

WILGER
SPRAYER &
LIQUID FERTILIZER
PARTS CATALOG

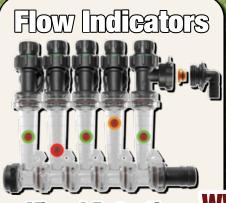
Revised December 2022

WORLD CLASS SPRAYING COMPONENTS









Visual Detection of Plugged Lines

FOR MORE INFORMATION VISIT

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Row-by-Row Flowmeter





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NEW & FEATURED PARTS [Page 1]

New Nozzle & Cap Adapters



COMBO-JET Quarter-turn

New options for Double-Down Spraying!

40441-00

For COMBO-JET & COMBO-RATE **Nozzle bodies**

Double-Down Adapter sprays two nozzles straight down

Ideal for high-volume applications, tough to reach targets, and making the most out of the nozzles you have on hand.

40206-00 For non-Wilger **Nozzle outlets**



*Converts a square-lug outlet to Double-Down COMBO-JET outlets



Agrifac to COMBO-JET -Pop-in Sleeve-40205-00

For Agrifac Nozzle Bodies

> The simple adapter sleeve snaps into any COMBO-JET cap to adapt to an Agrifac outlet

Agrifac™ is a trademark owned by Agrifac Machinery B.V.. All rights reserved

Improved



nozzles on Agrifac nozzle body outlets.

Adapter COMBO for Double-Down on Agrifac 40441-00 40205-00 **APPROVED**



Agrifac to COMBO-JET Y-Adapter 40213-00

For Agrifac Nozzle Bodies

The simple adapter uses two existing COMBO-JET nozzles split into two 30° angles.





PWM APPROVEI

Narrow Angle Drift Reduction Nozzles available in 20° 40° & 60°



For Optical & Spot Spraying

Outlet Extensions

For extending nozzles to avoid spray interference & more



COMBO-RATE Manifolds for sprayers

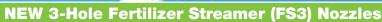
Need to replace your yard sprayer's control manifold? Building your own yard or ATV sprayer?

COMBO-RATE manifolds are modular and can be expanded or modified with any COMBO-RATE fittings. Some pre-built manifolds are available.





20



Precision molded & color-coded liquid fertilizer streamer caps for consistent liquid fertilizer with less plant burn.

single part number for easy ordering.

Includes metering orifice and deflector plate in a performance at higher pressures



Use Tip Wizard for Fertilizer Streaming Nozzle Selection

Available in sizes from 0.15 us gpm - 2.0 us gpm

Simply input your intended application rate(s), speed, nozzle spacing and you are well on your way to finding the best fertilizer streamer nozzle for your spray applications.



NEW & FEATURED PARTS [Page 2]

COMBO-RATE® Top Turrets

A top take-off turret changes the orientation of the module for larger PWM solenoids. The top-turret is available with new double-down spray outlets.

COMBO-RATE top-turrets are compatibility with all stacking COMBO-RATE parts.



COMBO-RATE® Swivel End Body for Fence-row spraying



A new COMBO-RATE end body that provides a swivel joint that is **adjustable in 15° increments (via lock screw & teeth)**, and locked into place for crop adapted spraying or fence-row nozzle spraying.

Perfectly paired with the new COMBO-RATE Boom End Flush Valve for a compact and protected fence-row nozzle



COMBO-JET® Nozzle Bodies for PWM

Are you retrofitting your sprayer to PWM?

Cost-effective & compact nozzle
body for any tight sprayer boom.

40623-NM 1" Combo-Jet Triple Swivel 4063-NM 1" Square Lug Triple Swivel Nozzle Body

High-Flow COMBO-RATE II Bodies

Larger 21/32" inlet size nozzle bodies can provide significantly higher flow capacity than standard 3/8" inlets.

Check the COMBO-RATE section.



COMBO-RATE® Boom End Flush Valve

A super compact fitting including the last spray nozzle body, full flush valve, and recirculation port.



1.5" Super Compact Boom Ends



Engineered for Recirculating Spray Systems



Passively Purges Air from the Top of the Boom Recirculating boom port

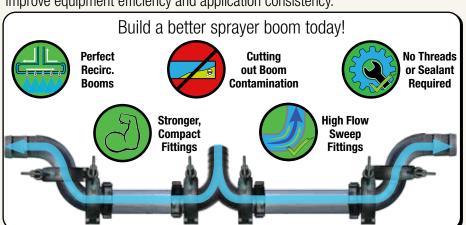
2x Stackable COMBO-RATE nozzle body port

Full ID Flush Valve



Quick Flange Sprayer Boom Fittings

The sprayer boom fittings for the next generation of sprayers, equipped to improve equipment efficiency and application consistency.











Easy Flange Boom End Conversion for QN SST

Easy Flange Boom End Conversion for 1" Pipe

NEW & FEATURED PARTS [Page 3]

New O-Ring Seal Fittings & Assemblies



New pre-assembled Flowmeter Manifolds

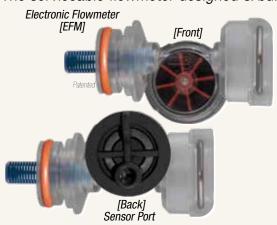
New electronic flowmeter manifolds with straight check valve allow for easy ordering and building of systems.

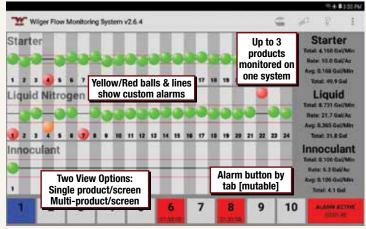
Simply replicate each section of the implement with manifolds of the same size, cap off the ends, add a hose feed, and away you go.

Available in manifolds of 1-4 Outlets.

Wilger Electronic Row-By-Row Flow Monitoring System

The serviceable flowmeter designed & built specifically for agricultural chemical & liquid applications







High Accuracy Flowmeter



Crystal Clear Flowmeter



Fittings Swivel 360°



Modular Design for Any Size Equipment





Superior Chemical Resistance



EFM systems are developed by OEM manufacturers using WILGER parts

Wilger Product Literature & Tools



Wilger provides free printed product literature, prices lists and tools. Request a copy today. All brochures are also available at www.wilger.net

GER Ti

Tip Wizard Updates

Tip Wizard has new features! ORS metering orifice calculator, Flow Indicator Ball Selector, and further improved Tip Wizard spray tip search.

WIZARD Tip Wizard aims to lead the industry as the best spray tip calculator for broadcast applications.

WHERE TO BUY WILGER PRODUCT

To find a list of local dealers/retailers and distributors in your area, visit the WILGER.net 'WHERE TO BUY' page, to easily enter your address to find local Wilger product.



The COMBO-JET. Spray Nozzle Advantage

MR110-06

Less plugging, as the path of flow always gets larger

40% longer strainer that snaps & seals into place

SR / MR / DR / UR 90% 75% 90%+ **Drift Reduction Series**

Cap color matched to flow rate

Super long-lasting stainless steel spray tip The most versatile spray tips for Pulse Width Modulation Systems (e.g. Capstan Pinpoint®/EVO®, Case AIM Command®, John Deere ExactApply®, IntelliSpray®, Raven Hawkeye®, & more)

Spray tip & cap are held together as one piece

Easy-to-read label

(MR110-06 = MR Series, 110° tip, 0.6 US GPM flow rate)

Best educational spray tip charts & tools provided to select the best spray tips

Combo-Jet tips use a modern pre-orifice & closed chamber design that produces significantly less drift, creates solid mass droplets, for maximum spray velocity and more meaningful spray.

Without needing consistent air induction for drift reduction

Combo-Jet spray tips are the preferred tip for Pulse Width Modulation (PWM) spraying systems.

WILGER.NET has the most useful spray tip selection help in the world.







TIP WIZARD ONLINE



EXCEL-BASED CHARTS





COMBO-JET® ER/SR/MR/DR/UR Spray Tips - What is the difference?

The sliding scale of droplet size means at any flow rate, you can match your desired spray quality.











Comparison Criteria	ER Series Extended Range	SR Series Small Reduction	MR Series Mid-Range Reduction	DR Series Drift Reduction
Spray Tip Design	Conventional Flat Fan	Pre-orifice Drift Reduction	Pre-orifice Drift Reduction	Pre-orifice Drift Reduction
Spray Quality @40PSI	Medium	Coarse	Extremely Coarse	Extremely Coarse
Droplet Size¹ @40PSI	Smallest (246µ VMD¹)	Medium (371μ VMD¹)	Large (474µ VMD¹)	Very Large (529µ VMD¹)
% <141μ² % <600μ³	20% of volume < 141µ 94% of volume <600µ	8% of volume < 141μ 89% of volume <600μ	4% of volume < 141μ 74% of volume <600μ	2% of volume < 141μ 64% of volume <600μ
Drift Potential	Most likely to drift	Lower drift potential	Major reduction in drift	Very low drift potential
Coverage	Best	Excellent	Very good	Good

¹Based on an XX110-06 nozzle @ 40 psi (2.75 BAR)

²Droplets smaller than 141µ are more likely to drift. 141µ is used as a standard for estimating driftable fines.

³Droplets smaller than 600μ provide better coverage. Droplets > 600μ consume more spray volume, reducing overall coverage

UR Series Drift Reduction

> **Dual Chamber Drift Red. Ultra-Coarse**

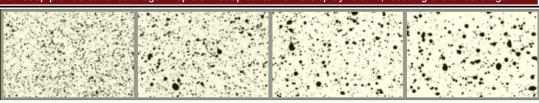
Ultra Coarse (633µ VMD1)

UR spray tips are specialty spray tips, designed for certain chemical applications that require exceptional drift reduction.

They are not be to be replaced with other spray tip series that are not approved to be on the chemical label. Always follow up-to-date label information.

Refer to chemical application label for maximum pressures, speeds and application information.

More information available at www.wilger.ne



Selecting the Correct Spray Quality & Droplet Size

Diffiva Effecty

Generally speaking, smaller droplets deposit on the target more effectively than larger droplets, but larger droplets will drift less. So, when balancing drift control and efficacy, ensure to follow chemical labels and guidelines to designate the required spray quality and droplet size.

Where to find target spray quality or droplet size?

Depending on the chemical, as well as the different methods and modes of applications, some chemical labels may have less/more information. In general, chemical labels will have a description of how it should be applied, in the form of an ASABE spray classification recommendation, or a minimum spray classification (e.g. Spray at least ASABE Coarse). Some chemical label will also stipulate which nozzles can be used.

Application Information:

• Water Volume: Minimum 22 L per acre.

Minimum volume requirement on chemical label

Reference max pressure for conventional nozzles like ER series.

Nozzles and Pressure: 30 to 40 psi (210 to 275 kPa) when using conventional flat fan nozzles.

Try avoid conventional (non-drift reduction) spray tips.

Low drift nozzles may require higher pressures for proper performance. Use a combination of nozzles and pressure designed to deliver thorough, even coverage of **ASABE coarse spray**. Droplet spectrum recommendation for balance of drift & coverage.

Example Spray Quality Chart by Type of Application

ASABE S-572.1 Classification Category	Color Code	Estimated VMD Range for Spray Quality*	Contact Insecticide & Fungicide	Systemic Insecticide & Fungicide	Contact Foliar Herbicide	Systemic Foliar Herbicide	Soil-Applied Herbicide	Incorporated Soil-Applied Herbicide	Fertilizer
Extremely Fine (XF)	Purple	Under 60							
Very Fine (VF)	Red	60-105							
Fine (F)	Orange	106-235							
Medium (M)	Yellow	236-340							
Coarse (C)	Blue	341-403							
Very Coarse (VC)	Green	404-502							
Extremely Coarse (XC)	White	503-665							
Ultra Coarse (UC)	Black	Over 665							

The above table provides general guidelines regarding droplet size and spray quality used in most spray applications.

