wide mouth (the "smiling face") is also recognizable and clearly different from the tight gap of applicant's design. Applicant's design is very closed and has a gap with what looks like parallel walls. The difference is completely recognizable. Bex has a "smiley" look and the present applicant's has an "alien" look. That is what the user sees and recognizes. The functional part is almost invisible as being deep in the gap and not claimed or shown in the trademark drawing. Finally, it is important to take into consideration that the users are very sophisticated as experts in industrial or agricultural spraying. This can easily distinguish the products.

Substitute Specimen Required

The current specimen of record comprises images of spray nozzles, but the specimen is unacceptable as evidence of actual trademark use because the entire portion of the spray nozzle head for which applicant seeks protection is not visible. Applicant respectfully disagrees with the examining attorney, in comparing the drawing as shown in the application with the photos of the spray nozzle top and drawing of the spray nozzle in the specimen the complete trademark claimed in the drawing is visible.

However, Applicant hereby submits a substitute specimen consisting of a catalog which is provided with each spray nozzle sold. The catalog provides the purchaser with nozzle installation tips and operation, safety instructions and conversion formulas. The trademark is shown in a photograph on the cover of the catalog.

Drawing

The drawing is amended as shown in the attached drawing.

EVIDENCE SECTION

EVIDENCE FILE NAME(S)	
JPG FILE(S)	<u>\\TICRS2\EXPORT14\788\679\78867933\xml1\REFR0022.JPG</u>
ORIGINAL PDF FILE	http://tgate/PDF/RFR/
DESCRIPTION OF EVIDENCE FILE	Statements from Ken Vahle, Richard J. Miller, Walter Byrd and Orvice L. Rozell; Newsletter article from "Range & Pasture"; Five Web pages advertising Applicant's product by showing the trademark

GOODS AND/OR SERVICES SECTION (current)	
INTERNATIONAL CLASS	006
DESCRIPTION	metal spray nozzles
FILING BASIS	Section 1(b)
GOODS AND/OR SERVICES SECTION (proposed)	
INTERNATIONAL CLASS	006
DESCRIPTION	metal spray nozzles
STATEMENT TYPE	"The substitute specimen(s) was in use in commerce prior to the filing of the Amendment to Allege Use (AAU)."
SPECIMEN FILE NAME(S)	
ORIGINAL PDF FILE	http://tgate/PDF/RFR/
SPECIMEN DESCRIPTION	Applicant's catalog which is provided with each sale, containing safety instructions, installation and operation tips and conversion formulas
SIGNATURE SECTION	
DECLARATION SIGNATURE	/Michael B. Lasky/
SIGNATORY'S NAME	Michael B. Lasky
SIGNATORY'S POSITION	Attorney of record
DATE SIGNED	12/19/2007
RESPONSE SIGNATURE	/Michael B. Lasky/
SIGNATORY'S NAME	Michael B. Lasky
SIGNATORY'S POSITION	Attorney of record
DATE SIGNED	12/19/2007
AUTHORIZED SIGNATORY	YES
CONCURRENT APPEAL NOTICE FILED	YES
FILING INFORMATION SECTION	
SUBMIT DATE	Wed Dec 19 13:54:35 EST 2007
TEAS STAMP	USPTO/RFR-75.146.162.41-2 0071219135435771826-78867 933-410e7f2827f2c55f7ece1 3f024b5a16fda-N/A-N/A-200 71219132846506194

PTO Form 1960 (Rev 9/2007)

OMB No. xxxx-xxxx (Exp. x/xxxx)

Request for Reconsideration after Final Action

To the Commissioner for Trademarks:

Application serial no. **78867933** has been amended as follows:

MARK

Applicant proposes to amend the mark as follows:

Current: (Stylized and/or with Design)

The mark consists of round disk head on sprayer nozzle.

Proposed: (Stylized and/or with Design, see mark)

The applicant is not claiming color as a feature of the mark. The mark consists of round disk head on sprayer nozzle.

ARGUMENT(S)

In response to the substantive refusal(s), please note the following:

Request for Reconsideration and Remand

A Notice of Appeal is also being filed with the TTAB

Section 2(e)(5) Utilitarian Configuration Refusal

The Examining attorney states "the round head shape, the planar discharge surface, the orifice, the body of the spray head, the deflection ridge and the impingement surface, are functional for the goods because the nozzle system with each of these parts affects the amount of spray applied to the target area, the uniformity of the applied spray, the coverage obtained on the sprayed surfaces and the amount of drift that can occur." This statement is incorrect. The visible features of the nozzle are not the functional elements which provide the desired spaying effect. It is the features not visible without disassembly which control the spaying function and they are not shown nor claimed in the trademark drawing.

As previously stated, the round head shape of the top of the nozzle serves no function whatsoever. There is evidence in the record which shows various competitor spray nozzle top shapes. The spray nozzle top claimed as the trademark herein does not perform the functions as stated by the examining attorney. The functions covered by the utility Patent No. 7,108,204 of the sprayer nozzle are contained in the internal, non-visible portions of the spray nozzle. A Declaration was previously provided from Thomas Les Johnson the designer of the sprayer nozzle stating the trademark does not include the functional aspects of the sprayer nozzle.

The examining attorney states that "the 90 degree impingement surface shown in the proposed

trademark was claimed by applicant in its patent." Also stated in the Final Refusal by the examining attorney, "in applicant's proposed trademark, the impingement surface serves the same function as one's thumb in that it disperses the water in a fan shape, which helps to distribute the liquid in an even distribution, enabling the same quantity of liquid material to be distributed in each increment of the discharge pattern." The impingement surface is hidden within the nozzle and thus is not part of the trademark claim. It is no more relevant than the formula to Coke® is to the shape of the bottle which contains the fluid. The formula, like the impingement surface are not visible on sight by the purchaser.

The examining attorney states that in Claim 16 of the patent, "a deflection ridge at the intersection of the impingement surface and the sealing surface, the deflection ridge being at least in part adjacent to the triangular base of the sealing surface. Applicant's proposed trademark configuration has a deflection ridge as well." A deflection ridge is likewise not shown as part of the trademark.

Lastly the examiner states, "the round head shape of the nozzle is functional because it helps to form the fan shaped discharge pattern of the fluid. In fact, this was claimed in the prior art cited against applicant's patent, namely in U.S. Patent No. 2,338, 273, wherein 'a spray nozzle having an outlet opening, a wall spaced from and overhanging said opening' was claimed." As previously stated the round head shape is not functional. The dispersal of liquid from the nozzle is not controlled by the round shape. The examining attorney confuses the round shape of the nozzle head with the round covered orifice design which is not shown in the trademark drawing.

Also the examining attorney states, "if the shape were square or in a shape other than round, the spray pattern would not have a fan shape." This statement is incorrect, and is total conjecture by the examining attorney. The physics of the nozzle are complex but in any event, they are not as speculatively proposed by the examining attorney. The examining attorney is invited to read the claims of the patent number 7,108,204 to have a further understanding of the physics, but suffice it to say, the external features do not control the spray pattern in this device.

The examining attorney found that Applicant's advertising and the advertising of its distributors touts the utilitarian advantages of the round head design when it states "[a]ll nozzles feature a multi patented round covered orifice design which improves spray pattern & distribution." The advertising materials and the third parties who sell applicant's products tout the advantages of the round covered orifice design of the spray nozzle's internal features. There is no advertisement or reference to the trademark design or statements that the spray nozzle top as claimed in the trademark is functional. Again, the examining attorney is confusing the orifice design with the nozzle top in the trademark drawing. The trademark does not include the orifice design as claimed in the patent.

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claimed feature only creates a strong *presumption* of functionality, not an absolute bar, but the analysis does not have to go there to find that *Traffix* does not apply to this case. The subject of this trademark application is not claimed in Applicant's U.S. Patent No 7,108,204 nor the third party U.S. Patent No. 2,338, 273.

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The *Traffix* case has boundaries. The present trademark application falls well outside of the scope of the prohibited area defined by the Supreme Court. To extend the Court's definition of prohibited subject matter into the safe harbor explicitly defined by the Court (unclaimed aspects) would require an interpretation of *Traffix* which cannot be found in that decision.

Further, there is documentary evidence via experts in the field that when purchasing a spray nozzle one cannot not assume a specific pattern or rate is obtained based on the shape of the head. See Statements from Ken Vahle, Richard J. Miller, Walter Byrd and Orvice L. Rozell all with more than 15 years of experience in manufacturing and distributing sprayer equipment. Also, see attached article in the newsletter "Range & Pasture" wherein a scientist, Dave Valcore, states "Boomless nozzles offer a wide range of spray volumes. Know what you need based on the specimen label for the product you're applying and pick a nozzle with the best pattern of uniformity." If it were as easy as picking a round shape head, the scientist would not warn users to take care when selecting these products.

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Also as evidence of distinctiveness, Applicant has obtained multiple Statements from users of this product in the relevant field and purchasers of spray nozzles specifically attesting to their recognition of the trademark as an indicator of Applicant as a source for the goods. Applicant believes that these Statements are sufficient to prove the acquired distinctiveness necessary for registration of the mark. As it can be appreciated, users and customers of the product, do not relish the prospect of becoming involved in a legal matter, even as simple as providing a declaration, yet, obtaining confirmatory statements of customers has not been difficult. The product shape is highly distinctive in the relevant industry and the evidence supports this. The applicant has carried and exceeded its

burden of proof.

Also as evidence of acquired distinctiveness attached are several web pages owned by distributors which advertise the distinctive trademark shape of Applicant's spray nozzle head.

The examining attorney alleges that several spray nozzle manufacturers make the same round head design, thus Applicant's design has very little distinctiveness. A close look at the evidence provided from AllSpray.com, Bete, Spraying Systems Co., Bex Products and others, show different variations of spray nozzle shapes, though none are similar to Applicant's distinctive design. There is a distinction, the Bex and other nozzles have a *wide open jaw*. These citations all refer to a single device, which we will call "Bex" for convenience.

It is important to note that the vast majority of nozzles do not look like the present applicant's nor Bex. The additional metal required to make a round nozzle adds significantly to the expense especially when the metal is brass or stainless. Therefore, it is inaccurate to assert that the round head shape is common in the industry. It is clearly not.

More importantly, the Bex device is distinguishable in its wide open jaw. In the base of Bex is indeed quite functional as it provides a flow path for the spray. Bex is primarily intended for fire suppression or other uses where *precision* spraying is not required. The wide mouth (the "smiling face") is also recognizable and clearly different from the tight gap of applicant's design. Applicant's design is very closed and has a gap with what looks like parallel walls. The difference is completely recognizable. Bex has a "smiley" look and the present applicant's has an "alien" look. That is what the user sees and recognizes. The functional part is almost invisible as being deep in the gap and not claimed or shown in the trademark drawing. Finally, it is important to take into consideration that the users are very sophisticated as experts in industrial or agricultural spraying. This can easily distinguish the products.

Substitute Specimen Required

The current specimen of record comprises images of spray nozzles, but the specimen is unacceptable as evidence of actual trademark use because the entire portion of the spray nozzle head for which applicant seeks protection is not visible. Applicant respectfully disagrees with the examining attorney, in comparing the drawing as shown in the application with the photos of the spray nozzle top and drawing of the spray nozzle in the specimen the complete trademark claimed in the drawing is visible.

However, Applicant hereby submits a substitute specimen consisting of a catalog which is provided with each spray nozzle sold. The catalog provides the purchaser with nozzle installation tips and operation, safety instructions and conversion formulas. The trademark is shown in a photograph on the cover of the catalog.

Drawing

The drawing is amended as shown in the attached drawing.

EVIDENCE

Evidence in the nature of Statements from Ken Vahle, Richard J. Miller, Walter Byrd and Orvice L. Rozell; Newsletter article from "Range & Pasture"; Five Web pages advertising Applicant's product by showing the trademark has been attached.

JPG file(s):

Evidence-1

Original PDF file:

<http://tgate/PDF/RFR/>

Converted PDF file(s) (pages)

Original PDF file:

<http://tgate/PDF/RFR/>

Converted PDF file(s) (pages)

Original PDF file:

<http://tgate/PDF/RFR/>

Converted PDF file(s) (pages)

Original PDF file:

<http://tgate/PDF/RFR/>

Converted PDF file(s) (pages)

Original PDF file:

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Original PDF file:

<http://tgate/PDF/RFR/>

Converted PDF file(s) (pages)

Original PDF file:

<http://tgate/PDF/RFR/>

Converted PDF file(s) (pages)

Original PDF file:

<http://tgate/PDF/RFR/>

Converted PDF file(s) (pages)

CLASSIFICATION AND LISTING OF GOODS/SERVICES

Applicant proposes to amend the following class of goods/services in the application:

Current: Class 006 for metal spray nozzles

Original Filing Basis:

Filing Basis: Section 1(b), Intent to Use: The applicant has a bona fide intention to use or use through the applicant's related company or licensee the mark in commerce on or in connection with the identified goods and/or services as of the filing date of the application. (15 U.S.C. Section 1051(b)).

Proposed: Class 006 for metal spray nozzles

Deleted Filing Basis: 1(b)

Applicant hereby submits a new specimen for Class 006. The specimen(s) submitted consists of Applicant's catalog which is provided with each sale, containing safety instructions, installation and operation tips and conversion formulas.

For an application based on 1(b), Intent-to-Use, "The substitute specimen(s) was in use in commerce prior to the filing of the Amendment to Allege Use (AAU)."

Original PDF file:

<http://tgate/PDF/RFR/>

Converted PDF file(s) (pages)

SIGNATURE(S)

Declaration Signature

If the applicant is seeking registration under Section 1(b) and/or Section 44 of the Trademark Act, the applicant had a bona fide intention to use or use through the applicant's related company or licensee the mark in commerce on or in connection with the identified goods and/or services as of the filing date of the application. 37 C.F.R. Secs. 2.34(a)(2)(i); 2.34 (a)(3)(i); and 2.34(a)(4)(ii). If the applicant is seeking registration under Section 1(a) of the Trademark Act, the mark was in use in commerce on or in connection with the goods or services listed in the application as of the application filing date. 37 C.F.R. Secs. 2.34(a)(1)(i). The undersigned, being hereby warned that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001, and that such willful false statements may jeopardize the validity of the application or any resulting registration, declares that he/she is properly authorized to execute this application on behalf of the applicant; he/she believes the applicant to be the owner of the trademark/service mark sought to be registered, or, if the application is being filed under 15 U.S.C. §1051(b), he/she believes applicant to be entitled to use such mark in commerce; to the best of his/her knowledge and belief no other person, firm, corporation, or association has the right to use the mark in commerce, either in the identical form thereof or in such near resemblance thereto as to be likely, when used on or in connection with the goods/services of such other person, to cause confusion, or to cause mistake, or to deceive; that if the original application was submitted unsigned, that all statements in the original application and this submission made of the declaration signer's knowledge are true; and all statements in the original application and this submission made on information and belief are believed to be true.