It is always required that you carefully read and follow updated chemical manufacturers application label and instructions.

What about Multi-Tip Spraying? When to consider Double-Down & Angled Spraying

Potential problems with HIGH FLOW applications (15GPA+) with a single spray nozzle: Spraying high volume out of a single tip can produce droplets that are 'too large" to be effective for coverage, which make for less effective spray application.

Using multiple spray tips at the same time can provide substantial gains in effective coverage into crops or applications that otherwise would be very difficult to cover; **however**, multi-tip spraying should not be used without reason.

A typical time to use **Multi-Angle** spraying:

For improved coverage on a vertical growing target (e.g. wheat) when you are needing to paint both sides of the plant with fungicide.

(e.g. Fusarium Head Blight)



A typical time to use **Double-Down** spraying:

For high rate applications that rely on consistent coverage in a dense canopy. Use a nozzles to produce a meaningful mix of coarser and finer spray to hit different levels of the canopy.



Pairing already-owned nozzles to make a dual nozzle pair:

Much of the time, an operator already has 1-2 nozzles on the sprayer that could be stacked as a pair, so it is an effective way to use existing nozzles to improve spray application with very little cost.

^{*}NOTE: VMD range does not classify spray quality. Always ensure spray quality is followed first. VMD is a supplementary figure, and it is normal that nozzles with similar VMD can be classified into different spray qualities.

A First-timer's look at Tip Wizard



Beginner's Guide to using Tip Wizard

- 1 Choose application units, spray system type, and search function (e.g. Search for tips)
- Enter application rate, spraying speed¹, nozzle spacing, and spray tip angle². ¹Since PWM systems can modulate flow by changing the spray duration, enter the MAX typical spraying speed. ²Spray tip angle required is based on nozzle spacing and boom height. Always maintain 100% overlap.
- 3 Enter target spray quality or target droplet size (microns).

<This is where Tip Wizard gets more useful>

Each chemical used in agricultural spraying has different spray quality requirements for best efficacy and also to maintain tolerable levels of driftable fines for spraying in ideal conditions. Using the droplet size (VMD) allows a more advanced way to filter through series of tips.

Where to find target spray quality or droplet size?

Depending on the chemical, as well as the different methods and modes of applications, some chemical labels may have less/more information. In general, chemical labels will have a description of how it should be applied, in the form of an ASABE spray classification recommendation, or a minimum spray classification (e.g. Spray at least ASABE Coarse

Application Information: Minimum water requirement on chemical label by law

• Water Volume: Minimum 22 L per acre.

• Nozzles and Pressure: 30 to 40 psi (210 to 275 kPa) when using conventional flat fan nozzles. Try avoid non-drift reduction tips

Low drift nozzles may require higher pressures for proper performance. Use a combination of nozzles and pressure designed to deliver thorough, even coverage of **ASABE coarse spray**. Proplet spectrum recommendation for balance of drift & coverage.

Spray Categories as per ASABE S572.1 Classification

Extremely Fine Very Fine Medium Coarse Very Coarse Extremely Coarse

Ultra Coarse

For the example chemical label application information, we'd have a classification of COARSE droplet size to follow. Considering the mode of application as well as the action (e.g. systemic herbicide vs. contact herbicide), you can choose the spray quality that would suit **your conditions** as best as possible. REMEMBER: the larger the droplet size/VMD, the coarser the spray, resulting in less coverage.

For advanced users, using a VMD droplet size can further filter into a spray quality to make it easier to compare one series to another.

For an example, we might find we typically have windier conditions, so try filter our results to stay around 375µ-400µ for our targeted droplet size.

Select the Best Spray Tip for your needs.

Based on the operating speed, pressure, spray quality, and while also gauging the last few columns (VMD, % drift, % of small droplets for coverage), make a selection.

Picking Spray Tips for Auto-Rate Controlled Sprayers

1 STEP 1: Size Your Tip Since the application rate must be consistent, selecting a tip sized to the required rate over the actual sprayer speed range is critical. It is recommended to use Tip Wizard, as it will adjust the chart specifically for any application rate, not just common pairs of rate & speed.

FOCUS ON: SPEED & PRESSURE for a required APPLICATION RATE

Speed and pressure dictate a spray tip's ability to match a rate, and we must ensure our typical travel speed follows a reasonable pressure range. Meet your minimum speed (e.g. turning) within the operational pressure range. Having pressure too low in slow spots can lead to spotty coverage. Once you have referenced your chart to find your applied rate to your speed, you will find a certain nozzle size will be most effective.

*FOR PWM SPRAYERS (DUTY CYCLE): Since you have more control of your pressure, your sprayer will typically allow for a wider selection of tip size.

Try to pick a size that allows a duty cycle of 60-80% at your typical sprayer speed, allowing sufficient speed up/down.

2 STEP 2: Filter to Your Spray Quality Each chemical will require a nozzle spray quality (for labels that do not, consult chemical representative or agronomist, or general guide based on mode of action), since you have selected your tip size (e.g. 110-04) you can now find the best option within the series available in that nozzle size. The ER/SR/MR/DR/UR series differ based on spray quality & drift reduction.

FOCUS ON: 'ASABE S572' SPRAY CLASSIFICATION

droplets in ideal conditions

Since the pressure is dictating the spray quality, you'll want to filter out any tip series that cannot apply the recommended spray quality.

*FOR PWM SPRAYERS (Pressure Selection): Your spray quality can be changed with changing of sprayer pressure. This means instead of maintaining the required quality through a fixed operating pressure range, you can maintain a more flexible pressure range (provided duty cycle is OK).

3 STEP 3: Double Check It is worthwhile to review extra information provided for the spray tip, and re-evaluate if necessary. While the extra information in extrapolated from lab conditions without active ingredients, and cannot be considered actual, but it does lend to paint a picture of differences between series.

[ADVANCED] FOCUS ON: Spray % <141μ, Spray % <600μ, VMD (μ)

The extra columns reinforce the different spray qualities between different series, but also give the ability to make a rough spray plan for managing real life spraying conditions.

Spray % <141µ: % of total spray that can be considered driftable fines. In ideal conditions, it would be reasonable to assume this spray is NOT going where you want it to go. Due to evaporation before absorption, off-target spray or inversion, very small droplets will not likely hit target. Ideally have a spray tip that minimizes driftable fines, BUT ensure you maintain an acceptable level of coverage.

As speed, wind conditions & boom height increase, observed spray drift will increase substantially.

Spray % <600µ: % of total spray that can be considered small droplets. As % of these useful droplets lowers, coverage is reduced.

Consider it the 'other half' of the spray application, focusing on small droplets for coverage. Whereas you should maintain a low $\%<141\mu$, try to keep a $\%<600\mu$ as high as possible, to maintain better coverage. As a very rough guideline with some usually chemical applications, aim for $\sim80+\%<600\mu$ for systemic applications; or $\sim90+\%<600\mu$ for contact applications; provided drift reduction levels are met and are satisfactory.

VMD (μ): The volumetric median diameter is the middle-point of spray distribution, and can be used to estimate between different series of the same size spray tips (tested on the same laboratory equipment). It is not for comparing between brands of tips. If you are familiar with using a VMD in tip searches, you can use it as an intensive filter to further focus in on tips that might work for your application. For example, if you are happy with spray application with the MR110-04 at 50PSI (346μ VMD), the spray quality might be comparable to an SR110-06 at 50 PSI (337μ VMD). Bear in mind, VMD is used for educational purposes only, and should not dictate application.

For more Guides, Videos & Reading on proper nozzle selection, visit www.wilger.net

We aim to have all sorts of ways to help make the best educated decision in picking and using spray tips, so if there is something you find would be helpful, don't hesitate to reach out and ask. Often, we cannot provide EVERYTHING there is to know in our guides, as it can be overwhelming, so if you are wanting to get more information from an expert, contact WILGER.

Picking Spray Tips for Pulse Width Modulation (PWM) Sprayers

NOTE: PWM Spray systems differ in some respects (max flow capacity, pulse frequency (Hz), and other general variations in operation. This guide is a general guide that applies to most PWM spray systems, but for clarification would be based on a 10Hz solenoid, with a relative max flow capacity of 1.5 us gpm (this determines the relative pressure drop). Wilger does not own, produce, or have any ownership of PWM spray systems. All rights reserved by their owners.

1 STEP 1: Size Your Tip Since the application rate must be consistent, selecting a tip sized to the required rate over the actual sprayer speed range is critical. It is recommended to use Tip Wizard, as it will adjust the chart specifically for any application rate.

Since PWM sprayers have control of sprayer pressure, a PWM sprayer will typically allow for a wider selection of tip sizes.

FOCUS ON: SPEED, PRESSURE & DUTY CYCLE (DC%) for a required APPLICATION RATE

Speed, pressure and respective duty cycle dictate a spray tip's ability to match a rate, and we must ensure our typical travel speed follows a reasonable pressure range. Having duty cycles <50% can degrade spray quality and consistency of spray swath, so it is always recommended to be above that. Try to pick a size that allows a duty cycle of 60-80% at your typical sprayer speed, allowing sufficient speed up/down. If a nozzle is approaching 90-100% at your maximum sprayer speed at your highest pressures, this can be a good indication that a nozzle is sufficiently sized.

Before you look at any coverage/spray quality characteristics of a nozzle, you should have solidified which nozzle SIZE will work best first.

STEP 2: Filter to Your Spray Quality Each chemical will require a nozzle spray quality (for labels that do not, consult chemical representative or agronomist, or general guide based on mode of action), since you have selected your tip size (e.g. 110-04) you can now find the best option within the series available in that nozzle size. The ER/SR/MR/DR/UR series differ based on spray quality & drift reduction.

FOCUS ON: 'ASABE \$572' SPRAY CLASSIFICATION

Since the pressure is dictating the spray quality, you'll want to filter out any tip series that cannot apply the recommended spray quality. Since PWM gives full control of sprayer pressure, this will usually filter the results to 1-2 nozzles within a size or series.

S STEP 3: Pick your most flexible spray nozzle It is worthwhile to review extra information provided for the spray tip, and re-evaluate if necessary. While the extra information in extrapolated from lab conditions without active ingredients, and cannot be considered actual, but it does lend to paint a picture of differences between series.

The goal is to select a nozzle that can be applied at relatively moderate pressures (e.g. 50-60PSI) when spray conditions are ideal, giving a means to reduce pressure to 30-40PSI to have a 'drift reduction mode' that can be called upon when less ideal conditions arrive.

[ADVANCED] FOCUS ON: Spray % <141μ, Spray % <600μ, VMD (μ)

The extra columns reinforce the different spray qualities between different series, but also give the ability to make a rough spray plan for managing real life spraying conditions.

Spray % <141µ: % of total spray that can be considered driftable fines. In ideal conditions, it would be reasonable to assume this spray is NOT going where you want it to go. Due to evaporation before absorption, off-target spray or inversion, very small droplets will not likely hit target. Ideally have a spray tip that minimizes driftable fines, BUT ensure you maintain an acceptable level of coverage.

As speed, wind conditions & boom height increase, observed spray drift will increase substantially. With wind speeds of 12mph+, it can be expect to have driftable fine spray double. Windy conditions, higher drift sensitivity, and other environmental reasons are serious considerations for what might be an acceptable level of driftable fines.

By general chemical mode of action, you might have a reference point for % driftable fines, which might be generalized as:

Systemic Herbicides: Try maintain driftable fines <10%. (For very sensitive applications and herbicides, the requirement might go down to even 1.5-5%) Contact Herbicides & Fungicides: Try maintain driftable fines <15%. This allows for a consistent and high level of coverage without losing a great deal to driftable fines. It is often part of a good balance between driftable fines and coverage.

Spray % <600µ: % of total spray that can be considered small droplets. As % of these useful droplets lowers, coverage is reduced. Consider it the 'other half' of the spray application, focusing on small droplets for coverage. Whereas you should maintain a low %<141µ, try to keep a %<600μ as high as possible, to maintain better coverage. As a very rough guideline with some usually chemical applications, aim for ~80+% <600μ for systemic applications; or ~90+% <600µ for contact applications; provided drift reduction levels are met and are satisfactory.

VMD (µ): The volumetric median diameter is the middle-point of spray distribution, and can be used to estimate between different series of the same size spray tips (tested on the same laboratory equipment). It is not for comparing between brands of tips, If you are familiar with using a VMD in tip searches. you can use it as an intensive filter to further focus in on tips that might work for your application. For example, if you are happy with spray application with the MR110-04 at 50PSI (346µ VMD), the spray quality might be comparable to an SR110-06 at 50 PSI (337µ VMD). Bear in mind, VMD is used for educational purposes only, and should not dictate application.

Quick-Start Example: 10 US GPA @ 14 MPH, on 20" spacing, with a PWM Spray System, applying SYSTEMIC HERBICIDE (glyphosate)

STEP 1: SIZE THE TIP: Focus on Pressure/Speed Range/Duty Cycle (Try maintain 60-80% duty cycle through full speed/pressure range)

For the best option for a tip size, it'd likely be the **110-06 size**. (110-05 falls short of nozzle size, and 110-08 starts getting too large)

It would apply 10 US GPA, 14MPH anywhere between 30-60PSI PSI, allowing more than enough room into turn situations if turn compensation is available.

STEP 2: QUALIFY THE SPRAY

Since the chemical label for glyphosate requires a 'even coverage of **ASABE COARSE droplets**', we will notice the ER110-06 is too fine, the SR fits just right, and the MR/DR are a fair bit coarser than required. We could also use a VMD of 400µ to filter out more.

Note: The MR & DR series are coarser than required, but might be suitable for applicators who have to apply into more drift-sensitive areas.

For this example, we will single out the SR110-06 as our best tip series.

STEP 3: DOUBLE CHECK SR110-06 for max flexibility between 'IDEAL SPRAYING MODE' & 'DRIFT REDUCTION MODE'

@50PSI: DUTY CYCLE: 75% 🗸 Excellent @35PSI: DUTY CYCLE: 90% 🗸 OK @50PSI: COARSE Spray Class **@50PSI % < 141μ: ~9%** ✓ Good

Ideal Condition Spraying @ 14MPH: Drift Sensitive Spraying @ 14MPH: @35PSI: VERY COARSE Spray Class @35PSI % < 141µ: ~6% ✓ Excellent

Further considerations: Given the high level of coverage at higher pressures (50PSI+), this same nozzle could be used for contact herbicides and fungicides to cover more applications.

Part No:	et® SR110-06 40287-06 Calar a: Not Required	: Grey				⊕
Pressure (psl) V	Speed Range (mph) 😲	DC (%) @ 14 mph	Class	VMD (pl)	<141 (%) V	<600 (%
25	23 133	=100	XC	466µ	3	76
30	3.6-14.4	97	VC	438µ	5	81
35	3.9-15.6	90	VC	414µ	6	84
40	42-16-6	84	.0	393a	7	87
45	4.4-17.6	80	c	375µ	8	88
50	4.7-18.6	75	C	358µ	9	90
55	4.9-19.5	72	c	344µ	10	91
60	5.1-20.4	69	c	330µ	11	92

Picking Nozzles for Dual-tip Spraying

Picking two spray tips isn't much different than a single tip. Since the sprayer has some means of adjust the flow to match a flow rate, simply pick a nozzle size that would supply the full rate, and then divide it into parts that would provide the same flow rate.

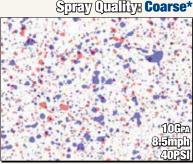
For example: If a 110-10 nozzle size is required for an application, suitable pairs would be like a '110-06 + 110-04' or '110-05 + 110-05', as the cumulative size would be able to apply the same rate as a single 110-10. For consistency, limit the size difference to two nozzle sizes to ensure consistent back pressure between both nozzles. (e.g. 110-08 +110-02 would not be ideal as the -08 might steal flow from the -02)

O STEP 1: Size Your Tip Since the application rate must be consistent, selecting a tip sized to the required rate over the actual sprayer speed range is critical. It is recommended to use Tip Wizard, as it will adjust the chart specifically for any application rate, not just common pairs of rate & speed.

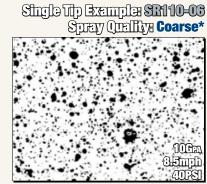
FOCUS ON: SPEED & PRESSURE for a required APPLICATION RATE

*FOR PWM SPRAYERS (DUTY CYCLE): Since you have more control of your pressure, your sprayer will typically allow for a wider selection of tip size. Try to pick a size that allows a duty cycle of 60-80% at your typical sprayer speed, allowing sufficient speed up/down.

STEP 2: Filter to Your Spray Quality Each chemical will require a nozzle spray quality (for labels that do not, consult chemical representative or agronomist, or general guide based on mode of action), since you have selected your tip size (e.g. 110-04) you can now find the best option within the series available in that nozzle size. The ER/SR/MR/DR/UR series differ based on spray quality & drift reduction.



Exemple: 2xx SR110-03 STEW QUALLY Coarse'



*IMPORTANT: FOR PWM SPRAYERS (Pressure-drop through solenoid): Depending on the solenoid used, for larger nozzle sizes (or cumulative nozzle sizes for double-down nozzles) there will be greater pressure drop. So, when considering spray quality for the smaller nozzles in a pair, verify the pressure drop for the cumulative size as it will differ from the nozzles individually. With the pressure drop factor, cross-reference the spray quality of the smaller nozzles in the pair for their more realistic spray quality (after pressure drop).

🗿 STEP 3: Double Check Just like the 'Quick-start guide to picking spray tips', refer to the extra information to qualify nozzles to ensure they will suit your application. Since the pair of nozzles are spraying a fraction of the total weight, there is some synergy between having one as a finer nozzle and the other coarser to produce a more meaningful mix of spray droplet sizes to get where they need to go.

[ADVANCED] FOCUS ON: Spray % <141μ, Spray % <600μ, VMD (μ)

The extra columns reinforce the different spray qualities between different series, but also give the ability to make a rough spray plan for managing real life spraying conditions.

Spray % <141u: % of total spray that can be considered driftable fines. If one nozzle is producing more driftable fines than the other, but when averaging based on the flow, you'd want to ensure you are still at a tolerable driftable fines % given the application.

As speed, wind conditions & boom height increase, observed spray drift will increase substantially. This is especially the case with forward/backward facing

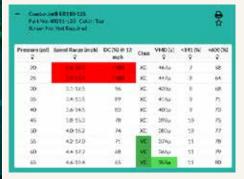
Spray % <600µ: % of total spray that can be considered small droplets. As % of these useful droplets lowers, coverage is reduced.

Since you are splitting a single 'large' nozzle into two smaller nozzles, you should take advantage of getting a much higher %<600µ than possible with a

VMD (µ): As VMD is the middle point in the distribution of spray, and a pair of nozzles will have a blended VMD when both are considered, simply qualify a tip based on acceptable spray quality first, and take note of the two nozzles and

EXAMPLE: 20 US GPA Glufosinate (Contact Herbicide), on 20" spacing, traveling 12 mph, using a PWM spray system

STEP 1: Using Tip Wizard (or nozzle charts), a 110-125 nozzle size would suffice for travel speed and pressure range. The ER110-125 is shown as an example. With this 110-125 nozzle size, we know a nozzle pair adding to a \sim 110-125 would be suitable for the application rate, (e.g 110-06 + 110-06) With this, split the nozzle size into portions and search for a '10 Gpa' nozzle and '10Gpa' nozzle for example, based on a fraction of total flow. NOTE: There is extra pressure drop through a solenoid, so keep that in mind when selecting nozzles as the spray quality will differ from nozzles operating by



STEP 2: By chemical label, Glufosinate is to be applied as a ASABE medium spray quality or coarser. Qualify spray nozzles suitable for chemical label requirement.

STEP 3: Qualify nozzle pair based on spray quality, and pick based on most suitable % driftable fines (ideally <15%) and % coverage (ideally >90%) **Example Result:**



Double-Down SR110-06 would provide upwards of 10%+ more volume made of small droplets, without increasing driftable fines.

The spray quality is within the 'coarse' spray quality, just outside MEDIUM spray quality. An ER series could be substituted to provide a mix of even finer spray into the dual nozzle setup.

Total flow would be the same as a 110-12, which would be nominally smaller than a 110-125.

COMBO-JET ER Series Spray Tips

The ER series spray tip is a conventional flat fan nozzle, emphasizing consistent spray pattern with relatively fine spray. All ER nozzles are manufactured with a stainless steel tip.



Longer Lasting Stainless Tips



Less Plugged Nozzles



Perfect for PWM Sprayers

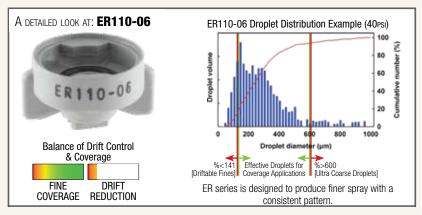


Consistent Pattern at Lower PSI





Acid Resistant Nozzles



COMBO-JET® ER80° ASABE S572.1 Spray Quality Chart

						J	_				
Pressure (PSI)	20	25	30	35	40	45	50	60	65	70	80
ER80-01	F	F	F	F	F	F	F	F	F	F	F
ER80-015	F	F	F	F	F	F	F	F	F	F	F
ER80-02	F	F	F	Щ	Щ	Щ	F	Щ	Щ	Щ	F
ER80-025	M	M	F	Щ	Щ	Щ	I.	Щ	Щ	Щ	F
ER80-03	M	M	F	Щ	Щ	Щ	I.	Щ	Щ	Щ	F
ER80-04	M	M	M	M	M	Щ	I.	Щ	Щ	Щ	F
ER80-05	C	C	M	M	M	M	M	M	M	E	F
ER80-06	C	С	С	С	С	С	M	M	M	M	M
ER80-08	VC	C	С	M	M	M	M	Щ	Щ	Щ	H
ER80-10	XC	XC	XC	VC	C	C	С	M	M	M	T
ER80-125		XC	XC	VC	VC	C	C	С	С	С	M
ER80-15		XC	XC	XC	VC	C	C	С	M	M	M
ER80-20		UC	XC	XC	XC	XC	VC	C	С	С	C
ER80-25		UC	XC	XC	XC	VC	VC	C	С	С	С
ER80-30		UC	UC	XC	XC	XC	XC	XC	XC	VC	VC
ER80-40				XC	XC	XC	XC	XC	XC	XC	VC
ER80-50				XC	XC	XC	XC	XC	XC	XC	VC
ER80-60				XC	XC	XC	XC	XC	XC	XC	VC

COMBO-JET® ER110° ASABE S572.1 Spray Quality Chart

Pressure (PSI) 20 25 30 35 40 45		60	65	70	80
				10	00
ER110-01 F F F F F	F	F	F	F	F
ER110-015 F F F F F	F	F	F	F	F
ER110-02 F F F F F F	F	F	F	F	F
ER110-025 F F F F F	F	F	F	F	F
ER110-03 F F F F F	F	F	F	F	F
ER110-04 M M M M F F	F	F	F	F	F
ER110-05 M M M M F F	F	F	F	F	F
ER110-06 C M M M M M	M	M	M	F	F
ER110-08	M	F	F	F	F
ER110-10 VC C C C C C	M	M	M	M	F
ER110-125 XC XC XC VC VC	С	С	С	С	C
ER110-15 XC XC XC VC VC	С	С	С	С	C
ER110-20 XC XC XC XC XC	XC XC	XC	VC	VC	C
ER110-25 XC XC XC XC XC	XC XC	XC	VC	VC	C
ER110-30 UC XC XC XC XC	: XC	XC	XC	XC	VC

COMBO-JET® ER Series Specifications

Approved for PWM Spray Systems
Compatible with all PWM Spray systems/Hz.