Signature: /Michael B. Lasky/ Date: 12/19/2007
Signatory's Name: Michael B. Lasky
Signatory's Position: Attorney of record

Request for Reconsideration Signature

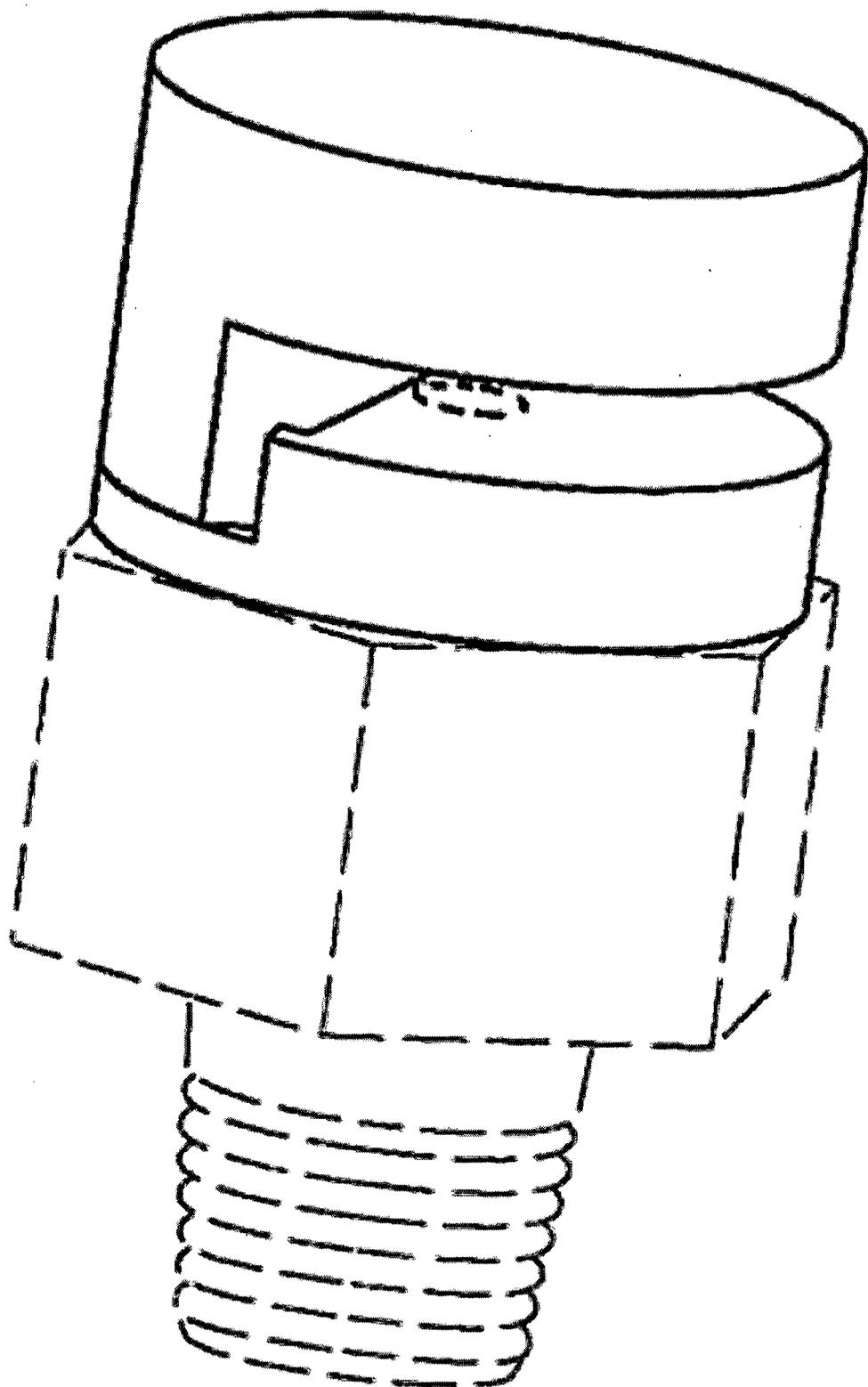
Signature: /Michael B. Lasky/ Date: 12/19/2007
Signatory's Name: Michael B. Lasky
Signatory's Position: Attorney of record

The signatory has confirmed that he/she is an attorney who is a member in good standing of the bar of the highest court of a U.S. state, which includes the District of Columbia, Puerto Rico, and other federal territories and possessions; and he/she is currently the applicant's attorney or an associate thereof; and to the best of his/her knowledge, if prior to his/her appointment another U.S. attorney or a Canadian attorney/agent not currently associated with his/her company/firm previously represented the applicant in this matter: (1) the applicant has filed or is concurrently filing a signed revocation of or substitute power of attorney with the USPTO; (2) the USPTO has granted the request of the prior representative to withdraw; (3) the applicant has filed a power of attorney appointing him/her in this matter; or (4) the applicant's appointed U.S. attorney or Canadian attorney/agent has filed a power of attorney appointing him/her as an associate attorney in this matter.

The applicant is filing a Notice of Appeal in conjunction with this Request for Reconsideration.

Serial Number: 78867933
Internet Transmission Date: Wed Dec 19 13:54:35 EST 2007
TEAS Stamp: USPTO/RFR-75.146.162.41-2007121913543577

1826-78867933-410e7f2827f2c55f7ece13f024
b5a16fda-N/A-N/A-20071219132846506194



Statement

1. I, Ken Vahle am particularly familiar with agricultural boomless spray nozzles like the one shown in the attached drawing. I own Warne Chemical which distributes and manufacturers sprayer equipment. We have been in the sprayer equipment business for approximately 33 years. I am responsible for purchasing the spray nozzles that are placed on the equipment before the sprayers are sold.

2. Given my 33 (number of) years of experience in the boomless sprayer industry, I am an expert in this field, including the selection, brands, design and capabilities of various sprayer nozzles. Most spray nozzles appropriate to this purpose have a vastly different shape. It is essential to carefully purchase the most accurate spray nozzle to perform a specific job when spraying chemicals. The flow rate and spray pattern must be considered carefully when selecting the correct spray nozzle. Different spray nozzles are designed to cause different flow rates, spray patterns and amount of drift to suit each particular job. However, these differentials are not caused by the shape of the spray head. When purchasing a spray nozzle one cannot not assume a specific pattern or rate is obtained based on the shape of the head.

3. Udor's Boominator spray nozzle as shown in the drawing attached is a spray nozzle I am familiar with and have purchased it in the past for use on our company's products.

4. I am familiar with the very unique round head and small gap design of the Boominator spray nozzle. This design is unique to Udor. It is the only sprayer nozzle that has this type of round head and gap design combination. I recognize the design and associate this design with Udor and Udor only. If I saw any similar design such as the one shown in the attached drawing, I would automatically assume it is Udor's product. The Udor Boominator spray nozzle is a very high quality, accurate nozzle.

All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, and any registration issuing thereon.

Date: 12/13/07

Name (printed):

Signature:

Title:

Company Name:

Address:

Ken Vahle
Ken Vahle
Owner
Warne Chemical
Rapid City, South Dakota

Statement

1. I, Richard J. Miller, am familiar with agricultural boomless spray nozzles and particularly the one shown in the attached drawing. I am the owner of C & R Supply Inc. of Sioux Falls, South Dakota which distributes and manufacturers agricultural and roadside sprayer equipment. We have been in the sprayer equipment business for approximately 25 years. I am responsible for purchasing the spray nozzles that are placed on the equipment before the sprayers are sold.

2. Given my 25 years of experience in the sprayer industry, I am an expert in this field, including the selection, brands, design and capabilities of various sprayer nozzles. Most spray nozzles appropriate to this purpose have a vastly different shape. It is essential to carefully purchase the most accurate spray nozzle to perform a specific job when spraying chemicals. The flow rate and spray pattern must be considered carefully when selecting the correct spray nozzle. Different spray nozzles are designed to cause different flow rates, spray patterns and amount of drift to suit each particular job. However, these differentials are not caused by the shape of the spray head. When purchasing a spray nozzle one cannot not assume a specific pattern or rate is obtained based on the shape of the head.

3. Udor's Boominator spray nozzle as shown in the drawing attached is a spray nozzle I am familiar with and have purchased it in the past for use on our company's products.

4. I am familiar with the very unique round head and small gap design of the Boominator spray nozzle. This design is unique to Udor. It is the only sprayer nozzle that has this type of round head and gap design combination. I recognize the design and associate this design with Udor and Udor only. If I saw any similar design such as the one shown in the attached drawing, I would automatically assume it is Udor's product. The Udor Boominator spray nozzle is a very high quality, accurate nozzle.

All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, and any registration issuing thereon.

Date: 12-13-07

Name (printed): Richard J. Miller
Signature: [Handwritten Signature]
Title: Owner
Company Name: C&R Supply, Inc.
Address: Sioux Falls, South Dakota

Statement

1. Walter K Byrd, am particularly familiar with agricultural boomless spray nozzles like the one shown in the attached drawing. I work for R+K Professional Spray (company name) which manufacturers/distributes sprayer equipment. We have been in the sprayer equipment business for approximately 22 years. I have worked for this company for the past 10 years and am responsible for purchasing the spray nozzles that are placed on the equipment before the sprayers are sold.

2. Given my 22 (number of) years of experience in the boomless sprayer industry, I am an expert in this field, including the selection, brands, design and capabilities of various sprayer nozzles. Most spray nozzles appropriate to this purpose have a vastly different shape. It is essential to carefully purchase the most accurate spray nozzle to perform a specific job when spraying chemicals. The flow rate and spray pattern must be considered carefully when selecting the correct spray nozzle. Different spray nozzles are designed to cause different flow rates, spray patterns and amount of drift to suit each particular job. However, these differentials are not caused by the shape of the spray head. When purchasing a spray nozzle one cannot not assume a specific pattern or rate is obtained based on the shape of the head.

3. Udor's Boominator spray nozzle as shown in the drawing attached is a spray nozzle I am familiar with and have purchased in the past for use on our company's products.

4. I am familiar with the very unique round head and small gap design of the Boominator spray nozzle. This design is unique to Udor. It is the only sprayer nozzle that has this type of round head and gap design combination. I associate this design with Udor and Udor only. If I saw any similar design such as the one shown in the attached drawing, I would automatically assume it is Udor's product. The Udor Boominator spray nozzle is a very high quality, accurate nozzle.

All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, and any registration issuing thereon.

Date: 12/13/07

Name (printed): Walter K Byrd
Signature: Walter K Byrd
Title: Pres.
Company Name: R+K Professional Spray Equipment
Address: 500 NE 28 St
Panama Beach FL 32064

Statement

1. I, Orville Rozell, am particularly familiar with agricultural boomless spray nozzles like the one shown in the attached drawing. I work for OWN ROZELL SPRAYER MFG (company name) which manufactures/distributes sprayer equipment. We have been in the sprayer equipment business for approximately 17 years. I have worked for this company for the past 17 years and am responsible for purchasing the spray nozzles that are placed on the equipment before the sprayers are sold.

2. Given my 17 (number of) years of experience in the boomless sprayer industry, I am an expert in this field, including the selection, brands, design and capabilities of various sprayer nozzles. Most spray nozzles appropriate to this purpose have a vastly different shape. It is essential to carefully purchase the most accurate spray nozzle to perform a specific job when spraying chemicals. The flow rate and spray pattern must be considered carefully when selecting the correct spray nozzle. Different spray nozzles are designed to cause different flow rates, spray patterns and amount of drift to suit each particular job. However, these differentials are not caused by the shape of the spray head. When purchasing a spray nozzle one cannot not assume a specific pattern or rate is obtained based on the shape of the head.

3. Udor's Boominator spray nozzle as shown in the drawing attached is a spray nozzle I am familiar with and have purchased in the past for use on our company's products.

4. I am familiar with the very unique round head and small gap design of the Boominator spray nozzle. This design is unique to Udor. It is the only sprayer nozzle that has this type of round head and gap design combination. I associate this design with Udor and Udor only. If I saw any similar design such as the one shown in the attached drawing, I would automatically assume it is Udor's product. The Udor Boominator spray nozzle is a very high quality, accurate nozzle.

All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, and any registration issuing thereon.

Date: 12/13/07

Name (printed):

Signature:

Title:

Company Name:

Address:

Orville L. Rozell
Orville L. Rozell
Owner
Rozell Sprayer Mfg
14278 Hwy 64 West
Tyler TX 75704

GO BOOMLESS: AND REACH THOSE HARD-TO-SPRAY AREAS.

By going where no boom has gone before, boomless nozzles fill an important need in pasture weed control. The high-volume nozzles specialize in covering rough terrain, or areas where obstacles make navigation with conventional spray booms impossible.

A single boomless nozzle can project spray 10 to 40 feet. Most nozzles perform best covering a 20- to 30-foot swath. A narrower pattern is desirable for smaller ATV equipment.

"Several commercial manufacturers offer a variety of boomless nozzles," says Dave Valcore, senior scientist, Dow AgroSciences Package and Delivery Application Systems. Upon their introduction during the 1980s, most boomless nozzles were brass. Today, engineered plastic and stainless steel models provide greater durability at a reduced cost.

While boomless nozzles allow spraying in areas where booms traditionally limit or prohibit access, or are ineffective, Valcore advises they may not be ideal for all situations.

"The biggest drawback is that the spray pattern isn't as uniform, which impacts efficiency," Valcore explains. "Also, the spray is carried at higher release heights, so there is greater risk of drift." Drift potential varies from nozzle to nozzle, says Valcore. Radiarc is one of the lowest-drift nozzles because it provides such a coarse droplet. However, efficacy and streaking then become a greater concern.

"Currently, the Boominator is a favorite for uniformity," Valcore says.

Here are a few boomless nozzle manufacturers. Check with your local spray equipment retailer for availability.

- Hypro: www.hypropumps.com
- Spraying Systems Co.: www.teejet.com
- Boominator: www.boominator.com

"Boomless nozzles offer a wide range of spray volumes," Valcore notes. "Know what you need based on the specimen label for the product you're applying and pick a nozzle with the best pattern of uniformity."



Boominator Nozzle

Continued from page 1

you can dial in the perfect rate for targeted control of a specific pasture problem, such as thistles, horsenettle or knapweeds.

Follow up

With weeds under control, it's important to protect your hard work and investment. Analyze the reasons for your pasture breakdown and adjust accordingly. Carefully monitor grass growth and stock recovering pastures appropriately.

Post treatment, you'll likely notice a big increase in grass production. Consider crossfencing to improve utilization and give you more grazing flexibility. And remember that weeds, especially perennials, produce large amounts of seed. Some seeds remain viable in the soil for years, posing a constant threat of reinfestation. Revisit treated sites frequently, especially if weeds were well established, treating new sprouts as soon as you spot them. With diligence, you can gain the upper hand and pave the way to long-term pasture success.

If you want to find more information on controlling specific weeds, treatment options or other management issues, visit www.RangeAndPasture.com or contact your Dow AgroSciences representative (contact information on back panel). ■

FREQUENTLY ASKED QUESTIONS

Q: Is it safe to move my cattle from a pasture treated with Milestone® or ForeFront™ R&P herbicide to pastures or fields growing clover or other legumes?