Operating Pressure 20-100PSI

Flat Fan Nozzle Type

Conventional Flat Fan

Nozzle Materials Spray Tip: Stainless Steel O-ring: FKM, 13mm x 3mm #40260-00 (witon avail Cap: Glass-reinforced Polypropylene

ASABE Spray Classification

(ASABE S572.1 Standard)

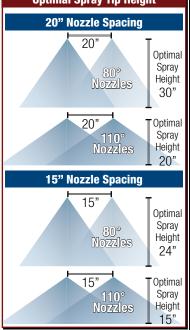
Spray quality is categorized based on Dv0.1 and VMD droplet sizes. Objective testing data (by 3rd party), from spray spectrum recording equipment (without wind tunnel use), has been used to classify spray quality for this chart. Chart shown includes spray quality at tested data points as well as extrapolated data points.

Fine (F)
Medium (M)
Coarse (C)

Very Coarse (VC)
Extremely Coarse (XC)
Ultra Coarse (UC)

Tips sized up to 110-06 verified on Phase Doppler Particle Analyzer (PDPA); tips sized over 110-06 verified on Malvern

Optimal Spray Tip Height



COMBO-JET SR Series Spray Tips

The SR series spray tip is a closed-chamber, pre-orifice drift reduction nozzle, emphasizing a first stage of drift reduction. The SR series balances excellent coverage spray with significant drift reduction upwards of 50%+.



Longer Lasting Stainless Tips

Perfect

for PWM

Sprayers



Less Plugged Nozzles

Consistent

Pattern at

Lower PSI

A DETAILED LOOK AT: SR110-06



Balance of Drift Control & Coverage

FINE DRIFT COVERAGE REDUCTION

SR series droplet distribution balances excellent fine spray coverage while reducing driftable fines.

Solid Mass Spray Droplets



Acid Resistant Nozzles

COMBO-JET® SR80° ASABE S572.1 Spray Quality Chart

Pressure (PSI)	25	30	35	40	45	50	60	65	70	80
SR80-01	M	M	F	F	F	F	F	F	F	F
SR80-015	C	M	M	M	M	F	Æ	F	F	F
SR80-02	C	M	M	M	M	M	F	F	F	F
SR80-025	C	C	C	M	M	M	M	M	M	F
SR80-03	C	C	C	C	C	C	M	M	M	M
SR80-04	C	C	C	C	C	C	С	M	M	M
SR80-05	VC	VC	C	C	C	C	С	C	C	C
SR80-06	XC	VC	VC	VC	C	C	С	C	C	C
SR80-08	UC	UC	UC	UC	XC	XC	XC	XC	XC	XC
SR80-10	UC	UC	UC	UC	UC	UC	XC	XC	XC	XC
SR80-125	UC	XC	XC	XC						
SR80-15	UC									
SR80-20		UC								
SR80-25		UC								
SR80-30		UC								

COMBO-JET® SR Series Specifications

Approved for PWM Spray Systems
Compatible with all PWM Spray systems/Hz.

Operating Pressure 25-100PSI

Flat Fan Nozzle Type Closed-Chamber, Pre-Orifice Drift Reduction

Nozzle Materials Spray Tip: Stainless Steel O-ring: FKM, 13mm x 3mm #40260-00 (viton avail.) Cap: Glass-reinforced Polypropylene

ASABE Spray Classification

(ASABE S572.1 Standard)

Spray quality is categorized based on Dv0.1 and VMD droplet sizes.
Objective 3rd party testing data, from spray spectrum recording equipment (without wind tunnel use), has been used to classify spray quality for this chart. Chart shown includes spray quality at tested data points as well as extrapolated data points.

Fine (F)
Medium (M)
Coarse (C)

■ Very Coarse (VC)
□ Extremely Coarse (XC)
■ Ultra Coarse (UC)

Tips sized up to 110-06 verified on Phase Doppler Particle Analyzer (PDPA); tips sized over 110-06 verified on Malvern.

COMBO-JET® SR110° ASABE S572.1 Spray Quality Chart

Pressure (PSI)	25	30	35	40	45	50	60	65	70	80
SR110-015	M	F	F	F	F	F	F	F	F	F
SR110-02	M	M	F	F	F	F	F	F	F	F
SR110-025	M	M	M	M	M	F	F	F	F	F
SR110-03	С	C	C	C	M	M	M	M	M	F
SR110-04	С	C	C	C	C	M	M	M	M	M
SR110-05	С	C	C	C	C	C	C	M	M	M
SR110-06	VC	VC	C	C	C	C	C	C	С	M
SR110-08	UC	XC	XC	XC	XC	VC	C	C	С	C
SR110-10	UC	XC	XC	XC	XC	XC	VC	C	С	C
SR110-125	UC	UC	XC	XC	XC	XC	XC	VC	C	C
SR110-15	UC	UC	UC	UC	XC	XC	XC	XC	XC	XC
SR110-20		UC	UC	XC						
SR110-25		UC	UC	XC						

 Optimal Spray Tip Height

 15" Nozzle Spacing
 20" Nozzle Spacing

 15"
 20" Nozzle Spacing

 Nozzles
 30" Tip Height

 Nozzles
 15" Nozzles

LERAP Ratings for SR Series
As of January 2021

SR110-05

↑↑↑ 75% ↑↑ 50% 1.0-1.5bar 1.6-3.0bar

For the updated list of nozzles, visit www.wilger.net/LERAP
More information on LERAP certification, process, and the most up to date listing of approved nozzles and their ratings, is available from the Health and Safety Executive (HSE), also available online @

https://secure.pesticides.gov.uk/SprayEquipment



COMBO-JET® SR Pre-orifices - by nozzle size [Replacement Only]

-(01	-015	-02	-025	-03	-04	-05	-06	-08	-10	-125	-15	-20	-25	-30
4028	85-01	40285-015	40285-01	40285-025	40285-03	40285-04	40285-05	40285-06	40285-08	40285-10	40285-125	40285-15	40285-20	40285-25	40285-30

COMBO-JET MR Series Spray Tips

The MR series spray tip is a closed-chamber, pre-orifice drift reduction nozzle, emphasizing a second stage of drift reduction. The MR series balances great coverage spray with significant drift reduction upwards of 75%+.



Longer Lasting Stainless Tips

Perfect

for PWM

Sprayers



Drift



Reduction

Consistent

Pattern at

Lower PSI



Effective Droplets for %>600 [Driftable Fines] Coverage Applications [Ultra Coarse Droplets]

Solid Mass Spray **Droplets**



Acid Resistant **Nozzles**

& Coverage FINE DRIFT COVERAGE REDUCTION

MR series is designed to produce relatively coarse spray with minimal drift.

COMBO-JET® MR Series Specifications Approved for PWM Spray Systems Compatible with all PWM Spray systems/Hz. Operating Pressure 30-100PSI Flat Fan Nozzle Type Closed-Chamber, Pre-Orifice Drift Reduction Nozzle Materials Spray Tip: Stainless Steel Repl.O-ring: FKM, 13mm x 3mm #40260-00 (viton avail) Cap: Glass-reinforced Polypropylene **ASABE Spray Classification**

(ASABE S572.1 Standard)
Spray quality is categorized based on Dv0.1 and VMD droplet sizes.
Objective 3rd party testing data, from spray spectrum recording equipment (without wind tunnel use), has been used to classify spray quality for this chart. Chart shown includes spray quality at tested data points as well as extrapolated data points.

Tips sized up to 110-06 verified on Phase Doppler Particle Analyzer (PDPA); tips sized over 110-06 verified on Malvern. **Optimal Spray Tip Height**

■ Very Coarse (VC)
□ Extremely Coarse (XC)
■ Ultra Coarse (UC)

Nozzles

Heigh

MR110-06 Droplet Distribution Example (40PSI)

COMBO-JET® MR80° ASABE S572.1 Spray Quality Chart

Pressure (PSI)	30	35	40	45	50	60	65	70	80
MR80-005	M	M	F	F	F	F	F	F	F
MR80-0067	F	F	F	F	F	F	F	F	F
MR80-01	M	F	F	F	F	F	F	F	F
MR80-015	C	С	C	М	M	M	M	M	F
MR80-02	C	С	C	C	C	M	M	M	M
MR80-025	VC	VC	C	С	C	C	С	С	С
MR80-03	VC	VC	C	С	C	C	С	С	С
MR80-04	VC	VC	C	С	C	C	С	С	С
MR80-05	XC	XC	VC	VC	VC	VC	C	С	С
MR80-06	XC	XC	XC	XC	VC	VC	VC	VC	C
MR80-08	UC	UC	UC	UC	XC	XC	XC	XC	VC
MR80-10	UC	UC	UC	UC	UC	XC	XC	XC	XC
MR80-125	UC	UC	UC	UC	UC	UC	UC	XC	XC
MR80-15	UC	UC	UC	XC	XC	XC	XC	XC	VC
MR80-20		UC	UC	UC	UC	XC	XC	XC	XC
MR80-25		UC	UC	UC	UC	UC	UC	UC	UC
MR80-30		UC	UC	UC	UC	UC	UC	UC	UC
MR80-40		UC	UC	UC	UC	XC	XC	XC	XC
COMBO_ IET®	MR1	10° /	CARE	957) 1 Cr	ray (huality	, Cha	rt

CUMBU-JET® MR110° ASABE S572.1 Spray Quality Chart

Pressure (PSI)	30	35	40	45	50	60	65	70	80
MR110-015	C	С	С	M	M	M	F	F	F
MR110-02	C	С	С	M	M	M	M	M	F
MR110-025	C	С	С	C	C	C	M	M	M
MR110-03	VC	C	C	C	C	C	C	C	C
MR110-04	VC	VC	C	C	C	C	C	C	C
MR110-05	XC	XC	VC	VC	VC	C	C	C	C
MR110-06	XC	XC	XC	VC	VC	VC	VC	VC	C
MR110-08	UC	UC	UC	XC	XC	XC	XC	XC	VC
MR110-10	UC	UC	XC	XC	XC	XC	XC	XC	VC
MR110-125	UC								
MR110-15	UC								
MR110-20		UC	XC						

COMBO-JET® MR Pre-orifices - by size [Replacement Only]

LERAP Ratings for MR Series As of January 2021 MR110-04 MR110-05

Fine (F) Medium (M) Coarse (C)

> ☆☆☆75% ☆☆50% 1.0-2.5BAR 2.6-3.5BAR **ፌ**ተፈትፈት 90% **★★☆** 75% 1.0-1.5BAR 1.6-5.0BAR

↑↑↑↑↑ 90% ↑↑↑ 75% 1.0-1.5bar 1.6-5.0bar MR110-06 For the updated list of nozzles, visit www.wilger.net/LERAP

More information on LERAP certification, process, and the most up to date listing of approved nozzles and their ratings, is available from the Health and Safety Executive (HSE), also available online @

https://secure.pesticides.gov.uk/SprayEquipment

JKI Nozzle Ratings for MRs

	· • • • • • • • • • • • • • • • • • • •				,	00	rb.										
-005	-0067	-01	-015	-02	-025	-03	-04	-05	-06	-08	-10	-125	-15	-20	-25	-30	-40
40285-005	40285-007	40285-01	40285-015	40285-01	40285-025	40285-03	40285-04	40285-05	40285-06	40285-08	40285-10	40285-125		40285-20	40285-25	40285-30	40285-40

COMBO-JET DR Series Spray Tips

The DR series spray tip is a closed-chamber, pre-orifice drift reduction nozzle, emphasizing a third stage of drift reduction. The DR series balances good coverage spray with extremely low driftable fines, upwards of a 90% reduction in driftable fines.



Longer Lasting Stainless **Tips**

Perfect

for PWM

Sprayers



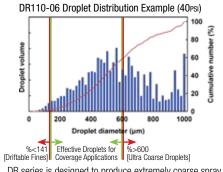
Superior Drift

Reduction



Balance of Drift Control & Coverage

FINE DRIFT COVERAGE REDUCTION



DR series is designed to produce extremely coarse spray with very minimal drift.

Solid Mass Spray **Droplets**



Acid Resistant **Nozzles**

COMBO-JET® DR80° ASABE S572.1 Spray Quality Chart

Pressure (PSI)	30	35	40	45	50	60	65	70	80
DR80-005	С	М	M	F	F	F	F	Æ	ш
DR80-0067	С	C	M	M	M	M	F	Æ	ш
DR80-01	С	C	С	M	M	M	M	Æ	щ
DR80-015	VC	VC	C	C	C	C	C	C	C
DR80-02	XC	VC	VC	VC	VC	C	C	C	C
DR80-025	XC	VC	VC	VC	VC	C	C	C	C
DR80-03	XC	XC	VC	VC	VC	C	C	C	C
DR80-04	XC	XC	XC	XC	XC	XC	VC	VC	C
DR80-05	XC	VC	VC						
DR80-06	XC								
DR80-08	UC								
DR80-10	UC								
DR80-125	UC								
DR80-15	UC								
DR80-20		UC							
DR80-25		UC							
DR80-30		UC	XC						

COMBO-JET® DR110° ASABE S572.1 Spray Quality Chart

Pressure (PSI)	30	35	40	45	50	60	65	70	80
DR110-015	C	C	C	C	C	C	C	M	M
DR110-02	VC	VC	VC	C	C	C	C	C	C
DR110-025	VC	VC	VC	C	C	C	C	C	C
DR110-03	XC	XC	VC	VC	VC	C	C	C	C
DR110-04	XC	XC	VC	VC	VC	VC	C	C	C
DR110-05	XC	VC	VC						
DR110-06	XC	VC							
DR110-08	UC	XC							
DR110-10	UC								
DR110-125	UC								
DR110-15	UC								

COMBO-JET® DR Pre-orifices - by tip size	
[Replacement Only]	

		piuoc	,,,,,	····								VISIL	www.wiigei	.net for upu	alcu charlo	
-005	-0067	-01	-015	-02	-025	-03	-04	-05	-06	-08	-10	-125	-15	-20	-25	-30
40285-005	40285-007	40285-01	40285-015	40285-01	40285-025	40285-03	40285-04	40285-05	40285-06	40285-08	40285-10	40285-125	40285-15	40285-20	40285-25	40285-3

COMBO-JET® DR Series Specifications

Approved for PWM Spray Systems Compatible with all PWM Spray systems/Hz.

> Operating Pressure 30-100PSI

Flat Fan Nozzle Type Closed-Chamber, Pre-Orifice Drift Reduction

Spray Tip: Stainless Steel Repl.O-ring: FKM, 13mm x 3mm #40260-00 (viton avail) Cap: Glass-reinforced Polypropylene

ASABE Spray Classification

(ASABE S572.1 Standard)

Spray quality is categorized based on Dv0.1 and VMD droplet sizes.
Objective 3rd party testing data, from spray spectrum recording equipment (without wind tunnel use), has been used to classify spray quality for this chart. Chart shown includes spray quality at tested data points as well as extrapolated data points.

Fine (F) Medium (M) Coarse (C)

Very Coarse (VC) Extremely Coarse (XC)
Ultra Coarse (UC)

Tips sized up to 110-06 verified on Phase Doppler Particle Analyzer (PDPA); tips sized over 110-06 verified on Malvern.

Optimal Spray Tip Height 20" 30' Tin

	LERAP Ratings for DR Series As of January 2021
DR110-025	☆☆☆ 75% ☆☆50% 1.0-2.5bar 2.6-3.5bar
DR110-03	↑↑↑↑ 90% ★★★ 75% ★★50% 1.0-1.5bar 1.6-2.5bar 2.6-3.5bar
DR110-04	☆☆☆ 75% 1.0-5.0bar
DR110-05	፟ጏጏጏ፟ጏ 90% ፏቷታ 75% 1.0-1.5bar 1.6-5.0bar
DR110-06	↑↑↑ 90% ★★↑ 75% 1.0-3.0Bar 3.1-5.0Bar

For the updated list of nozzles, visit www.wilger.net/LERAP

More information on LERAP certification, and the most up to date listing of tested nozzles, visit https://secure.pesticides.gov.uk/SprayEquipment

			net for upd		
-10	-125	-15	-20	-25	-30

COMBO-JET UR Series* Spray Tips

The UR series spray tip is a dual-chamber, pre-orifice drift reduction nozzle, emphasizing the coarsest stage of drift reduction. The UR series is heavily suited to ultra-low driftable fines, emphasizing drift reduction over coverage.



Approved for Dicamba Mixes



Ultra Low Spray Drift



FINE

COVERAGE

Balance of Drift Control & Coverage

Droplet volum 40 %>600 Effective Droplets [Driftable Fines] for Spray Coverage [Ultra Coarse Droplets]

UR110-06 Droplet Distribution Example (60PSI)

DRIFT UR series is designed to produce ultra coarse spray with REDUCTION extremely little drift.



Perfect for PWM **Sprayers**



Longer Lasting Stainless **Tips**



Solid Mass **Spray Droplets**



Acid Resistant Nozzles

COMBO-JET® UR110° ASABE S572.1 Spray Quality Chart

Pressure (PSI)	35	40	45	50	60	65	70	80
UR110-025	UC	UC	UC	UC	XC	XC	XC	XC
UR110-03	UC	UC	UC	UC	XC	XC	XC	XC
UR110-04	UC							
UR110-05	UC							
UR110-06	UC							
UR110-08	UC							
UR110-10	UC							

COMBO-JET® UR Series* Pre-orifice Sets [Replacement only]

UR two-piece pr	re-orifices must b	e replaced with a	new pair only. Co	rrect orifices must	t be used for prop	er performance.
-025	-03	-04	-05	-06	-08	-10
40292-22	40292-23	40292-24	40292-25	40292-26	40292-28	40292-30

		ngs for UR nuary 2021	Series
UR110-04		75% 2.0-3.0bar Ref. G-2184	50% 4.0-6.0bar Ref. G-2184
UR110-05	90% 2.0bar Ref. G-2185	75% 3.0-6.0bar Ref. G-2185	
UR110-06	90% 2.0-3.0bar Ref. G-2189	75% 4.0-6.0bar Ref. G-2189	

Optimal Spra	ay Tip Height
15" Nozzle Spacing	20" Nozzle Spacing
15"	20"
80°	30°
Nozzlas	Norzzies 30"
15"	20"
110°	110°
Nozzles 15"	Nozzles 20"

COMBO-JET® UR Series Specifications

Approved for PWM Spray Systems Compatible with all PWM Spray systems/Hz.

Operating Pressure 35-100PSI

Flat Fan Nozzle Type Dual Closed-Chamber, Pre-Orifice Drift Reduction

Nozzle Materials

Spray Tip: Stainless Steel Repl.O-ring: FKM, 13mm x 3mm #40260-00 (viton avail) Cap: Glass-reinforced Polypropylene

ASABE Spray Classification

(ASABE S572.1 Standard)
Spray quality is categorized based on Dv0.1 and VMD droplet sizes.
Objective 3rd party testing data, from spray spectrum recording equipment (without wind tunnel use), has been used to classify spray quality for this chart. Chart shown includes spray quality at tested data points as well as extrapolated data points

Fine (F) Medium (M) Coarse (C)

Very Coarse (VC) Extremely Coarse (XC) Ultra Coarse (UC)

UR Nozzles verified on Malvern.



COMBO-JET 80° Spray Tips - Standard Sprayer Systems

Comprehensive rate & speed charts for any nozzle spacing/speed/rate is available on Tip Wizard. Try it today!

Disclaimer: These charts are published for comparative purposes to demonstrate the differences in the series of Combo-Jet® spray tips. Data used to populate this chart is extrapolated from third party testing data from a controlled conditions test with water as the testing solution. Actual spray applications with active chemical ingredients may change the spray dynamics and spray tip performance specifications. Wilger is not liable for any misuse or misrepresentation of this information, leading to (but not limited to) incorrect spray application, crop damage, or any other harm. (Not limited to human, livestock or environmental). Always verify these charts with the most recent charts found on the www.wilger.net, and ALWAYS follow chemical label nozzle requirements.