A: Urine and manure from cattle grazing treated pastures may contain enough herbicide to cause injury to sensitive plants. When moving livestock from a treated pasture to an area where sensitive broadleaf plants are growing or will be planted (cornstalks being rotated to soybeans, for example), you should allow three days of grazing on an untreated pasture to prevent damage. Also, treated plant residue, including hay or straw from treated areas, or manure from animals that have grazed forage or hay harvested from treated areas within the previous three days should not be spread where sensitive crops or plants grow.

Q: Can Milestone or ForeFront R&P be applied over and around desirable trees?

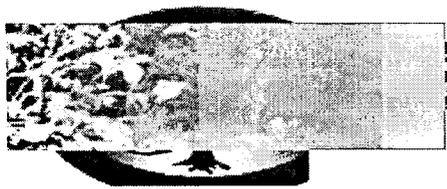
A: Aminopyralid, the active ingredient in Milestone and ForeFront R&P, has limited activity on woody species when applied to the soil under the canopy. While it would be unlikely for broadcast applications, made at labeled rates applied to the ground under and around trees, to actually kill a mature tree (except legume species, including caragana, locust and rose), there could be some leaf curling/cupping. Milestone or ForeFront R&P should NOT be used over the top of trees. Both products can be used as a directed spray under the canopy, or within the dripline, of certain trees, but not under conifers or legume trees/shrubs. For more information on specific tree species, access the Milestone Weed Control Under Trees Fact Sheet at www.MilestoneHerbicide.com.

Q: If a weed isn't on the product label, does that mean the product does not control it?

A: Not necessarily. The label provides a list of weeds that the product has been tested on and proven to be effective. But, there are often many more species that are susceptible. You can contact your area Range & Pasture Specialist to see if he or she has experience controlling the weed you are targeting.

Q: What is a surfactant? Do I need to use one?

A: Surfactants are substances that, basically, make water wetter. They reduce the surface tension of the water carrier, causing spray droplets to spread on leaf surfaces. This allows more herbicide to come in contact with the leaf surface, increasing herbicide uptake and overall effectiveness. Some people use household detergents as surfactants. While they have similar effects, detergents can form scums that affect sprayer performance and can interfere with herbicide activity. To get the best return from your herbicide investment, always use a quality agricultural surfactant when recommended on the product label.



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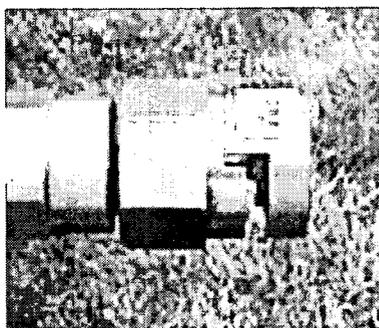

Currency



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Boominator - Boomless Spray Nozzle - Regular Pattern

Print Email to Friend Bookmark



Boominator nozzle

(1250L) Boomless Spray Nozzle - Left regular pattern \$105.06

(1250R) Boomless Spray Nozzle - Right regular pattern \$105.06



Currency

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Product Map

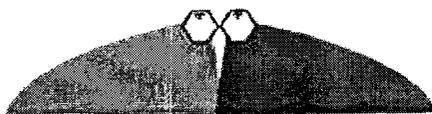
These nozzles produce a superior spray pattern with even distribution over the entire pattern, with minimal drift. A great alternative to the hard to get Boom Buster nozzle.

Detailed Description

Boominator nozzles produce a superior spray pattern with an even distribution over the entire pattern and minimal drift of spray. A great alternative to the hard-to-get *Boom Buster* nozzle.

All Regular pattern Spray Nozzles are tested at a height of 36 inches. (Recommended operating height is between 18 & 48 inches).

These nozzles are designed for left-hand or right-hand mounting and provide a wide spray pattern with approximately 15 degree of kickback under the nozzle. When using left-hand and right-hand nozzles together, adjust nozzle to allow for 1-2 inches of kickback overlap between the nozzles to prevent streaking in spray coverage. Nozzles can be rotated to adjust distance of spray pattern outward or amount of kickback under the nozzle.



	PSI	GPM	Spray Pattern	SPEED (MPH)						
				1	2	3	4	5	6	
1250										
				GALLONS PER ACRE						
right	20	1.5	16 ft.	46	23	16	12	9	8	7
or left	30	1.7	16 ft.	53	26	18	13	11	9	8
	40	2.0	16 ft.	62	31	21	16	12	10	9



- Made in the U.S.A.
- De-icing on roads, bridges, sidewalks, runways and parking lots.
- Spraying fence lines and right-of-ways.
- Dust suppression.
- Lawn, turf and nursery applications.
- Grass fire fighting.
- Orchard, vineyard and vegetable spraying.
- Ponds, lakes, canals. Aquatic pest and weed control.
- Insect control.
- NOTE: Left and Right side is based on looking at the front of the nozzle. i.e. to spray towards the curb from a vehicle, choose a LEFT nozzle

Related Information

- De-icing Equipment | Liquid Deicer Sprayers
- Utility, Estate and ATV Sprayers
- Tree Sprayers
- 3PTH - 3 Point Hitch Tractor Mounted and Trailer
- Sprayer Kits - Do it Yourself with Components
- Airblast Vineyard, Nursery and Orchard Sprayers
- Natural Insect and Mosquito Control
- Lawn, Turf and Golf Course Sprayers
- Pumps - Pumps, Pump Parts and Pressure Regulators
- Backpack & Hand Held Sprayers
- Greenhouse and Interior Sprayers
- Sprayer Parts & Components
- Organic Weed Control
- Sprayer Specials
- Spray Hose - spraying equipment hose and tubing
- Hose Reels
- Spray Applicators
- Tree Spray Guns & Applicators
- Weed Spray Guns
- Lawn and Turf Spray Guns
- Spray Booms and Boomless Widespray Nozzles
- Boominator Roadside Spray Package
- 16' Dry Manual Fold Spray Boom

Boom Buster Alternative Spray Nozzle in action*

Nozzle Installation Tips and Operation*

Related Products

Boominator - Boomless Spray Nozzle - Full pattern



Boominator - Boomless Spray Nozzle - Short Pattern



These nozzles produce a superior spray pattern with even distribution over the entire pattern, with minimal drift. A great alternative to the hard to get Boombuster nozzle.

These nozzles produce a superior spray pattern with even distribution over the entire pattern, with minimal drift. A great alternative to the hard to get Boombuster nozzle.

Boominator Roadside Spray Package



Ideal for Roadside and Commercial Property Spraying. Uses a Boominator Nozzle that replaces the 'hard to get' Boombuster Nozzle, and provides a more even pattern.

Boominator - Boomless Spray Nozzle - Regular Pattern

These nozzles produce a superior spray pattern with even distribution over the entire pattern, with minimal drift. A great alternative to the hard to get Boom Buster nozzle.

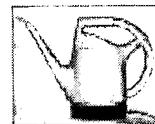
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Boominator - Boomless Spray Nozzle - Full pattern

Boominator - Boomless Spray Nozzle - Short Pattern

Boominator - Boomless Spray Nozzle - Regular Pattern

Boom Buster 187 Spray Nozzle

Hand Held and Swipe Applicators

Spray Gun Accessories

Name Brands

Sprayer Accessories

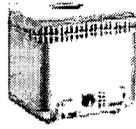
Rootfeeders

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Mosquito and Pest Control Sprayers & Accessories

Click on the Product Photo for Detailed Info and Pricing

Oasis Water System by Claber



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At last, a practical and versatile solution to the problem of watering house plants when you are away for up to 40 days. Waters up to 20 pots while you are away.
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\$45 each FREE SHIPPING




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Rittenhouse Catalog Map

Professional Equipment, Tools and Accessories	Golf Course	Honda Engine	Multi-Purpose	Professional
	Maintenance	and Engine	and Utility	Brands
	Tools	Accessories	Pumps	Watering &
	Greenhouse	Landscape &	Pressure	Irrigation
	Equipment and	Property	Washer Pumps	Supply
Tools	Management	and	Weed & Pest	
	Tools	Accessories	Control	Products

Christmas Gift Ideas - Garden Tools Fertilizing	Gifts - for gardeners and home owners Irrigation & Watering	Lawn & Garden Tools - Turf Tools Pest Control	Pruning Seasonal Shop by Brand Theft Deterrents Water Garden
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Garden Tools
for the Avid
Gardener

Garden Furniture, Clocks and Accessories Garden Lighting	Giant Outdoor Games Haida Sculpture Garden Planters	Keeping Cool - Evaporative Cooling Mosquito Magnet	Outdoor Art - WeatherPrint - prints for your patio Pet Related Products Topiary Frames / Forms
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Outdoor Living

Rittenhouse Sprayers	3PTH - 3 Point Hitch Tractor Mounted and Trailer Airblast Vineyard, Nursery and Orchard Sprayers Backpack & Hand Held Sprayers De-icing Equipment Liquid Deicer Sprayers Greenhouse and Interior Sprayers Hose Reels	Lawn, Turf and Golf Course Sprayers Mosquito and Pest Control Sprayers & Accessories Name Brands Natural Insect and Mosquito Control No Mix Injection Systems Organic Weed Control	Pumps - Pumps, Pump Parts and Pressure Regulators Rootfeeders Spray Applicators Spray Hose - spraying equipment hose and tubing Sprayer Accessories Sprayer Kits - Do it Yourself with Components	Sprayer Parts & Components Sprayer Specials Tree Sprayers Utility, Estate and ATV Sprayers
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Sprayers Pumps Hose Reels Spray Guns & Pest Control Equipment

Spraying Equipment Supply are suppliers of sprayers, pumps, spray guns, pest control equipment, hose reels and lots more. SES design and build custom spray systems.

Boominator Spray Nozzles

Agricultural Sprayers

FIMCO Sprayers

2007 Series

Spot Sprayers

Trailer Sprayers

Skid Sprayers

3 Point Sprayers

Power Sprayers

Gator Sprayers

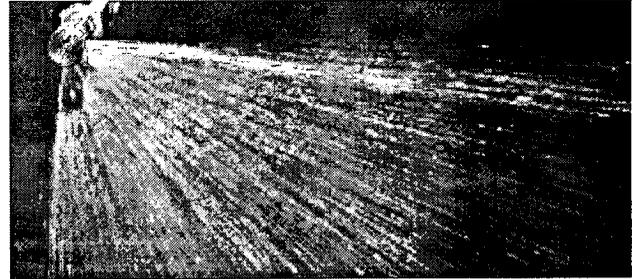
ATV Boom

Sprayers

Backpack Sprayer

FEATURES and BENEFITS

- CNC Machined Stainless Steel - no plastic parts
- All nozzles are factory tested to insure proper spray pattern
- Made in the USA with a limited 3 year warranty
- Designed for LEFT or RIGHT hand mounting and provide a wide spray pattern with approx 15 degrees kickback under nozzle
- Use for de-icing, spraying fence lines and rights-of-way, dust suppression, lawn, turf and nursery operations, aquatic pest and weed control and many others



Spray Boom Assemblies

PRO-SERIES |

SERIES 257

SERIES 1200 |

SERIES 1357

Product #	Description	Price
1250L	Left, Regular, 16' spray pattern	\$102.33
1250R	Right, Regular, 16' spray pattern	\$102.33
1400L	Left, Regular, 17' spray pattern	\$111.63
1400R	Right, Regular, 17' spray pattern	\$111.63
1870L	Left, Regular, 18' spray pattern	\$120.93
1870R	Right, Regular, 18' spray pattern	\$120.93
2650L	Left, Regular, 20' spray pattern	\$151.16
2650R	Right, Regular, 20' spray pattern	\$151.16
3120L	Left, Regular, 21' spray pattern	\$151.16
3120R	Right, Regular, 21' spray pattern	\$151.16
3750L	Left, Regular, 23' spray pattern	\$160.47
3750R	Right, Regular, 23' spray pattern	\$160.47
4370L	Left, Regular, 25' spray pattern	\$169.77
4370R	Right, Regular, 25' spray pattern	\$169.77

Spray Guns

Green Garde JD9

Gun

Twist handle Spray

Gun

GunJet Spray Guns

TriggerJet Spray

Gun

Hose Reels

COX Reels

"MAKE US AN OFFER"

DETAILS

Spray Pumps

Ace Centrifugal

Pumps

Hypro Centrifugal

Pumps

Poly Centrifugal

Pumps

Hypro Pumps

Roller Pumps

Electric driven

Spray Height Range is 18 - 48 inches.

Optimum Height is 36 inches and is the height used for testing to obtain GPA details above.

Gallons per acre are applicable to left or right hand nozzles.

Nozzle height may be adjusted within the recommended range, however, this will affect the

Pumps

- [SHURflo Pumps](#)
- [UDOR Zeta-Beta Pump](#)
- [Plunger Pump](#)
- [Diaphragm Pump](#)

GPA and spray pattern width.

For multi-pass spraying, overlap 12 - 16 inches to ensure even coverage.

De-icing on roads, bridges, sidewalks, runways and parking lots.

Spraying fence lines and right-of-ways.

Spray Nozzles

[TeeJet Spray](#)

Dust suppression.

Products

[Hypro Spray Tips](#)

Lawn, turf and nursery applications.

[Boominator Nozzles](#)

Grass fire fighting.

Spray Hose

[Spray Hose](#)

Orchard, vineyard and vegetable spraying.

[Spray Hose](#)

[Adapters](#)

Ponds, lakes, canals. Aquatic pest and weed control.

Insect control.

Accessories

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[Norwesco Tanks](#)

AMAZING Key

[Finder](#)

[Finders Key](#)

		SPEED (MPH)														
PSI	GPM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
		1250	20	1.5	46	23	16	12	9	8	7					
30	1.7		53	26	18	13	11	9	8							
40	2.0		62	31	21	16	12	10	9							
16 foot Spray Pattern																
PSI	GPM	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
		1400	20	1.7	25	17	12	10	8	7	6	5.5	5	4.5	4	
30	2.0		30	19	15	12	10	8	7	6.5	6	5	4.5			
40	2.5		36	24	18	15	12	10	9	8	7	6.5	6			
17 foot Spray Pattern																
PSI	GPM	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
		1870	20	3.0	41	28	21	17	14	12	10	9	8	7.5	7	
30	3.5		48	32	24	19	16	14	12	11	10	9	8			
40	4.3		59	39	30	24	20	17	15	13	12	11	10			
18 foot Spray Pattern																
PSI	GPM	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
		2650	20	6.7	83	55	41	33	28	24	21	18	16	15	14	13
30	7.5		93	62	46	37	32	26	23	20	18	17	15	14	13	12
40	8.5		105	70	52	42	35	30	26	23	21	19	17	16	15	14
20 foot Spray Pattern																
PSI	GPM	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
		3120	20	7.2	85	56	42	34	28	24	21	19	17	15	14	13
30	9.0		106	71	53	42	35	30	26	23	21	19	17	16	15	14
40	10.6		125	83	62	50	41	36	31	28	25	23	21	19	18	16
21 foot Spray Pattern																
PSI	GPM	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
		3750	20	12.0	129	86	64	51	43	37	32	29	26	24	22	20
30	15.0		161	108	81	64	54	46	40	36	32	29	27	25	23	21
40	16.3		175	117	88	70	58	50	44	39	35	32	29	27	25	23

Pursell
 LipSense
 liquid
 lip
 color
 from SeneGence!