Nozzle Size &	Flow Rate USGPM	PSI	/	·· c	on 20"	ate in U Nozzle	Spacin	g	9	Ola-	ER80	Serie	S		SR80	olet Size	3		MR80	° Serie	S		DR80	Series	S
Angle	Flow	Boom				Speed - d (on 2)	Class ER8	VMD 0-005		<600 0-005			<141 #4028								<141 #4028	
	us gpm	psi	2gpa	3 _{GPA}	4 _{GPA}	5 _{GPA}	6gpa	7 _{GPA}	8gpa	Class						<141									
	0.035	20	5.3	3.5	2.6	2.1	1.8	1.5	1.3	F	167		100%						004	440/	000/	0	044	00/	1000
80	0.040	25 30	5.9 6.4	3.9 4.3	3.2	2.3	2.0	1.7 1.8	1.5 1.6	F	157 149		100% 100%					M	261 236	11% 17%	99% 98%	C	311 276	6% 11%	100%
-005	0.043	35	6.9	4.6	3.5	2.8	2.3	2.0	1.7	F	142		100%					M	217	22%	97%		250		1007
Nozzles	0.050	40	7.4	5.0	3.7	3.0	2.5	2.1	1.9	F	137	55%	100%					F	201	26%	96%	M	230	19%	
	0.053	45	7.9	5.3	3.9	3.2	2.6	2.3	2.0	F	132		100%					F	189	30%	95%		213		100%
	0.056 0.061	50 60	8.3 9.1	5.5 6.1	4.2	3.3	3.0	2.4	2.1	F	128 121		100% 100%					F	178 161	33%	94%		200 178	25% 30%	100%
	0.064	65	9.5	6.3	4.7	3.8	3.2	2.7	2.4	F	118		100%					F	154	41%	92%	F	169	33%	
	0.066	70	9.8	6.5	4.9	3.9	3.3	2.8	2.5	F	116		100%					F	148	44%	91%	F	161		100%
	0.071	80	11.0	7.0	5.3	4.2	3.5	3.0	2.6	VF	111		100%	CDOC	0007	"40000	0007	F	138	48%	90%	F	148	38%	
	Flow us gpm	Boom	2 _{GPA}	Spraye 3 _{GPA}	4 _{GPA}	d (on 2) 5 _{GPA}	U" spac GPA	7 _{GPA}	8 _{GPA}	Class	VMD		0-0067 <600	Class	VMD	#40288 <141			0-0067 VMD	<141	0-0067 <600		VMD	#40280 <141	
	0.047	20	7.0	4.7	3.5	2.8	2.3	2.0	1.8	F	199		100%	Oldoo	VIVID	X171	\000	Ciuoo	VIVID	NITI.	~000	Olubb	VIVID	X171	~000
	0.053	25	7.9	5.2	3.9	3.1	2.6	2.2	2.0	F	183		100%					М	231	18%	99%	С	337	6%	100%
80	0.058	30	8.6	5.7	4.3	3.4	2.9	2.5	2.2	F	171		100%					F	211	24%	98%		308		100%
-0067 Nozzles	0.063	35 40	9.3	6.2	4.7 5.0	3.7 4.0	3.1	2.7	2.3	F	161 153		100% 100%					F	195 182	29% 33%	97% 96%		285 267	11% 13%	100%
14022103	0.071	45	11.0	7.0	5.3	4.2	3.5	3.0	2.6	F	147		100%					F	171	37%	95%		252		100%
	0.075	50	11.0	7.4	5.6	4.4	3.7	3.2	2.8	F	141	52%	100%					F	162	40%	94%	М	239	17%	100%
	0.082	60	12.0	8.1	6.1	4.9	4.1	3.5	3.0	F	131		100%					F	148	46%	93%	M	218		100%
	0.085	65 70	13.0 13.0	8.5	6.3	5.1	4.2	3.6	3.2	F	128 124		100% 100%					F	142 136	49% 51%	92% 91%	F	210 202		100% 100%
	0.005	80	14.0	9.4	7.0	5.6	4.7	4.0	3.5	F	118		100%					F	127	55%	90%	F	189		100%
	Flow	Boom		Spraye	r Spee			ing) @	10	ER8	0-01	#402		SR8	0-01	#4028		MR	30-01	#4029			0-01	#4028	
	us gpm 0.07	20	4 _{GPA} 5.3	5 _{GPA} 4.2	3.5	7.5 2.8	8 _{GPA} 2.6	9 _{GPA} 2.3	10 _{GPA} 2.1	Class F	175		<600 100%	Ulass	VMD	<141	<600	Ulass	VMD	<141	<600	Class	VMD	<141	<600
	0.07	25	5.9	4.7	3.9	3.1	2.9	2.6	2.3	F	164		100%	М	258	15%	97%								
80	0.09	30	6.4	5.1	4.3	3.4	3.2	2.9	2.6	F	156	41%	100%	M	233	21%	97%	M	218	23%	97%	С	312	10%	94%
-01	0.09	35	6.9	5.6	4.6	3.7	3.5	3.1	2.8	F	149		100%	F	214	25%	97%	F	204	27%	97%		291	12%	95%
Nozzles	0.10	40 45	7.4	5.9 6.3	5.0	4.0	3.7	3.3	3.0	F	143 139		100% 100%	F	199 186	29% 33%	97% 97%	F	191 181	30%	97% 97%		274 260	14% 15%	96% 97%
	0.11	50	8.3	6.6	5.5	4.4	4.2	3.7	3.3	F	134		100%	Ė	176	36%	98%	F	173	36%	97%		248	17%	98%
	0.12	60	9.1	7.3	6.1	4.8	4.5	4.0	3.6	F	128		100%	F	159	41%	98%	F	159	40%	97%		229	19%	99%
	0.13	65	9.5	7.6	6.3	5.0	4.7	4.2	3.8	F	125		100%	F	152	44%	98%	F	153	42%	97%	M	221		100%
	0.13	70 80	9.8 11.0	7.9 8.4	7.0	5.2 5.6	4.9 5.3	4.4	3.9 4.2	F	122 117		100% 100%	F	146 135	46% 50%	98% 98%	F	148 139	44% 48%	97% 97%	F	214 202	21% 23%	101% 102%
	Flow	Boom				d (on 2				ER8	0-015		0-015	SR80	0-015	#4028		_	0-015	#4029		DR80		#4028	
	us gpm	psi	4 GPA	5 _{GPA}	6 _{GPA}	7.5	8 _{GPA}	10gpa	12gpa	Class			<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	0.11	20 25	7.9 8.8	7.0	5.3 5.9	4.2	3.9 4.4	3.2	2.6	F	199 188		100% 100%	С	286	13%	94%								
80	0.12			7.7	6.4	5.1	4.8	3.9	3.2	F	180		10070	M	262	16%	95%	С	323	10%	94%	VC	418	4%	87%
-015		30	9.6	8.3	6.9	5.6	5.2			_		29%	100%	IVI						10/0			~~=	5%	89%
	0.14	35	10.0					4.2	3.5	F	173	32%	100%	М	244	19%	96%	С	301	12%	95%		397		90%
Nozzles	0.14 0.15	35 40	10.0 11.0	8.9	7.4	5.9	5.6	4.5	3.7	F	173 167	32% 34%	100% 100%	M M	230	22%	96% 96%	C C	301 283	12% 14%	96%	С	380	6%	
Nozzles	0.14 0.15 0.16	35 40 45	10.0 11.0 12.0	8.9 9.5	7.4 7.9	5.9 6.3	5.6 5.9	4.5 4.7	3.7 3.9		173 167 162	32% 34% 37%	100% 100% 100%	М	230 218	22% 24%	96% 96% 97%	C C M	301 283 269	12% 14% 16%	96% 97%	C	380 365	6% 6%	91%
Nozzles	0.14 0.15 0.16 0.17 0.18	35 40	10.0 11.0 12.0 12.0 14.0	8.9 9.5 10.0 11.0	7.4	5.9 6.3 6.6 7.3	5.6	4.5	3.7	F	173 167	32% 34% 37% 39%	100% 100%	M M M	230 218 207 191	22% 24% 26% 30%	96% 96% 97% 97% 97%	C C	301 283 269 256 236	12% 14% 16% 17% 20%	96% 97% 97% 98%	C C C	380 365 353 332	6% 6% 7% 8%	91% 92% 94%
Nozzles	0.14 0.15 0.16 0.17 0.18 0.19	35 40 45 50 60 65	10.0 11.0 12.0 12.0 14.0 14.0	8.9 9.5 10.0 11.0 11.0	7.4 7.9 8.3 9.1 9.5	5.9 6.3 6.6 7.3 7.6	5.6 5.9 6.2 6.8 7.1	4.5 4.7 5.0 5.5 5.7	3.7 3.9 4.2 4.5 4.7	F F F	173 167 162 158 151 148	32% 34% 37% 39% 42% 44%	100% 100% 100% 100% 100% 100%	M M M F	230 218 207 191 184	22% 24% 26% 30% 32%	96% 96% 97% 97% 97%	C C M M M	301 283 269 256 236 227	12% 14% 16% 17% 20% 21%	96% 97% 97% 98% 98%	C C C	380 365 353 332 324	6% 6% 7% 8% 8%	91% 92% 94% 94%
Nozzles	0.14 0.15 0.16 0.17 0.18 0.19 0.20	35 40 45 50 60 65 70	10.0 11.0 12.0 12.0 14.0 14.0 15.0	8.9 9.5 10.0 11.0 11.0 12.0	7.4 7.9 8.3 9.1 9.5 9.8	5.9 6.3 6.6 7.3 7.6 7.9	5.6 5.9 6.2 6.8 7.1 7.4	4.5 4.7 5.0 5.5 5.7 5.9	3.7 3.9 4.2 4.5 4.7 4.9	F F F F	173 167 162 158 151 148 145	32% 34% 37% 39% 42% 44% 46%	100% 100% 100% 100% 100% 100% 100%	M M M F	230 218 207 191 184 177	22% 24% 26% 30% 32% 33%	96% 96% 97% 97% 97% 97%	C C M M M	301 283 269 256 236 227 220	12% 14% 16% 17% 20% 21% 22%	96% 97% 97% 98% 98% 99%	C C C C	380 365 353 332 324 316	6% 6% 7% 8% 8% 9%	91% 92% 94% 94% 95%
Nozzies	0.14 0.15 0.16 0.17 0.18 0.19	35 40 45 50 60 65	10.0 11.0 12.0 12.0 14.0 14.0 15.0 16.0	8.9 9.5 10.0 11.0 11.0 12.0 13.0	7.4 7.9 8.3 9.1 9.5	5.9 6.3 6.6 7.3 7.6 7.9 8.4	5.6 5.9 6.2 6.8 7.1	4.5 4.7 5.0 5.5 5.7 5.9 6.3	3.7 3.9 4.2 4.5 4.7	F F F F	173 167 162 158 151 148	32% 34% 37% 39% 42% 44% 46%	100% 100% 100% 100% 100% 100% 100% 100%	M M F F F	230 218 207 191 184	22% 24% 26% 30% 32%	96% 96% 97% 97% 97% 98% 98%	C C M M M M	301 283 269 256 236 227	12% 14% 16% 17% 20% 21%	96% 97% 97% 98% 98% 99%	C C C C	380 365 353 332 324	6% 6% 7% 8% 8% 9% 10%	91% 92% 94% 94%
Nozzles	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm	35 40 45 50 60 65 70 80 Boom psi	10.0 11.0 12.0 12.0 14.0 14.0 15.0 16.0	8.9 9.5 10.0 11.0 11.0 12.0 13.0 Spraye 6GPA	7.4 7.9 8.3 9.1 9.5 9.8 11.0 er Speed 7.5	5.9 6.3 6.6 7.3 7.6 7.9 8.4 d (on 2)	5.6 5.9 6.2 6.8 7.1 7.4 7.9 0" space	4.5 4.7 5.0 5.5 5.7 5.9 6.3 cing) @	3.7 3.9 4.2 4.5 4.7 4.9 5.3	F F F F F ER8	173 167 162 158 151 148 145 140 0-02 VMD	32% 34% 37% 39% 42% 44% 46% 48% #402' <141	100% 100% 100% 100% 100% 100% 100% 100%	M M F F F	230 218 207 191 184 177 167	22% 24% 26% 30% 32% 33% 36%	96% 96% 97% 97% 97% 98% 98%	C C M M M M	301 283 269 256 236 227 220 207	12% 14% 16% 17% 20% 21% 22% 23%	96% 97% 97% 98% 98% 99%	C C C C C C	380 365 353 332 324 316 302	6% 6% 7% 8% 8% 9% 10%	91% 92% 94% 94% 95% 95%