37	40	16.3	175	117	88	70	58	50	44	39	35	32	29	27	25	23
	23 foot Spray Pattern															
4370	PSI	GPM	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	20	13.8	137	91	68	54	45	39	34	30	27	25	23	21	19	18
	30	15.6	154	103	77	62	51	44	39	34	31	28	26	24	22	20
	40	18.0	178	119	89	71	59	51	45	40	35	33	30	27	25	24
25 foot Spray Pattern																

Colors above are provided for ease of reading ONLY.

For more spray nozzle product information click on the links below

TeeJet Spray Equipment
 SPRAY NOZZLES

- [AI TeeJet Air Induction Spray Tips](#)
- [Turbo TeeJet® Wide Angle Spray Tips](#)
- [Turbo TurfJet® Spray Nozzles](#)
- [XR TeeJet®](#)
- [Turbo FloodJet® Wide Angle Flat Spray Tips](#)

VALVES AND MANIFOLDS

- [450 DirectoValve® Manifold](#)
- [460 2-Way DirectoValve® Manifold](#)
- [460 3-Way DirectoValve® Manifold](#)
- [TeeJet® Flanged Fittings](#)

BOOM COMPONENTS

- [Quick TeeJet® Multiple Nozzle Bodies](#)
- [Quick TeeJet® Individual Nozzle Bodies](#)
- [ChemSaver® Air Shutoff Valve](#)
- [Quick TeeJet® Caps](#)

Product Overviews
 SPRAY GUNS

- [AA18-AL GunJet Spray Gun](#)
- [AA43 GunJet Spray Gun](#)
- [22670 TriggerJet Spray Gun](#)
- [38700 TriggerJet Spray Gun](#)

ELECTRONIC CONTROLS & SENSORS

- [854 Sprayer Control](#)
- [844 Sprayer Control](#)
- [844-AB Sprayer Control](#)
- [834 Sprayer Control](#)
- [814 Sprayer Control](#)
- [TeeJet 744A Sprayer Control Kits](#)

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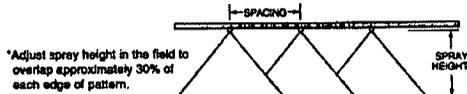
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TeeJet

Standard Flat Fan Spray Tips 80° Series



\$3.48 Each Brass
\$8.50 Each Stainless Steel



Tip No. (Strainer Screen Size)	Liquid Pressure in psi	Capacity 1 Nozzle in GPM	40° Spacing										60° Spacing																																			
			4	5	6	7	8	9	10	11	12	13	14	4	5	6	7	8	9	10	11	12	13	14																								
800067 (100 MESH)	30	.06	7.7	4.5	3.8	3.0	2.5	2.2	1.8	1.5	1.3	3.0	2.4	2.0	1.7	1.5	1.1	-	-	-	-	-	-	30	.06	7.7	4.5	3.8	3.0	2.5	2.2	1.8	1.5	1.3	3.0	2.4	2.0	1.7	1.5	1.1	-	-	-	-	-	-		
	40	.067	8.6	5.0	4.0	3.3	2.8	2.5	2.0	1.7	1.4	3.3	2.7	2.2	1.9	1.7	1.3	1.1	-	-	-	-	-	40	.067	8.6	5.0	4.0	3.3	2.8	2.5	2.0	1.7	1.4	3.3	2.7	2.2	1.9	1.7	1.3	1.1	-	-	-	-	-	-	
	60	.07	9.0	5.2	4.2	3.5	3.0	2.6	2.1	1.7	1.5	3.5	2.8	2.3	2.0	1.7	1.4	1.2	1.0	-	-	-	-	-	60	.07	9.0	5.2	4.2	3.5	3.0	2.6	2.1	1.7	1.5	3.5	2.8	2.3	2.0	1.7	1.4	1.2	1.0	-	-	-	-	-
8001 (100 MESH)	30	.09	12	6.7	5.3	4.5	3.8	3.2	2.7	2.2	1.9	4.5	3.6	3.0	2.5	2.2	1.8	1.5	1.1	-	-	-	-	30	.09	12	6.7	5.3	4.5	3.8	3.2	2.7	2.2	1.9	4.5	3.6	3.0	2.5	2.2	1.8	1.5	1.1	-	-	-	-	-	
	40	.10	13	7.4	5.9	5.0	4.2	3.7	3.0	2.6	2.1	5.0	4.0	3.2	2.6	2.2	1.8	1.5	1.1	-	-	-	-	40	.10	13	7.4	5.9	5.0	4.2	3.7	3.0	2.6	2.1	5.0	4.0	3.2	2.6	2.2	1.8	1.5	1.1	-	-	-	-	-	
	60	.11	14	8.2	6.5	5.4	4.7	4.1	3.3	2.7	2.3	5.4	4.4	3.6	3.1	2.7	2.2	1.8	1.4	1.1	-	-	-	60	.11	14	8.2	6.5	5.4	4.7	4.1	3.3	2.7	2.3	5.4	4.4	3.6	3.1	2.7	2.2	1.8	1.4	1.1	-	-	-	-	-
80016 (50 MESH)	30	.12	15	8.9	7.1	5.9	5.1	4.5	3.6	3.0	2.5	5.9	4.8	4.0	3.4	3.0	2.4	2.0	1.7	-	-	-	-	30	.12	15	8.9	7.1	5.9	5.1	4.5	3.6	3.0	2.5	5.9	4.8	4.0	3.4	3.0	2.4	2.0	1.7	-	-	-	-	-	
	40	.15	19	11.1	8.9	7.4	6.4	5.6	4.5	3.7	3.2	7.4	5.9	5.0	4.2	3.7	3.0	2.5	2.1	-	-	-	-	40	.15	19	11.1	8.9	7.4	6.4	5.6	4.5	3.7	3.2	7.4	5.9	5.0	4.2	3.7	3.0	2.5	2.1	-	-	-	-	-	
	60	.17	22	12.6	10.1	8.4	7.2	6.3	5.0	4.2	3.8	8.4	6.7	5.6	4.8	4.2	3.4	2.8	2.4	-	-	-	-	60	.17	22	12.6	10.1	8.4	7.2	6.3	5.0	4.2	3.8	8.4	6.7	5.6	4.8	4.2	3.4	2.8	2.4	-	-	-	-	-	
8002 (50 MESH)	30	.17	22	12.6	10.1	8.4	7.2	6.3	5.0	4.2	3.8	8.4	6.7	5.6	4.8	4.2	3.4	2.8	2.4	-	-	-	-	30	.17	22	12.6	10.1	8.4	7.2	6.3	5.0	4.2	3.8	8.4	6.7	5.6	4.8	4.2	3.4	2.8	2.4	-	-	-	-	-	
	40	.20	26	14.8	11.9	9.9	8.5	7.4	5.9	5.0	4.2	9.9	7.9	6.6	5.7	5.0	4.0	3.3	2.8	-	-	-	-	40	.20	26	14.8	11.9	9.9	8.5	7.4	5.9	5.0	4.2	9.9	7.9	6.6	5.7	5.0	4.0	3.3	2.8	-	-	-	-	-	
	60	.24	31	17.8	14.3	11.9	10.2	8.9	7.1	5.9	5.1	11.9	9.5	7.9	6.8	5.8	4.8	4.0	3.4	-	-	-	-	60	.24	31	17.8	14.3	11.9	10.2	8.9	7.1	5.9	5.1	11.9	9.5	7.9	6.8	5.8	4.8	4.0	3.4	-	-	-	-	-	
8003 (50 MESH)	30	.28	33	19.3	15.4	12.9	11.0	9.7	7.7	6.4	5.5	12.9	10.3	8.8	7.4	6.4	5.1	4.3	3.7	-	-	-	-	30	.28	33	19.3	15.4	12.9	11.0	9.7	7.7	6.4	5.5	12.9	10.3	8.8	7.4	6.4	5.1	4.3	3.7	-	-	-	-	-	
	40	.34	44	25	20	17.8	14.9	12.7	11.1	9.1	7.4	8.4	14.9	11.9	9.9	8.5	7.4	5.9	5.0	4.2	-	-	-	40	.34	44	25	20	17.8	14.9	12.7	11.1	9.1	7.4	8.4	14.9	11.9	9.9	8.5	7.4	5.9	5.0	4.2	-	-	-	-	-
	60	.37	47	27	22	19.3	15.7	13.1	11.0	9.2	7.8	13.1	10.7	9.2	7.9	6.8	5.4	4.6	3.9	-	-	-	-	60	.37	47	27	22	19.3	15.7	13.1	11.0	9.2	7.8	13.1	10.7	9.2	7.9	6.8	5.4	4.6	3.9	-	-	-	-	-	
8004 (50 MESH)	30	.35	45	28	21	17.3	14.8	13.0	10.4	8.7	7.4	17.3	13.9	11.9	9.9	8.7	6.8	5.8	5.0	-	-	-	-	30	.35	45	28	21	17.3	14.8	13.0	10.4	8.7	7.4	17.3	13.9	11.9	9.9	8.7	6.8	5.8	5.0	-	-	-	-	-	
	40	.45	58	33	27	22	19.1	16.7	13.4	11.1	9.5	22	17.8	14.9	12.7	11.1	8.9	7.4	6.4	-	-	-	-	40	.45	58	33	27	22	19.1	16.7	13.4	11.1	9.5	22	17.8	14.9	12.7	11.1	8.9	7.4	6.4	-	-	-	-	-	
	60	.48	63	38	32	28	24	21	18.2	15.8	13.1	10.4	24	19.4	16.2	13.9	12.1	9.7	8.1	6.9	-	-	-	60	.48	63	38	32	28	24	21	18.2	15.8	13.1	10.4	24	19.4	16.2	13.9	12.1	9.7	8.1	6.9	-	-	-	-	-
8005 (50 MESH)	30	.43	54	37	30	25	21	18.6	14.9	12.4	10.6	25	19.8	16.5	14.1	12.4	9.9	8.3	7.1	-	-	-	-	30	.43	54	37	30	25	21	18.6	14.9	12.4	10.6	25	19.8	16.5	14.1	12.4	9.9	8.3	7.1	-	-	-	-	-	
	40	.56	72	42	33	28	24	21	18.6	13.9	11.9	28	22	18.5	15.8	13.9	11.1	9.2	7.9	-	-	-	-	40	.56	72	42	33	28	24	21	18.6	13.9	11.9	28	22	18.5	15.8	13.9	11.1	9.2	7.9	-	-	-	-	-	
	60	.61	78	45	36	30	26	22	19.1	15.1	12.9	30	24	20	17.3	15.1	12.9	10.1	8.1	-	-	-	-	60	.61	78	45	36	30	26	22	19.1	15.1	12.9	30	24	20	17.3	15.1	12.9	10.1	8.1	-	-	-	-	-	
8006 (50 MESH)	30	.52	67	39	31	26	22	19.3	15.4	12.9	11.0	28	21	17.2	14.7	12.8	10.3	8.6	7.1	-	-	-	-	30	.52	67	39	31	26	22	19.3	15.4	12.9	11.0	28	21	17.2	14.7	12.8	10.3	8.6	7.1	-	-	-	-	-	
	40	.67	89	50	40	33	28	22	17.8	14.9	12.7	30	24	19.8	17.0	14.5	11.9	9.9	8.5	-	-	-	-	40	.67	89	50	40	33	28	22	17.8	14.9	12.7	30	24	19.8	17.0	14.5	11.9	9.9	8.5	-	-	-	-	-	
	60	.73	93	54	43	36	31	27	22	18.1	15.3	36	29	24	21	18.1	15.3	12.0	10.3	-	-	-	-	60	.73	93	54	43	36	31	27	22	18.1	15.3	36	29	24	21	18.1	15.3	12.0	10.3	-	-	-	-	-	
8008 (50 MESH)	30	.69	88	51	41	34	29	26	20	17.1	14.8	34	27	23	19.9	17.1	14.8	11.4	9.8	-	-	-	-	30	.69	88	51	41	34	29	26	20	17.1	14.8	34	27	23	19.9	17.1	14.8	11.4	9.8	-	-	-	-	-	
	40	.80	102	59	48	40	34	30	24	19.8	17.0	40	32	26	23	19.8	16.8	13.2	11.3	-	-	-	-	40	.80	102	59	48	40	34	30	24	19.8	17.0	40	32	26	23	19.8	16.8	13.2	11.3	-	-	-	-	-	
	60	.88	114	66	53	44	36	33	28	22	18.9	44	35	29	25	22	17.8	14.7	11.1	9.2	-	-	-	60	.88	114	66	53	44	36	33	28	22	18.9	44	35	29	25	22	17.8	14.7	11.1	9.2	-	-	-	-	-
8010 (No Strainer)	30	.87	111	66	54	45	37	32	26	22	18.3	43	34	29	25	22	17.2	14.4	11.3	-	-	-	-	30	.87	111	66	54	45	37	32	26	22	18.3	43	34	29	25	22	17.2	14.4	11.3	-	-	-	-	-	
	40	1.0	128	74	59	50	42	37	30	25	21	50	40	33	28	25	22	18.6	16.5	14.1	-	-	-	40	1.0	128	74	59	50	42	37	30	25	21	50	40	33	28	25	22	18.6	16.5	14.1	-	-	-	-	-
	60	1.1	143	83	67	56	46	42	33	28	24	55	44	37	32	28	25	22	18.5	15.8	-	-	-	60	1.1	143	83	67	56	46	42	33	28	24	55	44	37	32	28	25	22	18.5	15.8	-	-	-	-	-
8018 (No Strainer)	30	1.2	156	91	72	60	53	45	36	30	26	60	48	40	35	30	26	22	18.1	-	-	-	-	30	1.2	156	91	72	60	53	45	36	30	26	60	48	40	35	30	26	22	18.1	-	-	-	-	-	-
	40	1.3	186	97	77	64	55	46	39	32	28	64	51	43	37	32	28	24	21	-	-	-	-	40	1.3	186	97	77	64	55	46	39	32	28	64	51	43	37	32	28	24	21	-	-	-	-	-	
	60	1.5	192	111	89	74	64	56	47	37	32	74	59	50	42	37	30	25	21	-	-	-	-	60	1.5	192	111	89	74	64	56	47	37	32	74	59	50	42	37	30	25							