Nozzles	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14	35 40 45 50 60 65 70 80 Boom psi 20	10.0 11.0 12.0 12.0 14.0 14.0 15.0 16.0 5GPA 8.4	8.9 9.5 10.0 11.0 12.0 13.0 Spraye 6GPA 7.0	7.4 7.9 8.3 9.1 9.5 9.8 11.0 r Spee 7.5 5.6	5.9 6.3 6.6 7.3 7.6 7.9 8.4 d (on 2 8GPA 5.3	5.6 5.9 6.2 6.8 7.1 7.4 7.9 0" spac 10gpa 4.2	4.5 4.7 5.0 5.5 5.7 5.9 6.3 cing) @ 12GPA 3.5	3.7 3.9 4.2 4.5 4.7 4.9 5.3	F F F F F ER8 Class	173 167 162 158 151 148 145 140 0-02 VMD 184	32% 34% 37% 39% 42% 44% 46% 48% #402 <141 28%	100% 100% 100% 100% 100% 100% 100% 100%	M M F F F F SR8	230 218 207 191 184 177 167 0-02 VMD	22% 24% 26% 30% 32% 33% 36% #4028 <141	96% 96% 97% 97% 97% 97% 98% 98% 38-02 <600	C C M M M M M	301 283 269 256 236 227 220 207 80-02	12% 14% 16% 17% 20% 21% 22% 23% #4029	96% 97% 97% 98% 98% 99% 99%	C C C C C C	380 365 353 332 324 316 302 0-02	6% 7% 8% 8% 9% 10% #4028	91% 92% 94% 94% 95% 95% 30-02
	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14 0.16	35 40 45 50 60 65 70 80 Boom psi 20 25	10.0 11.0 12.0 12.0 14.0 15.0 16.0 5GPA 8.4 9.4	8.9 9.5 10.0 11.0 12.0 13.0 Spraye 6GPA 7.0 7.8	7.4 7.9 8.3 9.1 9.5 9.8 11.0 r Spee 7.5 5.6 6.3	5.9 6.3 6.6 7.3 7.6 7.9 8.4 d (on 2 8GPA 5.3 5.9	5.6 5.9 6.2 6.8 7.1 7.4 7.9 0" spac 10gpa 4.2 4.7	4.5 4.7 5.0 5.5 5.7 5.9 6.3 cing) @ 12GPA 3.5 3.9	3.7 3.9 4.2 4.5 4.7 4.9 5.3 15gpa 2.8 3.1	F F F F F ER8	173 167 162 158 151 148 145 140 0-02 VMD 184 176	32% 34% 37% 39% 42% 44% 46% 48% #402 <141 28% 31%	100% 100% 100% 100% 100% 100% 100% 100%	M M F F F F SR8 Class	230 218 207 191 184 177 167 0-02 VMD	22% 24% 26% 30% 32% 33% 36% #4028 <141	96% 96% 97% 97% 97% 98% 98% 38-02 <600	C C M M M M M F MR8	301 283 269 256 236 227 220 207 30-02 VMD	12% 14% 16% 17% 20% 21% 22% 23% #4029 <141	96% 97% 97% 98% 98% 99% 99% 00-02 <600	C C C C C C C C C	380 365 353 332 324 316 302 0-02 VMD	6% 6% 7% 8% 8% 9% 10% #4028 <141	91% 92% 94% 94% 95% 95% 30-02 <600
Nozzles 80 -02	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14	35 40 45 50 60 65 70 80 Boom psi 20	10.0 11.0 12.0 12.0 14.0 14.0 15.0 16.0 5GPA 8.4	8.9 9.5 10.0 11.0 12.0 13.0 Spraye 6GPA 7.0	7.4 7.9 8.3 9.1 9.5 9.8 11.0 r Spee 7.5 5.6	5.9 6.3 6.6 7.3 7.6 7.9 8.4 d (on 2 8GPA 5.3	5.6 5.9 6.2 6.8 7.1 7.4 7.9 0" spac 10gpa 4.2	4.5 4.7 5.0 5.5 5.7 5.9 6.3 cing) @ 12GPA 3.5	3.7 3.9 4.2 4.5 4.7 4.9 5.3	F F F F F ER8 Class F F	173 167 162 158 151 148 145 140 0-02 VMD 184	32% 34% 37% 39% 42% 44% 46% 48% #402' <141 28% 31% 34% 36%	100% 100% 100% 100% 100% 100% 100% 70-02 <600 100% 100% 100%	M M F F F F SR8 Class	230 218 207 191 184 177 167 0-02 VMD	22% 24% 26% 30% 32% 33% 36% #4028 <141	96% 96% 97% 97% 97% 97% 98% 98% 38-02 <600	C C M M M M M F MR8 Class	301 283 269 256 236 227 220 207 80-02	12% 14% 16% 17% 20% 21% 22% 23% #4029	96% 97% 97% 98% 98% 99% 99%	C C C C C DR8	380 365 353 332 324 316 302 0-02	6% 7% 8% 8% 9% 10% #4028	91% 92% 94% 94% 95% 95% 30-02
80	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14 0.16 0.17 0.19 0.20	35 40 45 50 60 65 70 80 Boom psi 20 25 30 35 40	10.0 11.0 12.0 12.0 14.0 15.0 16.0 5GPA 8.4 9.4 10 11	8.9 9.5 10.0 11.0 12.0 13.0 Spraye 6GPA 7.0 7.8 8.6 9.3 9.9	7.4 7.9 8.3 9.1 9.5 9.8 11.0 er Speed 7.5 5.6 6.3 6.9 7.4 7.9	5.9 6.3 6.6 7.3 7.6 7.9 8.4 d (on 2 8GPA 5.3 5.9 6.4 6.9 7.4	5.6 5.9 6.2 6.8 7.1 7.4 7.9 0" space 10gpa 4.2 4.7 5.1 5.6 5.9	4.5 4.7 5.0 5.5 5.7 5.9 6.3 cing) @ 12gpa 3.5 3.9 4.3 4.6 5.0	3.7 3.9 4.2 4.5 4.7 4.9 5.3 15gpa 2.8 3.1 3.4 3.7 4.0	F F F F F ER8 Class F F F	173 167 162 158 151 148 145 140 0-02 VMD 184 176 170 166 161	32% 34% 37% 39% 42% 44% 46% 48% #402 <141 28% 31% 34% 36% 38%	100% 100% 100% 100% 100% 100% 100% 70-02 <600 100% 100% 100% 100% 100%	M M F F F F SR8 Class	230 218 207 191 184 177 167 0-02 VMD 273 257 244 233	22% 24% 26% 30% 32% 33% 36% #4028 <141 13% 16% 18% 20%	96% 96% 97% 97% 97% 98% 98% 88-02 <600 94% 95% 96%	C C M M M M M M F F MR8 Class	301 283 269 256 236 227 220 207 30-02 VMD 326 310 298	12% 14% 16% 17% 20% 21% 22% 23% *4029 <141 8% 10% 11%	96% 97% 98% 98% 99% 99% 0-02 <600 94% 94%	C C C C C DR8	380 365 353 332 324 316 302 0-02 VMD 454 435 419	6% 6% 7% 8% 8% 9% 10% #4028 <141	91% 92% 94% 94% 95% 95% 80-02 <600 83% 84%
80 -02	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14 0.16 0.17 0.19 0.20 0.21	35 40 45 50 60 65 70 80 Boom psi 20 25 30 35 40	10.0 11.0 12.0 12.0 14.0 15.0 16.0 5GPA 8.4 9.4 10 11 12	8.9 9.5 10.0 11.0 12.0 13.0 Spraye 6GPA 7.0 7.8 8.6 9.3 9.9 11.0	7.4 7.9 8.3 9.1 9.5 9.8 11.0 7.5 5.6 6.3 6.9 7.4 7.9 8.4	5.9 6.3 6.6 7.3 7.6 7.9 8.4 d (on 2 8gpa 5.3 5.9 6.4 6.9 7.4 7.9	5.6 5.9 6.2 6.8 7.1 7.4 7.9 0" space 4.2 4.7 5.1 5.6 5.9 6.3	4.5 4.7 5.0 5.5 5.7 5.9 6.3 6ing) @ 12GPA 3.5 3.9 4.3 4.6 5.0 5.3	3.7 3.9 4.2 4.5 4.7 4.9 5.3 15GPA 2.8 3.1 3.4 3.7 4.0	F F F F F ER8 Class F F F F	173 167 162 158 151 148 145 140 0-02 VMD 184 176 170 166 161 158	32% 34% 37% 39% 42% 44% 46% 48% #402 <141 28% 31% 34% 36% 38% 40%	100% 100% 100% 100% 100% 100% 100% 100%	M M M F F F F SR8 Class	230 218 207 191 184 177 167 0-02 VMD 273 257 244 233 224	22% 24% 26% 30% 32% 33% 36% #4028 <141 13% 16% 18% 20% 22%	96% 96% 97% 97% 97% 98% 98% 88-02 <600 94% 95% 96% 96% 97%	C C C C C	301 283 269 256 236 227 220 207 80-02 VMD 326 310 298 287	12% 14% 16% 17% 20% 21% 22% 23% #4023 <141 8% 10% 11%	96% 97% 97% 98% 98% 99% 90-02 <600 94% 94% 94% 94%	C C C C C DR8 Class XC VC VC	380 365 353 332 324 316 302 0-02 VMD 454 435 419 406	6% 6% 7% 8% 8% 9% 10% #4028 <141 3% 4% 4% 5%	91% 92% 94% 94% 95% 95% <600 80% 83% 84% 86%
80 -02	0.14 0.15 0.16 0.17 0.18 0.20 0.21 Flow us gpm 0.14 0.16 0.17 0.19 0.20 0.21	35 40 45 50 60 65 70 80 Boom psi 20 25 30 35 40 45 50	10.0 11.0 12.0 12.0 14.0 15.0 16.0 5GPA 8.4 9.4 10 11 12 13	8.9 9.5 10.0 11.0 12.0 13.0 Spraye 6GPA 7.0 7.8 8.6 9.3 9.9 11.0 11.0	7.4 7.9 8.3 9.1 9.5 9.8 11.0 r Spee 7.5 5.6 6.3 6.9 7.4 7.9 8.4	5.9 6.3 6.6 7.3 7.6 7.9 8.4 d (on 2 8gpa 5.3 5.9 6.4 6.9 7.4 7.9 8.3	5.6 5.9 6.2 6.8 7.1 7.4 7.9 0" spac 10gpa 4.2 4.7 5.1 5.6 5.9 6.3 6.6	4.5 4.7 5.0 5.5 5.7 5.9 6.3 cing) @ 12GPA 3.5 3.9 4.3 4.6 5.0 5.3 5.5	3.7 3.9 4.2 4.5 4.7 4.9 5.3 15GPA 2.8 3.1 3.4 3.7 4.0 4.2 4.4	F F F F F ER8 Class F F F F F	173 167 162 158 151 148 145 140 0-02 VMD 184 176 170 166 161 158 155	32% 34% 37% 39% 42% 44% 46% 48% #402 <141 28% 31% 34% 36% 38% 40% 42%	100% 100% 100% 100% 100% 100% 100% 100%	M M M F F F F SR8 Class	230 218 207 191 184 177 167 0-02 VMD 273 257 244 233 224 216	22% 24% 26% 30% 32% 33% 36% #4028 <141 13% 16% 18% 20% 22% 24%	96% 96% 97% 97% 97% 98% 98% 88-02 <600 94% 95% 96% 96% 97%	C C C C C C C C	301 283 269 256 236 227 220 207 30-02 VMD 326 310 298 287 277	12% 14% 16% 17% 20% 21% 22% 23% #4023 <141 8% 10% 11% 13% 14%	96% 97% 97% 98% 98% 99% 90-02 <600 94% 94% 94% 94% 95%	C C C C C C C C C C C C C C C C C C C	380 365 353 332 324 316 302 0-02 VMD 454 435 419 406 394	6% 6% 7% 8% 8% 9% 10% #4028 <141 3% 4% 4% 5% 5%	91% 92% 94% 95% 95% 30-02 <600 83% 84% 86% 87%