Turbo TeeJet[®] Flat Spray Tips

Tip Color	Tip No.	Liquid Pressure in psi	Capacity 1 Nozzle in GPM	Capacity 1 Nozzle in oz./min.	Gallons Per Acre 30" Spacing				Gallons Per Acre 30" Spacing				
					5 mph	7 mph	8 mph	9 mph	5 mph	7 mph	8 mph	9 mph	
ORANGE	TT1001VP (100 mesh)	20	0.08	8	3.5	3.0	2.6	2.3	2.4	2.0	1.7	1.5	1.8
		30	0.09	12	5.3	4.5	3.7	3.2	3.4	2.9	2.5	2.2	2.6
		40	0.10	13	5.9	5.0	4.2	3.7	4.0	3.3	2.6	2.2	2.6
		50	0.11	14	6.5	5.4	4.7	4.1	4.4	3.6	3.1	2.7	3.0
		60	0.12	15	7.1	5.9	5.1	4.5	4.8	4.0	3.4	3.0	3.0
GREEN	TT1005VP (100 mesh)	20	0.08	8	3.5	3.0	2.6	2.3	2.4	2.0	1.7	1.5	1.8
		30	0.13	17	7.7	6.4	5.8	4.8	5.1	4.3	3.7	3.2	3.2
		40	0.15	19	8.9	7.4	6.4	5.6	5.9	5.0	4.2	3.7	3.2
		50	0.17	22	10.1	8.4	7.2	6.3	6.7	5.6	4.8	4.2	4.2
		60	0.18	23	10.7	8.9	7.8	6.7	7.1	5.9	5.1	4.5	4.5
YELLOW	TT1002VP (50 mesh)	20	0.13	17	12.5	10.9	9.3	8.2	8.7	7.3	6.2	5.4	5.4
		30	0.17	22	10.1	8.4	7.2	6.3	6.7	5.6	4.8	4.2	4.2
		40	0.20	26	11.9	9.9	8.5	7.4	7.9	6.6	5.7	5.0	5.0
		50	0.22	28	13.1	10.9	9.3	8.2	8.7	7.3	6.2	5.4	5.4
		60	0.24	31	14.3	11.9	10.2	8.9	9.5	7.9	6.8	5.9	5.9
BLUE	TT1003VP (50 mesh)	20	0.18	23	10.7	8.9	7.8	6.7	7.1	5.9	5.1	4.5	4.5
		30	0.21	27	12.5	10.4	8.9	7.8	8.3	6.9	5.9	5.2	5.2
		40	0.24	31	14.3	11.9	10.2	8.9	9.5	7.9	6.8	5.9	5.9
		50	0.26	34	15.5	12.5	10.8	9.5	10.1	8.4	7.2	6.3	6.3
		60	0.28	37	16.7	13.1	11.1	9.8	10.4	8.7	7.4	6.5	6.5
RED	TT1004VP (50 mesh)	20	0.24	31	14.3	11.9	10.2	8.9	9.5	7.9	6.8	5.9	5.9
		30	0.35	45	21	17.3	14.9	13.0	13.9	11.6	9.9	8.7	8.7
		40	0.40	51	24	19.8	17.0	14.9	15.8	13.2	11.3	9.9	9.9
		50	0.45	58	27	22	19.1	16.7	14.9	15.8	13.2	11.3	11.1
		60	0.49	63	29	24	21	18.2	16.2	13.9	12.1	10.4	10.4
BROWN	TT1005VP (50 mesh)	20	0.31	40	18.4	15.3	13.2	11.5	12.3	10.2	8.8	7.7	7.7
		30	0.35	45	21	17.3	14.9	13.0	13.9	11.6	9.9	8.7	8.7
		40	0.43	55	26	21	18.2	16.0	14.2	14.2	12.2	10.6	10.6
		50	0.46	60	28	20	18.5	15.8	13.9	13.9	11.9	10.4	10.4
		60	0.51	68	32	23	20	18.2	15.8	13.6	11.9	10.4	10.4

Tabulation based on spraying water at 70° F.



Typical Applications:

EXCELLENT: Pre-emerge surface applied herbicides – minimum spray pressure of 15 psi.

EXCELLENT: Post emerge contact herbicides – typical pressures of 40 psi and higher.

Price: \$5.10 ea.

Nozzle Spacing	Suggested Spray Height
30"	15-18"
30"	20-22"

TeeJet[®]

Off-Center Flat Spray Tips - Smaller Capacities

Nozzle No.	Liquid Pressure psi	Nozzle Capacity GPM	Spraying Height "W" = 10"				Spraying Height "W" = 24"			
			in inches	3 mph	4 mph	5 mph	in inches	3 mph	4 mph	5 mph
OC-02	30	.17	68	5.0	3.7	3.0	75	4.5	3.4	2.7
	40	.20	70	5.7	4.2	3.4	77	5.1	3.9	3.1
	60	.24	72	6.6	5.0	4.0	78	6.1	4.6	3.7
OC-03	30	.26	77	6.7	5.0	4.0	80	6.4	4.8	3.9
	40	.30	80	7.4	5.8	4.5	83	7.2	5.4	4.3
	60	.37	82	8.9	6.7	5.4	85	8.6	6.5	5.2
OC-04	30	.35	91	7.8	5.7	4.8	93	7.5	5.8	4.5
	40	.40	93	8.5	6.4	5.1	94	8.4	6.3	5.1
	60	.49	94	10.3	7.7	6.2	95	10.2	7.7	6.1
OC-06	30	.52	99	10.4	7.8	6.2	108	9.5	7.2	5.7
	40	.60	101	11.8	8.8	7.1	110	10.6	8.1	6.5
	60	.73	102	14.2	10.6	8.5	111	13.0	9.8	7.9
OC-08	30	.69	100	13.7	10.2	8.2	110	12.4	9.3	7.5
	40	.80	102	15.5	11.8	9.3	112	14.1	10.8	8.5
	60	.98	104	18.7	14.0	11.2	113	17.2	12.9	10.3
OC-12	30	1.04	102	20	15.1	12.1	113	18.2	13.7	10.9
	40	1.20	104	23	17.1	13.7	115	21	15.5	12.4
	60	1.47	105	28	21	16.6	116	25	18.8	15.1
OC-16	30	1.39	132	21	15.8	12.5	142	18.4	14.5	11.6
	40	1.60	138	23	17.2	13.8	148	22	16.3	13.0
	60	1.95	143	27	20	16.3	148	26	19.7	15.7



Price: \$9.85 ea.

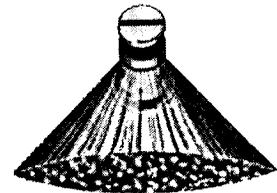
Tee Jet Off-Center spray tips are commonly installed in double and single swivel nozzle bodies. Because these bodies are adjustable for angular position, a wide spray swath is easily obtained.

AI TeeJet[™] Air Induction Spray Tips 110° VisiFlo \$7.50 ea.

Tip No.	Liquid Pressure in psi	Capacity 1 Nozzle in GPM	Capacity 1 Nozzle in oz./min.	GPA											
				4 mph	5 mph	6 mph	7 mph	8 mph	9 mph	10 mph	12 mph	14 mph	16 mph	18 mph	
AI110015-VS (100) Green	30	0.15	17	9.7	7.7	6.4	5.5	4.8	4.3	3.9	3.2	2.8	2.4	2.1	1.8
	40	0.17	22	11.3	8.9	7.4	6.4	5.6	5.0	4.2	3.7	3.2	2.8	2.4	2.1
	50	0.18	23	13.4	10.7	8.9	7.7	6.7	5.9	5.3	4.5	4.0	3.4	3.0	2.6
	60	0.20	26	14.9	11.9	9.9	8.5	7.4	6.6	5.9	5.0	4.2	3.7	3.2	2.8
	70	0.21	27	15.5	12.5	10.4	8.9	7.8	6.9	6.2	5.2	4.5	3.9	3.5	3.0
AI110002-VS (50) Yellow	30	0.17	22	12.5	10.1	8.4	7.2	6.3	5.8	5.0	4.2	3.7	3.2	2.8	2.4
	40	0.20	26	14.9	11.9	9.9	8.5	7.4	6.6	5.9	5.0	4.2	3.7	3.2	2.8
	50	0.22	28	16.3	13.1	10.9	9.3	8.2	7.3	6.5	5.4	4.7	4.1	3.6	3.0
	60	0.24	31	17.7	14.3	11.9	10.1	8.9	7.9	7.1	6.4	5.4	4.6	4.0	3.4
	70	0.26	33	19.3	15.3	12.9	11.0	9.7	8.6	7.7	6.4	5.5	4.8	4.3	3.6
AI110003-VS (50) Purple	30	0.17	22	12.5	10.1	8.4	7.2	6.3	5.8	5.0	4.2	3.7	3.2	2.8	2.4
	40	0.20	26	14.9	11.9	9.9	8.5	7.4	6.6	5.9	5.0	4.2	3.7	3.2	2.8
	50	0.22	28	16.3	13.1	10.9	9.3	8.2	7.3	6.5	5.4	4.7	4.1	3.6	3.0
	60	0.24	31	17.7	14.3	11.9	10.1	8.9	7.9	7.1	6.4	5.4	4.6	4.0	3.4
	70	0.26	33	19.3	15.3	12.9	11.0	9.7	8.6	7.7	6.4	5.5	4.8	4.3	3.6
AI110004-VS (50) Blue	30	0.17	22	12.5	10.1	8.4	7.2	6.3	5.8	5.0	4.2	3.7	3.2	2.8	2.4
	40	0.20	26	14.9	11.9	9.9	8.5	7.4	6.6	5.9	5.0	4.2	3.7	3.2	2.8
	50	0.22	28	16.3	13.1	10.9	9.3	8.2	7.3	6.5	5.4	4.7	4.1	3.6	3.0
	60	0.24	31	17.7	14.3	11.9	10.1	8.9	7.9	7.1	6.4	5.4	4.6	4.0	3.4
	70	0.26	33	19.3	15.3	12.9	11.0	9.7	8.6	7.7	6.4	5.5	4.8	4.3	3.6
AI110005-VS (50) Red	30	0.17	22	12.5	10.1	8.4	7.2	6.3	5.8	5.0	4.2	3.7	3.2	2.8	2.4
	40	0.20	26	14.9	11.9	9.9	8.5	7.4	6.6	5.9	5.0	4.2	3.7	3.2	2.8
	50	0.22	28	16.3	13.1	10.9	9.3	8.2	7.3	6.5	5.4	4.7	4.1	3.6	3.0
	60	0.24	31	17.7	14.3	11.9	10.1	8.9	7.9	7.1	6.4	5.4	4.6	4.0	3.4
	70	0.26	33	19.3	15.3	12.9	11.0	9.7	8.6	7.7	6.4	5.5	4.8	4.3	3.6
AI110006-VS (50) Gray	30	0.17	22	12.5	10.1	8.4	7.2	6.3	5.8	5.0	4.2	3.7	3.2	2.8	2.4
	40	0.20	26	14.9	11.9	9.9	8.5	7.4	6.6	5.9	5.0	4.2	3.7	3.2	2.8
	50	0.22	28	16.3	13.1	10.9	9.3	8.2	7.3	6.5	5.4	4.7	4.1	3.6	3.0
	60	0.24	31	17.7	14.3	11.9	10.1	8.9	7.9	7.1	6.4	5.4	4.6	4.0	3.4
	70	0.26	33	19.3	15.3	12.9	11.0	9.7	8.6	7.7	6.4	5.5	4.8	4.3	3.6
AI110007-VS (50) White	30	0.17	22	12.5	10.1	8.4	7.2	6.3	5.8	5.0	4.2	3.7	3.2	2.8	2.4
	40	0.20	26	14.9	11.9	9.9	8.5	7.4	6.6	5.9	5.0	4.2	3.7	3.2	2.8
	50	0.22	28	16.3	13.1	10.9	9.3	8.2	7.3	6.5	5.4	4.7	4.1	3.6	3.0
	60	0.24	31	17.7	14.3	11.9	10.1	8.9	7.9	7.1	6.4	5.4	4.6	4.0	3.4
	70	0.26	33	19.3	15.3	12.9	11.0								

PSI	Capacity 1 Nozzle in GPM	Capacity 1 Nozzle in oz./min.	GPA Δ 40° Δ														
			4 mph	5 mph	6 mph	7 mph	8 mph	9 mph	10 mph	12 mph	14 mph	16 mph	18 mph				
TF-VS2 TF-VP2 (50)	10	0.20	25	7.4	5.9	5.0	4.2	3.7	3.3	3.0	2.5	2.1	1.0	1.7			
	20	0.28	38	10.4	8.3	6.9	5.9	5.2	4.6	4.2	3.5	3.0	2.6	2.3			
	30	0.35	45	13.0	10.4	8.7	7.4	6.5	5.8	5.2	4.3	3.7	3.2	2.9			
TF-VS2.5 TF-VP2.5 (50)	10	0.25	32	9.3	7.4	6.2	5.3	4.6	4.1	3.7	3.1	2.7	2.3	2.1			
	20	0.35	45	13.0	10.4	8.7	7.4	6.5	5.8	5.2	4.3	3.7	3.2	2.9			
	30	0.43	55	16.0	12.8	10.6	9.1	8.0	7.1	6.4	5.3	4.6	4.0	3.5			
TF-VS4 TF-VP4 (50)	10	0.40	51	14.9	11.9	9.9	8.5	7.4	6.6	5.9	5.0	4.2	3.7	3.3			
	20	0.57	73	21	16.0	14.1	12.1	10.6	9.4	8.5	7.1	6.0	5.3	4.7			
	30	0.69	88	26	20	17.1	14.6	12.8	11.4	10.2	8.6	7.3	6.4	5.7			
TF-VS5 TF-VP5 (50)	10	0.50	64	18.6	14.9	12.4	10.6	9.3	8.3	7.4	6.2	5.3	4.6	4.1			
	20	0.71	91	26	21	17.6	15.1	13.2	11.7	10.5	8.8	7.5	6.6	5.9			
	30	0.87	111	32	26	22	18.5	16.1	14.4	12.9	10.8	9.2	8.1	7.2			
TF-VS7.5 TF-VP7.5 (50)	10	0.75	96	28	22	18.6	15.9	13.9	12.4	11.1	9.3	8.0	7.0	6.2			
	20	1.06	136	39	31	26	22	19.7	17.5	15.7	13.1	11.2	9.8	8.7			
	30	1.30	168	48	39	32	28	24	21	19.3	16.1	13.8	12.1	10.7			
TF-VS10 TF-VP10 (50)	10	1.00	128	37	30	25	21	18.6	16.5	14.9	12.4	10.6	9.3	8.3			
	20	1.41	180	52	42	35	30	26	23	21	17.4	15.0	13.1	11.6			
	30	1.73	221	64	51	43	37	32	29	26	21	18.4	16.1	14.3			
40	2.00	256	74	59	50	42	37	33	30	25	21	18.6	16.5				

Turbo FloodJet Wide Angle Flat Spray Tips



Features:

- Excellent spray distribution for uniform coverage along the boom
- Nozzle design incorporates a pre-orifice to product larger droplets for less drift
- Large round orifice reduces clogging

How to order:

Specify tip number

Examples:

- TF-VS4 – Stainless Steel with VisiFlo color-coding **\$10.52**
- TF-VP4 – Polymer with VisiFlo color-coding **\$2.63**

StreamJet®

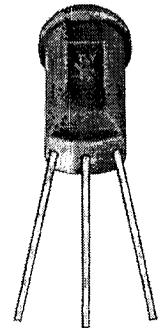
Features:

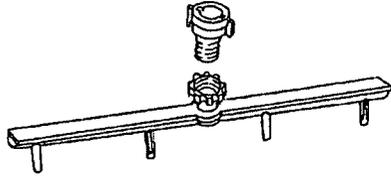
- Visi-Flo® color-coding system.
- 3 solid streams of equal velocity and capacity
- Removable metering orifice for easy cleaning.

- Use with Quick TeeJet® cap 25598*-N.YR.
- All acetal construction for excellent chemical resistance.
- Recommended operating pressure: 20-60 PSI (1.5-4 bar).

PSI	CAPACITY ONE NOZZLE IN GPM	GPA Δ 20° Δ							
		3 MPH	4 MPH	5 MPH	6 MPH	8 MPH	10 MPH	12 MPH	
S13-015-VP (100) Green	20	0.11	10.9	8.2	6.5	5.4	4.1	3.3	2.7
	30	0.13	12.9	9.7	7.7	6.4	4.8	3.9	3.2
	40	0.15	14.9	11.1	8.9	7.4	5.6	4.5	3.7
	50	0.16	15.8	11.9	9.5	7.9	5.9	4.8	4.0
S13-02-VP (50) Yellow	20	0.14	13.9	10.4	8.3	6.9	5.2	4.2	3.5
	30	0.17	16.8	12.6	10.1	8.4	6.3	5.0	4.2
	40	0.20	19.8	14.9	11.9	9.9	7.4	5.9	5.0
	50	0.21	21	15.6	12.5	10.4	7.8	6.2	5.2
S13-03-VP (50) Blue	20	0.24	24	17.8	14.3	11.9	8.9	7.1	5.9
	30	0.27	27	20	16.0	13.4	10.0	8.0	6.7
	40	0.30	30	22	17.8	14.9	11.1	8.9	7.4
	50	0.33	33	25	19.6	16.3	12.3	9.8	8.2
S13-04-VP (50) Red	20	0.30	30	22	17.8	14.9	11.1	8.9	7.4
	30	0.36	36	27	21	17.8	13.4	10.7	8.9
	40	0.40	40	30	24	19.8	14.9	11.9	9.9
	50	0.43	43	30	26	21	16.0	12.8	10.6
S13-05-VP (50) Brown	20	0.47	47	35	28	23	17.4	14.0	11.6
	30	0.36	36	27	21	17.8	13.4	10.7	8.9
	40	0.45	45	33	27	22	16.7	13.4	11.1
	50	0.50	50	37	30	25	18.6	14.9	12.4
S13-06-VP (50) Gray	20	0.55	54	41	33	27	20	16.3	13.6
	30	0.59	58	44	35	29	22	17.5	14.6
	40	0.66	65	49	39	33	25	19.6	16.3
	50	0.70	69	52	42	35	26	21	17.3
S13-08-VP White	20	0.56	55	42	33	28	21	16.6	13.9
	30	0.72	71	53	43	36	27	21	17.8
	40	0.80	79	59	48	40	30	24	19.8
	50	0.88	87	65	52	44	33	26	22
S13-10-VP Lt. Blue	20	0.94	93	70	56	47	35	28	23
	30	1.00	99	74	59	49	37	29	24
	40	1.11	110	82	66	55	41	33	27
	50	1.19	118	88	71	59	44	35	29
S13-15-VP Lt. Green	20	0.99	98	74	59	49	37	29	25
	30	1.24	123	92	74	61	45	37	31
	40	1.50	149	111	89	74	56	45	37
	50	1.68	166	125	100	83	62	50	42
S13-20-VP Black	20	1.83	181	136	109	91	68	54	45
	30	2.00	198	149	119	99	74	59	50
	40	2.28	226	169	135	113	85	68	56
	60	2.49	247	185	148	123	92	74	62

Price: \$7.60 ea.





NITROGEN APPLICATION SYSTEM

Now use the new NITRO-BAR system to apply Nitrogen at the optimum time for increased yields.

- Attaches to nozzle bodies on your sprayer – 20 inch nozzle spacing
- Use universal TeeJet® or Hardi® adapter
- Eliminate the potential of leaf burn
- Optimize yields through the Intensive Wheat Management program
- When used with the Air Tam tramlines nitrogen can be applied with unparalleled accuracy

NITRO-BAR FOR 20 INCH NOZZLE SPACING
(NEED TO ORDER AN ADAPTER TO COMPLETE THE NITRO-BAR)

1040739	1	Nitro-Bar (Includes Bar and O-Ring)	\$ 8.50
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Call for calibration adapter size.

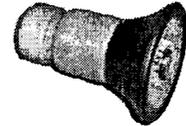
ADAPTER for TeeJet® (Includes: Orifice, Washer and Adapter)

1040753	1	Adapter—TeeJet® (Orange)	\$ 3.50
1040740	1	Adapter—TeeJet® (Red)	3.50
1040741	1	Adapter—TeeJet® (Blue)	3.50
1040742	1	Adapter—TeeJet® (Yellow)	3.50
1040743	1	Adapter—TeeJet® (Green)	3.50

FOG, FIRE AND HIGH VOLUME NOZZLE

1" NPS ADJUSTABLE FOG TO STRAIGHT STREAM, 100 PSI \$29.95

1 1/2" NPS ADJUSTABLE FOG TO STRAIGHT STREAM, 100 PSI \$29.95



BOOMINATOR BOOMLESS SPRAY NOZZLES

Please Call or Write for Complete Spec. Sheet

BOOMINATOR BENEFITS

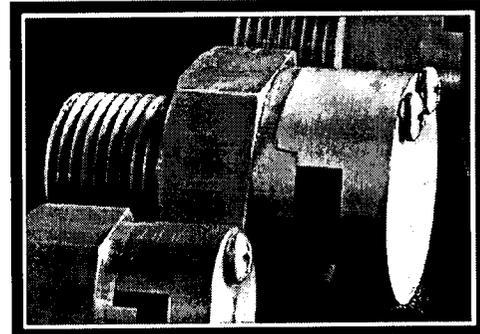
- BOOMINATOR NOZZLES PRODUCE A SUPERIOR SPRAY PATTERN WITH EVEN DISTRIBUTION OVER THE ENTIRE PATTERN
- BOOMINATOR NOZZLES PRODUCE A HEAVY DROPLET PATTERN FOR MINIMAL DRIFT AND BETTER CROP PENETRATION
- BOOMINATOR NOZZLES CAN EASILY SPRAY AROUND OBSTACLES AND OVER UNEVEN TERRAIN

BOOMINATOR APPLICATIONS

- NOXIOUS WEED CONTROL
- DE-ICING ON ROADS, BRIDGES, SIDEWALKS, RUNWAYS AND PARKING LOTS
- DUST SUPPRESSION
- LAWN, TURF AND NURSERY APPLICATIONS
- GRASS FIRE FIGHTING
- ORCHARD, VINEYARD AND VEGETABLE SPRAYING
- PONDS, LAKES, CANALS; AQUATIC PEST AND WEED CONTROL
- INSECT CONTROL

L=LEFT
R=RIGHT

FS=FULL SPRAY SHORT
FM=FULL SPRAY MEDIUM
FL=FULL SPRAY LOW



(Call to request a fact sheet on speed and gallon per acres)

1160L	\$ 91.80	2650RS	\$143.60
1160R	91.80	2650FL	143.60
1165L	91.80	2650FM	143.60
1165R	91.80	2650FS	143.60
		2650L	143.60
		2650R	143.60
1250FS	\$119.30	2651L	143.60
1250RS	119.30	2651R	143.60
1250L	97.25		
1250R	97.25		
1253L	97.25	3120RS	\$157.00
1253R	97.25	3120FL	157.00
1255L	97.25	3120FM	157.00
1255R	97.25	3120FS	157.00
		3120L	135.90
		3120R	135.90
1400FM	\$125.00	3121L	135.90
1400FS	125.00	3121R	135.90
1400RS	106.00	3750FL	164.00
1400L	106.00	3750L	144.46
1400R	106.00	3750R	144.46
1404L	106.00		
1404R	106.00		
1406L	106.00	4370FL	\$164.05
1406R	106.00	4370RS	144.00
1870FL	\$129.00	4370L	144.00
1870FM	129.00	4370R	144.00
1870FS	129.00		
1870L	114.88	5000L	\$187.00
1870R	114.88	5000R	187.00
1871L	114.88		
1871R	114.88	6250L	\$195.00
1876L	114.88	6250R	195.00
1876R	114.88		



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Use as tow behind sprayer, ATV mounted sprayer or truck mounted sprayer

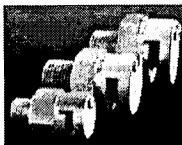
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1. Udor Boominator Spray Nozzle

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Boomless

Produces heavy droplet pattern for minimal drift and better crop penetration. Easily spray around obstacles and over uneven terrain. Superior spray pattern with even distribution over the entire pattern. Eliminates the cost of spray booms and all boom maintenance. Nozzles have superior wear and chemical resistance



	code no.	price (\$)	tax (\$)	
Down Drops				
Hose Clamps	010-full,left	3750L	120.35	8.42 <input type="button" value="Add"/>
Nylon Fittings	020-brass,full	1250BFS	66.03	4.76 <input type="button" value="Add"/>
Polypropylene Fittings	025,full	1250FS	94.18	6.59 <input type="button" value="Add"/>
Pressure Gauges	030,regular	1250L	76.73	5.37 <input type="button" value="Add"/>
Pumps	035,regular	1250R	76.73	5.37 <input type="button" value="Add"/>
Quick Caps	040,roadside	2650RS	113.37	7.94 <input type="button" value="Add"/>
Quick Spray Accessories	045,full	1870FL	108.14	7.57 <input type="button" value="Add"/>
Rope Wick Parts	050,regular	1400L	83.72	5.86 <input type="button" value="Add"/>
Spray Accessories				
Spray Guns				
Spray Monitors				
Spray Tips				
Sprayer Hose				
Stainless Steel Fittings				
Strainers				
Tank Fittings - polyethylene				
Tanks - Polyethylene				
Valves				

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welcome to klm

KLM Supply, Inc. features only Boominator Spray Nozzles.

- ▷ Features
- ▷ Benefits
- ▷ Applications
- ▷ Installation & Operation(116KB)[pdf]
- ▷ Short Pattern Nozzles
- ▷ Roadside Pattern Nozzles
- ▷ Regular Pattern Nozzles
- ▷ Full Pattern Nozzles



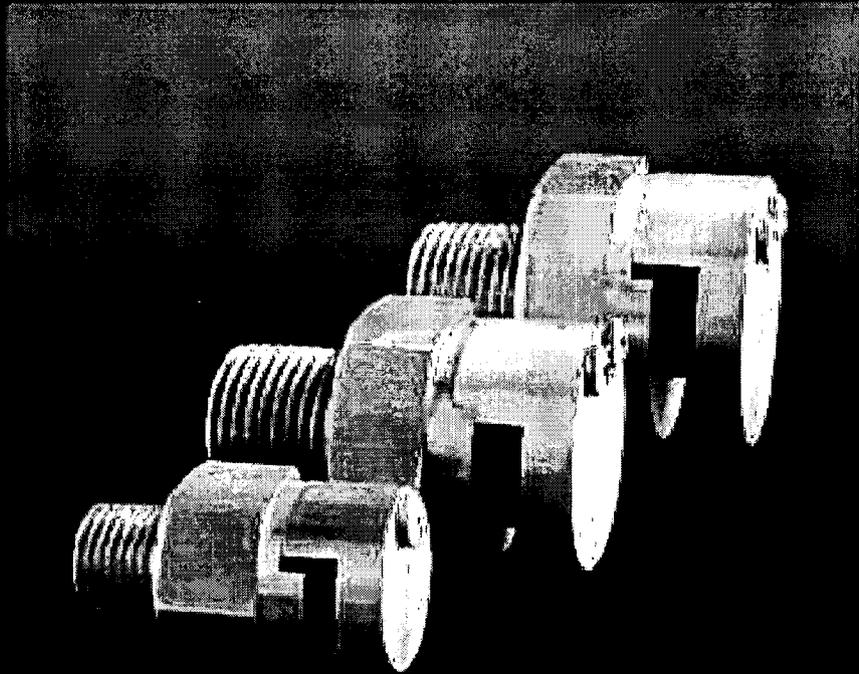
Nozzle Benefits:

- Boominator® nozzles produce a superior spray pattern with even distribution over the entire pattern
- Boominator® nozzles produce a heavy droplet pattern for minimal drift and better crop penetration.
- Boominator® nozzles can easily spray around obstacles and over uneven terrain.
- Boominator® nozzles eliminate the cost of spray booms and all boom maintenance.
- Boominator® nozzles have superior wear & chemical resistance

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BOOMINATOR[®]

WORLD LEADER IN BOOMLESS SPRAY NOZZLES



INDUSTRIAL BOOMLESS SPRAY NOZZLES

TECHNOLOGY THAT WORKS

2006-2007 Catalog



Made in U.S.A.



BOOMINATOR®

SPRAY NOZZLES FEATURES, BENEFITS AND APPLICATIONS

The Boominator® logo is your sign that you are receiving the highest quality boomless spray nozzles the industry has to offer. "Insist on Boominator® quality!"

BOOMINATOR® FEATURES

- *All nozzles are MADE IN THE U.S.A.*
- *All nozzles carry a 3-YEAR LIMITED WARRANTY against defects in materials and workmanship.*
- *All nozzles are CNC Machined from high grade stainless steel. NO PLASTIC PARTS or soft metals to wear out, break or replace. No small orifices or slots to get plugged up.*
- *All nozzles feature a multi-patented round covered orifice design which improves spray pattern and distribution.*
- *All nozzles feature patented anti-drift technology.*
- *All nozzles are INDIVIDUALLY FACTORY TESTED to ensure proper flow rate plus spray pattern.*

BOOMINATOR® BENEFITS

- *Boominator® nozzles produce a large droplet pattern for minimal drift and better penetration.*
- *Boominator® nozzles can easily spray around obstacles and over uneven terrain.*
- *Boominator® nozzles eliminate the cost of spray booms and all boom maintenance.*
- *Boominator® nozzles have superior wear and chemical resistance.*
- *Boominator® nozzles are designed to save time and money.*

BOOMINATOR® APPLICATIONS

- *De-icing on roads, bridges, sidewalks, runways and parking lots.*
- *Spraying fence lines and right-of-ways.*
- *Dust suppression in mining, dirt track and street sweeping applications.*
- *Lawn, turf and nursery applications.*
- *Grass fire fighting.*
- *Orchard, vineyard and vegetable spraying.*
- *Ponds, lakes, canals. Aquatic pest and weed control.*
- *Insect control.*
- *Disinfecting and disease control in livestock and poultry barns.*
- *Pasture spraying.*

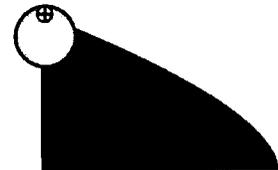
BOOMINATOR[®]

SPRAY NOZZLES NOZZLE DESCRIPTIONS AND DEFINITIONS

Short Pattern Spray Nozzles

All Short Pattern Spray Nozzles were tested at a height of 18 inches. (Recommended operating height is between 12 & 36 inches.)

These nozzles are designed for left-hand or right-hand mounting and provide an outward to straight downward spray pattern.



Roadside Spray Nozzles

All Roadside Spray Nozzles were tested at a height of 36 inches. (Recommended operating height is between 18 & 48 inches.)

These nozzles are designed for right-hand mounting ONLY and provide a wide spray pattern without kickback under the nozzle.

These nozzles are designed for road-side and right-of-way spraying.

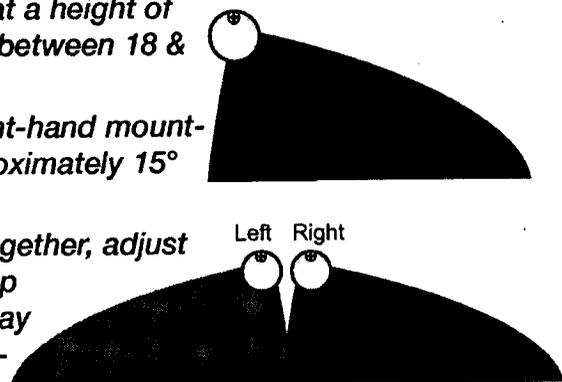


Regular Pattern Spray Nozzles

All Regular Pattern Spray Nozzles were tested at a height of 36 inches. (Recommended operating height is between 18 & 48 inches.)

These nozzles are designed for left-hand or right-hand mounting and provide a wide spray pattern with approximately 15° of kickback under the nozzle.

When using left-hand and right-hand nozzles together, adjust the nozzles to allow for enough kickback overlap between the nozzles to prevent streaking in spray coverage. Nozzles can be rotated to adjust distance of spray pattern outward or amount of kickback under the nozzle.



Full Pattern Spray Nozzles

All Full Pattern Spray Nozzles were tested at a height of 36 inches. (Recommended operating height is between 18 & 48 inches.)

These nozzles are designed to provide a full left-hand to right-hand spray pattern from a single centrally mounted nozzle.



Spraying Safety

ALWAYS WEAR PROTECTIVE CLOTHING WHEN SPRAYING AND / OR HANDLING ANY AND ALL CHEMICALS.

BOOMINATOR[®]

SPRAY NOZZLES NOZZLE INSTALLATION TIPS AND OPERATION

Nozzle Height Adjustment

Nozzles can be used at various heights within the recommended range. However, this will affect the spray pattern width and the gallons per acre (GPA) applied. Refer to conversion formulas on page 11.

Multi-Pass Spraying

When multi-pass spraying, be sure to overlap the ends of spray patterns 12 - 16 inches to ensure even coverage.



Adverse Wind Conditions

With boomless spray nozzles, as with other spraying methods, high or gusty wind conditions can cause drifting or pattern movements, adversely affecting spray coverage. If this occurs, wait for more favorable conditions before continuing.

Plumbing Requirements

Make sure that all plumbing components and feed lines can properly supply the nozzle or nozzles at their rated GPM and PSI. The type of pump used as well as the size and length of the feed line will also affect how efficiently the volume is delivered to the nozzle or nozzles.

Minimum hose size and plumbing requirements are

1 - 1/4" MNPT Nozzle	1/2" ID Hose	2 - 1/2" MNPT Nozzles	1-1/4" ID Hose
2 - 1/4" MNPT Nozzles	3/4" ID Hose	1 - 1" MNPT Nozzle	1-1/4" ID Hose
1 - 1/2" MNPT Nozzle	1" ID Hose	2 - 1" MNPT Nozzles	1-1/2" ID Hose

Proper Nozzle Operation

To insure proper nozzle operation all pressure readings must be taken directly before the nozzle or nozzles.

Nozzle Mounting Center Distance

To insure proper kickback overlap between the two nozzles and spray distance outward when mounting a pair of regular pattern nozzles together these are the recommended nozzle center distances.

2 - 1/4" Nozzles	3" - 4" Center Distance
2 - 1/2" Nozzles	6" - 7" Center Distance
2 - 1" Nozzles	8" - 9" Center Distance

Nozzle Combinations for Roadside and Right-of-Way Spraying

Speed	Nozzle Combination	Speed	Nozzle Combination
2 to 12 MPH	1 - 1255 Right	5 to 15 MPH	1 - 1876 Right
	1 - 1871 Right		1 - 2651 Right
	1 - 2650RS		1 - 3750RS

For roadside and right-of-way spraying at these speeds, nozzles with patterns of 6 feet or less should be mounted 12" - 24" above the ground. Larger patterns should be mounted 18" - 48" above the ground.

Spraying Safety

ALWAYS WEAR PROTECTIVE CLOTHING WHEN SPRAYING AND / OR HANDLING ANY AND ALL CHEMICALS.

BOOMINATOR®

All Short Pattern Spray Nozzles were tested at a height of 18 inches. (Recommended operating height is between 12 & 36 inches.)

SPRAY NOZZLES SHORT PATTERN

* Water was used for all calculations listed.



SHORT PATTERN SPRAY NOZZLES

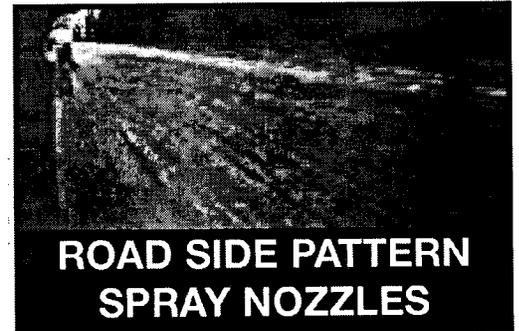
Right hand nozzle
shown in photo

NOZZLE	RIGHT or LEFT	(1/4" MNPT)			SPEED (MPH)																		
		PSI	GPM	SPRAY PATTERN	GALLONS PER ACRE																		
1165	RIGHT or LEFT	20	1.0	5 ft.	2	3	4	5	6	7	8	9	10	11	12								
		30	1.2	5 ft.	49.5	33	24.5	20	16.5	14	12	11	10	9	8								
		40	1.4	5 ft.	59.5	39.5	30	23.5	20	17	15	13	12	11	10								
					69.5	46	34.5	27.5	23	20	17	15.5	14	12.5	11.5								
1253	RIGHT or LEFT	20	1.5	3 ft.	2	3	4	5	6	7	8	9	10	11	12								
		30	1.7	3 ft.	124	83	62	50	41	35	31	28	25	23	21								
		40	2.0	3 ft.	140	94	70	56	47	40	35	31	28	26	23								
					165	110	83	66	55	47	41	37	33	30	28								
1255	RIGHT or LEFT	20	1.5	5 ft.	2	3	4	5	6	7	8	9	10	11	12								
		30	1.7	5 ft.	74	50	37	30	25	21	19	17	15	14	12								
		40	2.0	5 ft.	84	56	42	34	28	24	21	19	17	15	14								
					99	66	50	40	33	28	25	22	20	18	17								
1404	RIGHT or LEFT	20	1.7	4 ft.	2	3	4	5	6	7	8	9	10	11	12								
		30	2.0	4 ft.	105	70	53	42	35	30	26	23	21	19	18								
		40	2.5	4 ft.	124	83	62	50	41	35	31	28	25	23	21								
					155	103	77	62	52	44	39	34	31	28	26								
1406	RIGHT or LEFT	20	1.7	6 ft.	2	3	4	5	6	7	8	9	10	11	12								
		30	2.0	6 ft.	70	47	35	28	23	20	18	16	14	13	12								
		40	2.5	6 ft.	83	55	41	33	28	24	21	18	17	15	14								
					103	69	52	41	34	30	26	23	21	19	17								
1876	RIGHT or LEFT	20	3.0	6 ft.	2	3	4	5	6	7	8	9	10	11	12	13	14	15					
		30	3.5	6 ft.	124	83	62	50	41	SPEED (MPH)							12	13	14	15			
		40	4.3	6 ft.	144	96	72	58	48	GALLONS PER ACRE							35	31	28	25	23	21	19
					177	118	89	71	59	51	44	39	35	32	30	27	25	24					
1871	RIGHT or LEFT	20	3.0	10 ft.	2	3	4	5	6	7	8	9	10	11	12	13	14	15					
		30	3.5	10 ft.	74	50	37	30	25	SPEED (MPH)							12	13	14	15			
		40	4.3	10 ft.	87	58	43	35	29	GALLONS PER ACRE							21	19	17	15	14	13	12
					106	71	53	43	35	25	22	19	17	16	15	13	12	11	10				
2651	RIGHT or LEFT	20	6.7	10 ft.	2	3	4	5	6	7	8	9	10	11	12	13	14	15					
		30	7.5	10 ft.	166	111	83	66	55	SPEED (MPH)							12	13	14	15			
		40	8.5	10 ft.	186	124	93	74	62	GALLONS PER ACRE							47	41	37	33	30	28	26
					210	140	105	84	70	60	53	47	42	38	35	32	30	28	25	24			
3121	RIGHT or LEFT	20	7.2	10 ft.	2	3	4	5	6	7	8	9	10	11	12	13	14	15					
		30	9.0	10 ft.	178	119	89	71	59	SPEED (MPH)							12	13	14	15			
		40	10.6	10 ft.	223	149	111	89	74	GALLONS PER ACRE							51	45	40	36	32	30	27
					262	175	131	105	87	64	56	50	45	41	37	34	32	30	27	25	24		
										75	66	58	52	48	44	40	37	34	32	30	27	25	24

BOOMINATOR[®]

SPRAY NOZZLES ROAD SIDE PATTERN

All Roadside Pattern Spray Nozzles were tested at a height of 36 inches. (Recommended operating height is between 18 & 48 inches.)



**ROAD SIDE PATTERN
SPRAY NOZZLES**

* Water was used for all calculations listed.

1250RS RIGHT ONLY	(1/4" MNPT)		
	PSI	GPM	SPRAY PATTERN
	20	1.5	16 ft.
30	1.7	16 ft.	
40	2.0	16 ft.	

SPEED (MPH)							
1	2	3	4	5	6	7	
GALLONS PER ACRE							
46	23	16	12	9	8	7	
53	26	18	13	11	9	8	
62	31	21	16	12	10	9	

1400RS RIGHT ONLY	(1/4" MNPT)		
	PSI	GPM	SPRAY PATTERN
	20	1.7	17 ft.
30	2.0	17 ft.	
40	2.5	17 ft.	

SPEED (MPH)											
2	3	4	5	6	7	8	9	10	11	12	
GALLONS PER ACRE											
25	17	12	10	8	7	6	5.5	5	4.5	4	
30	19	15	12	10	8	7	6.5	6	5	4.5	
36	24	18	15	12	10	9	8	7	6.5	6	

1870RS RIGHT ONLY	(1/4" MNPT)		
	PSI	GPM	SPRAY PATTERN
	20	3.0	18 ft.
30	3.5	18 ft.	
40	4.3	18 ft.	

SPEED (MPH)											
2	3	4	5	6	7	8	9	10	11	12	
GALLONS PER ACRE											
41	28	21	17	14	12	10	9	8	7.5	7	
48	32	24	19	16	14	12	11	10	9	8	
59	39	30	24	20	17	15	13	12	11	10	

2650RS RIGHT ONLY	(1/2" MNPT)		
	PSI	GPM	SPRAY PATTERN
	20	6.7	20 ft.
30	7.5	20 ft.	
40	8.5	20 ft.	

SPEED (MPH)														
2	3	4	5	6	7	8	9	10	11	12	13	14	15	
GALLONS PER ACRE														
83	55	41	33	28	24	21	18	16	15	14	13	12	11	
93	62	46	37	32	26	23	20	18	17	15	14	13	12	
105	70	52	42	35	30	26	23	21	19	17	16	15	14	

3120RS RIGHT ONLY	(1/2" MNPT)		
	PSI	GPM	SPRAY PATTERN
	20	7.2	21 ft.
30	9.0	21 ft.	
40	10.6	21 ft.	

SPEED (MPH)														
2	3	4	5	6	7	8	9	10	11	12	13	14	15	
GALLONS PER ACRE														
85	56	42	34	28	24	21	19	17	15	14	13	12	11	
106	71	53	42	35	30	26	23	21	19	17	16	15	14	
125	83	62	50	41	36	31	28	25	23	21	19	18	16	

3750RS RIGHT ONLY	(1/2" MNPT)		
	PSI	GPM	SPRAY PATTERN
	20	12.0	22 ft.
30	14.0	22 ft.	
40	15.0	22 ft.	

SPEED (MPH)														
2	3	4	5	6	7	8	9	10	11	12	13	14	15	
GALLONS PER ACRE														
135	90	67.5	54	45	38.5	34	30	27	24.5	22.5	21	19	18	
157	105	79	63	52.5	45	39	35	31.5	29	26	24	22.5	21	
169	113	84	67.5	56	48	42	37.5	34	31	28	26	24	22.5	

4370RS RIGHT ONLY	(1/2" MNPT)		
	PSI	GPM	SPRAY PATTERN
	20	13.0	23 ft.
30	15.5	23 ft.	
40	17.5	23 ft.	

SPEED (MPH)														
2	3	4	5	6	7	8	9	10	11	12	13	14	15	
GALLONS PER ACRE														
140	93	70	56	47	40	35	31	28	25	23	22	20	19	
167	112	83	67	56	48	42	37	33	30	28	26	24	22	
188	126	94	75	63	54	47	42	38	34	31	29	27	25	

BOOMINATOR®

All Regular Pattern Spray Nozzles were tested at a height of 36 inches. (Recommended operating height is between 18 & 48 inches.)

SPRAY NOZZLES REGULAR PATTERN

* Water was used for all calculations listed.



REGULAR PATTERN SPRAY NOZZLES

Right hand nozzle shown in photo

NOZZLE SIZE	RIGHT or LEFT	(1/4" MNPT)			SPEED (MPH)													
		PSI	GPM	SPRAY PATTERN	GALLONS PER ACRE													
1160	RIGHT or LEFT	20	1.0	16 ft.	2	3	4	5	6	7	8	9	10	11	12			
		30	1.2	16 ft.	15.5	10	8	6	5	4.5	18.5	12.5	9	7.5	6	5.5		
		40	1.4	16 ft.	21.5	14.5	11	8.5	7	6								
1250	RIGHT or LEFT	20	1.5	16 ft.	1	2	3	4	5	6	7							
		30	1.7	16 ft.	46	23	16	12	9	8	7							
		40	2.0	16 ft.	53	26	18	13	11	9	8							
1400	RIGHT or LEFT	20	1.7	17 ft.	2	3	4	5	6	7	8	9	10	11	12			
		30	2.0	17 ft.	25	17	12	10	8	7	6	5.5	5	4.5	4			
		40	2.5	17 ft.	30	19	15	12	10	8	7	6.5	6	5	4.5			
1870	RIGHT or LEFT	20	3.0	18 ft.	2	3	4	5	6	7	8	9	10	11	12			
		30	3.5	18 ft.	41	28	21	17	14	12	10	9	8	7.5	7			
		40	4.3	18 ft.	48	32	24	19	16	14	12	11	10	9	8			
2650	RIGHT or LEFT	20	6.7	20 ft.	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		30	7.5	20 ft.	83	55	41	33	28	24	21	18	16	15	14	13	12	11
		40	8.5	20 ft.	93	62	46	37	32	26	23	20	18	17	15	14	13	12
3120	RIGHT or LEFT	20	7.2	21 ft.	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		30	9.0	21 ft.	105	70	52	42	35	30	26	23	21	19	17	15	14	13
		40	10.6	21 ft.	125	83	62	50	41	36	31	28	25	23	21	19	18	16
3750	RIGHT or LEFT	20	12.0	22 ft.	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		30	14.0	22 ft.	135	90	67.5	54	45	38.5	34	30	27	24.5	22.5	21	19	18
		40	15.0	22 ft.	157	105	79	63	52.5	45	39	35	31.5	29	26	24	22.5	21
4370	RIGHT or LEFT	20	13.0	23 ft.	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		30	15.5	23 ft.	169	113	84	67.5	56	48	42	37.5	34	31	28	26	24	22.5
		40	17.5	23 ft.	188	126	94	75	63	54	47	42	38	34	31	29	27	25

BOOMINATOR®

SPRAY NOZZLES REGULAR PATTERN

All Regular Pattern Spray Nozzles were tested at a height of 36 inches. (Recommended operating height is between 18 & 48 inches.)

5000 RIGHT or LEFT	(1" MNPT)			SPEED (MPH)														
	PSI	GPM	SPRAY	GALLONS PER ACRE														
			PATTERN	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
20	17.0	25 ft.		168	112	84	67	56	48	42	37	34	31	28	26	24	22	
30	20.0	25 ft.		198	132	99	79	66	57	50	44	40	36	33	31	28	26	
40	23.0	25 ft.		228	152	114	91	76	65	57	51	46	41	38	35	33	30	

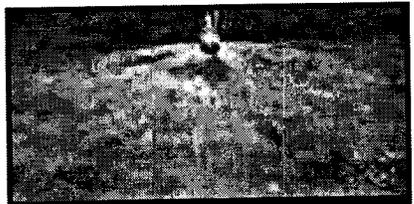
6250 RIGHT or LEFT	(1" MNPT)			SPEED (MPH)															
	PSI	GPM	SPRAY	GALLONS PER ACRE															
			PATTERN	4	6	8	10	12	14	16	18	20	22	24	26	28	30		
20	21.0	25 ft.		104	69	52	42	35	30	26	23	21	19	17	16	15	14		
30	25.0	25 ft.		124	83	62	50	41	35	31	28	25	23	21	19	18	17		
40	29.0	25 ft.		144	96	72	57	48	41	36	32	29	26	24	22	21	19		

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SPRAY NOZZLES FULL PATTERN

All Full Pattern Spray Nozzles were tested at a height of 36 inches. (Recommended operating height is between 18 & 48 inches.)

* Water was used for all calculations listed.

1250FS	(1/4" MNPT)			SPEED (MPH)							
	PSI	GPM	SPRAY	GALLONS PER ACRE							
			PATTERN	1	2	3	4	5	6	7	
20	1.5	16 ft.		46	23	16	12	8	7.5	6.5	
30	1.7	16 ft.		53	26	18	13	11	9	8	
40	2.0	16 ft.		62	31	21	16	12	10	9	

1400FS	(1/4" MNPT)			SPEED (MPH)											
	PSI	GPM	SPRAY	GALLONS PER ACRE											
			PATTERN	2	3	4	5	6	7	8	9	10	11	12	
20	1.7	17 ft.		25	17	12	10	8	7	6	5.5	5	4.5	4	
30	2.0	17 ft.		29	19	15	12	10	8	7	6.5	6	5	4.5	
40	2.5	17 ft.		36	24	18	15	12	10	9	8	7	6.5	6	

1400FM	(1/4" MNPT)			SPEED (MPH)											
	PSI	GPM	SPRAY	GALLONS PER ACRE											
			PATTERN	2	3	4	5	6	7	8	9	10	11	12	
20	1.7	22 ft.		19	13	10	8	6	5.5	5	4.5	4	3.5	3	
30	2.0	22 ft.		23	15	11	9	8	6	5.5	5	4.5	4	3.5	
40	2.5	22 ft.		28	19	14	11	9	8	7	6	5.5	5	4.5	

BOOMINATOR®

All Full Pattern Spray Nozzles were tested at a height of 36 inches. (Recommended operating height is between 18 & 48 inches.)

SPRAY NOZZLES FULL PATTERN

1870FS	(1/4" MNPT)			SPEED (MPH)											
	PSI	GPM	SPRAY	GALLONS PER ACRE											
			PATTERN	2	3	4	5	6	7	8	9	10	11	12	
20	3.0	18 ft.	41	28	21	17	14	12	10	9	8	7.5	7		
30	3.5	18 ft.	48	32	24	19	16	14	12	11	10	9	8		
40	4.3	18 ft.	59	39	30	24	20	17	15	13	12	11	10		

1870FM	(1/4" MNPT)			SPEED (MPH)											
	PSI	GPM	SPRAY	GALLONS PER ACRE											
			PATTERN	2	3	4	5	6	7	8	9	10	11	12	
20	3.0	23 ft.	32	22	16	13	10	9	8	7	6.5	6	5		
30	3.5	23 ft.	38	25	19	15	13	11	9	8	7.5	7	6		
40	4.3	23 ft.	46	31	23	19	15	13	12	10	9	8	7.5		

1870FL	(1/4" MNPT)			SPEED (MPH)											
	PSI	GPM	SPRAY	GALLONS PER ACRE											
			PATTERN	2	3	4	5	6	7	8	9	10	11	12	
20	3.0	30 ft.	25	17	12	10	8	7	6	5.5	5	4.5	4		
30	3.5	30 ft.	29	19	14	12	10	8	7	6	5.5	5	4.5		
40	4.3	30 ft.	36	25	18	14	12	10	9	8	7	6.5	6		

2650FS	(1/2" MNPT)			SPEED (MPH)														
	PSI	GPM	SPRAY	GALLONS PER ACRE														
			PATTERN	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
20	6.7	16 ft.	104	69	52	41	34.5	30	26	23	21	19	17	16	15	14		
30	8.0	16 ft.	124	82.5	62	50	41	35	31	27.5	25	22.5	21	19	18	16.5		
40	10.0	16 ft.	155	103	77	62	51.5	44	39	34	31	28	26	24	22	21		

2650FM	(1/2" MNPT)			SPEED (MPH)														
	PSI	GPM	SPRAY	GALLONS PER ACRE														
			PATTERN	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
20	6.7	23 ft.	72	48	36	29	24	20.5	18	16	14	13	12	11	10	9.5		
30	8.0	23 ft.	86	57	43	34	29	24.5	21.5	19	17	16	14	13	12	11.5		
40	10.0	23 ft.	108	72	54	43	36	31	27	24	21.5	19.5	18	16.5	15	14		

2650FL	(1/2" MNPT)			SPEED (MPH)														
	PSI	GPM	SPRAY	GALLONS PER ACRE														
			PATTERN	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
20	6.7	38 ft.	43.5	29	22	17.5	14.5	12.5	11	10	9	8	7	6.5	6	5.5		
30	8.0	38 ft.	52	35	26	21	17	15	13	11.5	10.5	9.5	9	8	7.5	7		
40	10.0	38 ft.	65	43	32.5	26	22	18.5	16	14.5	13	12	11	10	9.5	8.5		

BOOMINATOR®

SPRAY NOZZLES FULL PATTERN

All Full Pattern Spray Nozzles were tested at a height of 36 inches. (Recommended operating height is between 18 & 48 inches.)

NOZZLE	(1/2" MNPT)			SPEED (MPH)													
	PSI	GPM	SPRAY	GALLONS PER ACRE													
			PATTERN	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3120FS	20	11.3	23 ft.	122	81	61	49	40	37	30	27	24	22	20	19	17	16
	30	13.0	23 ft.	140	93	70	56	47	43	35	31	28	25	23	21	20	19
	40	15.0	23 ft.	161	108	81	65	54	50	41	36	32	29	27	25	23	22
3120FM	(1/2" MNPT)			SPEED (MPH)													
	PSI	GPM	SPRAY	GALLONS PER ACRE													
			PATTERN	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3120FL	20	11.3	27 ft.	104	69	52	41	35	30	26	23	21	19	17	16	15	14
	30	13.0	27 ft.	119	79	60	48	40	34	30	26	24	22	20	18	17	16
	40	15.0	27 ft.	138	92	69	55	46	39	34	30	28	25	23	21	20	18
3120FL	(1/2" MNPT)			SPEED (MPH)													
	PSI	GPM	SPRAY	GALLONS PER ACRE													
			PATTERN	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3750FM	20	13.8	30 ft.	70	47	35	28	23	20	17.5	15.5	14	13	11.5	11	10	9
	30	16.4	30 ft.	80	54	40	32	27	23	20	18	16	14.5	13.5	12	11.5	10.5
	40	18.0	30 ft.	93	62	46.5	37	31	26.5	23	20.5	18.5	17	15.5	14	13	12
3750FM	(1/2" MNPT)			SPEED (MPH)													
	PSI	GPM	SPRAY	GALLONS PER ACRE													
			PATTERN	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3750FL	20	13.8	30 ft.	114	76	57	46	38	33	28	25	23	21	19	18	16	15
	30	16.4	30 ft.	135	90	68	54	45	39	34	30	27	25	23	21	19	18
	40	18.0	30 ft.	149	99	74	59	50	42	37	33	30	27	25	23	21	20
3750FL	(1/2" MNPT)			SPEED (MPH)													
	PSI	GPM	SPRAY	GALLONS PER ACRE													
			PATTERN	2	3	4	5	6	7	8	9	10	11	12	13	14	15
4370FL	20	16.3	44 ft.	85	57	43	34	28	24	21	19	17	16	14	13	12	11
	30	20.0	44 ft.	101	68	51	41	34	29	25	23	20	18	17	16	14	13
	40	24.0	44 ft.	111	74	56	45	37	32	28	25	23	20	18	17	16	15
4370FL	(1/2" MNPT)			SPEED (MPH)													
	PSI	GPM	SPRAY	GALLONS PER ACRE													
			PATTERN	2	3	4	5	6	7	8	9	10	11	12	13	14	15
4370FL	20	16.3	44 ft.	92	61	46	37	31	26	23	20	18	17	15	14	13	12
	30	20.0	44 ft.	113	75	56	45	38	32	28	25	23	20	19	17	16	15
	40	24.0	44 ft.	135	90	68	54	45	39	34	30	27	25	23	21	19	18

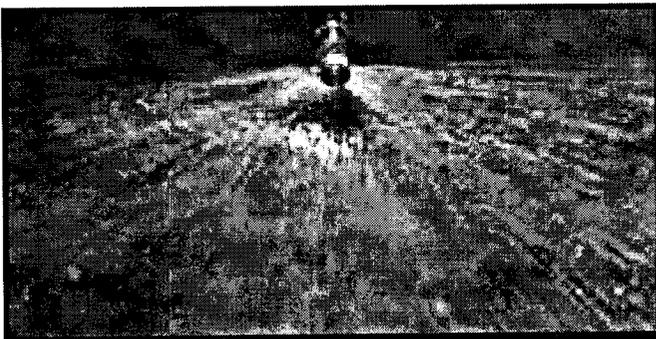
BOOMINATOR®

SPRAY NOZZLES CONVERSION FORMULAS

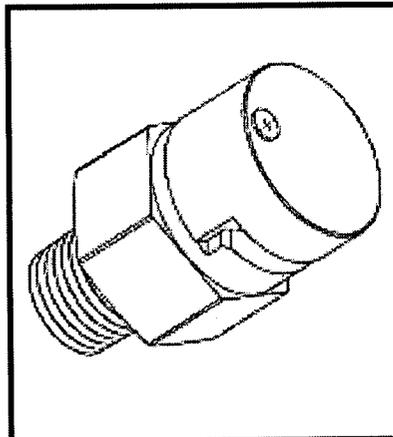
CONVERSION FORMULAS

$$\text{Gallons per 1000 sq. ft.} = \frac{\text{GPM} \times 136}{\text{MPH} \times \text{Spray Width in Inches}}$$

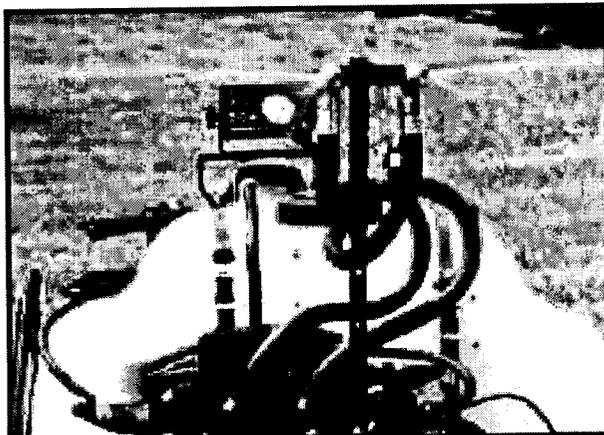
$$\text{Gallons per Acre} = \frac{\text{GPM} \times 5940}{\text{MPH} \times \text{Spray width in Inches}}$$



TOW BEHIND SPRAYER WITH FULL
PATTERN BOOMINATOR® SPRAY NOZZLE



**YOU CAN TELL
IT'S A
BOOMINATOR®
NOZZLE ON SIGHT**
*Boominator's® unique
round head shape lets
you know it is a
genuine Boominator®
nozzle. It is also
patented and with
patents pending.
Boominator®.*

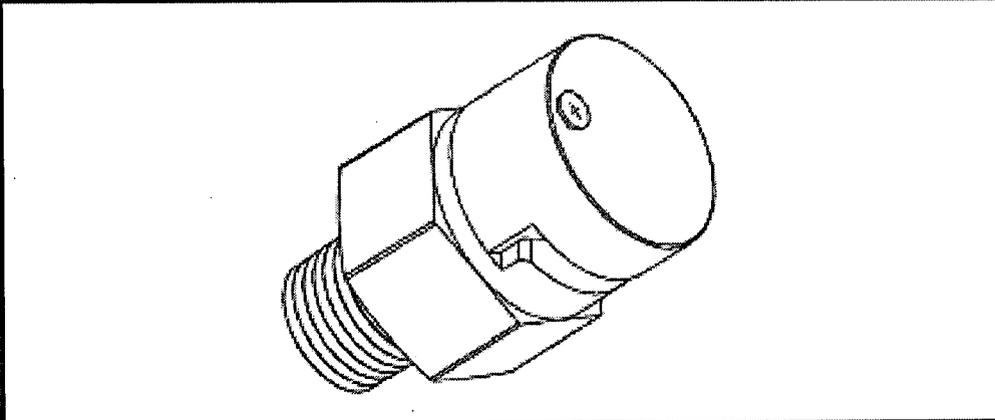


ATV MOUNTED SPRAYER WITH 2 REGULAR
PATTERN BOOMINATOR® NOZZLES



TRUCK MOUNTED SHORT PATTERN
BOOMINATOR® SPRAY NOZZLES

 Made in U.S.A. 



You CAN TELL It's A BOOMINATOR® NOZZLE ON SIGHT.
Boominator's® unique round head shape lets you know it is a genuine Boominator® nozzle. It is also patented and with patents pending. Boominator®.

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