80 -02	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14 0.17 0.19 0.20 0.21 0.22	35 40 45 50 60 65 70 80 Boom psi 20 25 30 35 40 45 50 60 65	10.0 11.0 12.0 12.0 14.0 15.0 16.0 5GPA 8.4 9.4 10 11 12 13 13 15 15	8.9 9.5 10.0 11.0 12.0 13.0 Spraye 6GPA 7.0 7.8 8.6 9.3 9.9 11.0 12.0 13.0	7.4 7.9 8.3 9.1 9.5 9.8 11.0 7.5 5.6 6.3 7.4 7.9 8.4 8.9 9.7	5.9 6.3 6.6 7.3 7.6 7.9 8.4 d (on 2) 8gpa 5.3 5.9 6.4 6.9 7.4 7.9 8.3 9.1	5.6 5.9 6.2 6.8 7.1 7.4 7.9 0" space 10gpa 4.2 4.7 5.1 5.6 5.9 6.3 6.6 7.3 7.6	4.5 4.7 5.0 5.5 5.7 5.9 6.3 2ing) @ 12gpA 3.5 3.9 4.6 5.0 5.3 5.5 6.1 6.3	3.7 3.9 4.2 4.5 4.7 4.9 5.3 15GPA 2.8 3.1 3.4 3.7 4.0 4.2 4.4 4.8 5.0	F F F F F F ER8 Class F F F F F F F F	173 167 162 158 151 148 145 140 0-02 VMD 184 176 170 166 161 158 155 150 147	32% 34% 37% 39% 42% 44% 46% 48% **402' <141 28% 31% 34% 36% 36% 36% 40% 42% 45% 46%	100% 100% 100% 100% 100% 100% 100% 70-02 <600 100% 100% 100% 100% 100% 100% 100% 1	M M M F F F F F SR8 Class	230 218 207 191 184 177 167 0-02 VMD 273 257 244 233 224 216 203 198	22% 24% 26% 30% 32% 33% 36% #4028 <141 13% 16% 18% 20% 22% 24% 27% 29%	96% 96% 97% 97% 97% 98% 9888 88-02 <600 94% 95% 96% 96% 97% 98% 98%	C C C C C C M M M	301 283 269 256 236 227 220 207 30-02 VMD 326 310 298 287 277 262 255	12% 14% 16% 17% 20% 21% 22% 23% #4025 <141 8% 10% 11% 13% 14% 16%	96% 97% 97% 98% 99% 99% 90-02 <600 94% 94% 94% 95% 95%	C C C C C C C C C C C C C C C C C C C	380 365 353 332 324 316 302 0-02 VMD 454 435 419 406 394 375 366	6% 6% 7% 8% 9% 10% *44028 <141 3% 4% 4% 5% 5% 6%	91% 92% 94% 94% 95% 95% <600 80% 83% 84% 86% 87% 88% 89%
80 -02	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14 0.16 0.17 0.19 0.20 0.21 0.22 0.22	35 40 45 50 60 65 70 80 Boom psi 20 25 30 35 40 45 50 60 65 70	10.0 11.0 12.0 12.0 14.0 15.0 16.0 5GPA 8.4 9.4 10 11 12 13 13 15 15	8.9 9.5 10.0 11.0 12.0 13.0 Spraye 6GPA 7.0 7.8 8.6 9.3 9.9 11.0 12.0 13.0	7.4 7.9 8.3 9.1 9.5 11.0 7.5 5.6 6.3 6.9 7.4 7.9 8.4 9.7 10.0	5.9 6.3 6.6 7.3 7.6 8.4 d (on 2 86PA 5.3 5.9 6.4 6.9 7.4 7.9 8.3 9.1 9.5 9.8	5.6 5.9 6.2 6.8 7.1 7.4 7.9 0" space 10GPA 4.2 4.7 5.1 5.6 5.9 6.3 6.6 7.3 7.6 7.9	4.5 4.7 5.0 5.5 5.7 5.9 6.3 20 12GPA 3.5 3.9 4.6 5.0 5.3 5.5 6.1 6.3 6.5	3.7 3.9 4.2 4.5 4.7 4.9 5.3 2.8 3.1 3.4 3.7 4.0 4.2 4.4 4.8 5.0 5.2	F F F F F ER8 Class F F F F F F F F F F F F F F F F F F	173 167 162 158 151 148 145 140 0-02 VMD 184 176 170 166 161 158 155 150 147	32% 34% 37% 39% 42% 44% 46% #402 <141 28% 31% 34% 36% 38% 40% 42% 45% 46% 47%	100% 100% 100% 100% 100% 100% 100% 70-02 <600 100% 100% 100% 100% 100% 100% 100% 1	M M M F F F F F SR8 Class	230 218 207 191 184 177 167 0-02 VMD 273 257 244 233 224 216 203 198 193	22% 24% 26% 30% 32% 33% 36% #4028 <141 13% 16% 18% 20% 22% 24% 27% 29% 30%	96% 96% 97% 97% 97% 98% 98% 38-02 <600 94% 95% 96% 96% 97% 98% 98% 98%	C C C C C C C M M M M M M M M M M M M M	301 283 269 256 236 227 220 207 30-02 VMD 326 310 298 287 277 262 255 249	12% 14% 16% 17% 20% 21% 22% <141 8% 10% 11% 13% 14% 16% 17%	96% 97% 98% 98% 99% 90-02 <600 94% 94% 94% 95% 95% 95%	C C C C C C C C C C C C C C C C C C C	380 365 353 332 324 316 302 0-02 VMD 454 435 419 406 394 375 366 359	6% 6% 7% 8% 9% 10% 44028 <141 3% 4% 5% 5% 6% 6% 7%	91% 92% 94% 94% 95% 95% 80-02 <600 80% 83% 84% 86% 87% 88% 89% 90%
80 -02	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14 0.16 0.17 0.19 0.22 0.21	35 40 45 50 60 65 70 80 80 80 80 95i 20 25 30 35 40 45 50 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	10.0 11.0 12.0 12.0 14.0 15.0 16.0 5GPA 8.4 9.4 10 11 12 13 13 15 15 15	8.9 9.5 10.0 11.0 11.0 13.0 Spraye 6GPA 7.0 7.8 8.6 9.3 9.9 11.0 12.0 13.0 14.0	7.4 7.9 8.3 9.1 9.5 9.8 11.0 7.5 5.6 6.3 6.9 7.4 7.9 8.4 8.9 9.7 10.0 11.0	5.9 6.3 6.6 7.3 7.6 7.9 8.4 d (on 2 86PA 5.3 5.9 6.4 6.9 7.4 7.9 8.3 9.1 9.5 9.8	5.6 5.9 6.2 6.8 7.1 7.4 7.9 0" spac 10gpa 4.2 4.7 5.1 5.6 5.9 6.3 6.6 7.3 7.6 7.9 8.4	4.5 4.7 5.0 5.5 5.7 5.9 6.3 5.1 3.5 3.9 4.3 4.6 5.0 5.3 5.5 6.1 6.3 6.5 7.0	3.7 3.9 4.2 4.5 4.7 4.9 5.3 15GPA 2.8 3.1 3.4 3.7 4.0 4.2 4.4 4.8 5.0	F F F F F F ER8 Class F F F F F F F F F F F F F F F F F F	173 167 162 158 151 148 145 140 0-02 VMD 184 176 166 161 158 155 150 147 145 142	32% 34% 37% 39% 42% 46% #402 <141 28% 31% 36% 38% 40% 42% 45% 46% 47% 49%	100% 100% 100% 100% 100% 100% 100% 100%	M M M F F F F SR8 Class	230 218 207 191 184 177 167 0-02 VMD 273 257 244 216 203 198 193 184	22% 24% 30% 32% 33% 	96% 96% 97% 97% 97% 98% 98% 88-02 <600 94% 95% 96% 97% 98% 98% 98% 98%	C C C C C C C M M M M M M M M M M M M M	301 283 269 236 227 207 30-02 WMD 326 310 298 287 277 262 255 249	12% 14% 16% 17% 20% 21% 22% <141 8% 10% 11% 13% 14% 16% 17% 17%	96% 97% 98% 98% 99% 99% 30-02 <600 94% 94% 94% 94% 95% 95% 95% 95%	C C C C C C C C C C C C C C C C C C C	380 365 353 332 324 316 302 0-02 VMD 454 445 449 4406 394 375 366 359 346	6% 6% 7% 8% 8% 9% 10% #4028 <141 3% 4% 4% 5% 6% 6% 7%	91% 92% 94% 94% 95% 95% 8000 80% 81% 81% 82% 83% 84% 86% 88% 89% 90% 91%
80 -02	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14 0.16 0.17 0.19 0.20 0.21 0.22 0.24 0.25 0.26	35 40 45 50 60 65 70 80 Boom psi 20 25 30 35 40 45 50 60 65 70	10.0 11.0 12.0 12.0 14.0 15.0 16.0 5GPA 8.4 9.4 10 11 12 13 13 15 15 15	8.9 9.5 10.0 11.0 11.0 13.0 Spraye 6GPA 7.0 7.8 8.6 9.3 9.9 11.0 12.0 13.0 14.0	7.4 7.9 8.3 9.1 9.5 9.8 11.0 7.5 5.6 6.3 6.9 7.4 7.9 8.4 8.9 9.7 10.0 11.0	5.9 6.3 6.6 7.3 7.6 8.4 d (on 2 86PA 5.3 5.9 6.4 6.9 7.4 7.9 8.3 9.1 9.5 9.8	5.6 5.9 6.2 6.8 7.1 7.4 7.9 0" spac 10gpa 4.2 4.7 5.1 5.6 5.9 6.3 6.6 7.3 7.6 7.9 8.4	4.5 4.7 5.0 5.5 5.7 5.9 6.3 3.5 3.9 4.3 4.6 5.0 5.3 5.5 6.1 6.3 6.5 7.0	3.7 3.9 4.2 4.5 4.7 4.9 5.3 2.8 3.1 3.4 3.7 4.0 4.2 4.4 4.8 5.0 5.2	F F F F F F ER8 Class F F F F F F F F F F F F F F F F F F	173 167 162 158 151 148 145 140 0-0-02 VMD 184 176 161 158 155 150 147 145 147 145 155 150	32% 34% 37% 39% 42% 44% 46% 48% #402 <141 28% 31% 36% 40% 42% 45% 46% 49% #402	100% 100% 100% 100% 100% 100% 100% 70-02 <600 100% 100% 100% 100% 100% 100% 100% 1	M M M F F F F F SR8 Class C M M M M M M F F F F F F F F F F F F F	230 218 207 191 184 177 167 0-02 VMD 273 257 244 233 224 216 203 198 193	22% 24% 26% 30% 32% 33% 36% #4028 <141 13% 16% 18% 20% 22% 24% 27% 29% 30% 32% #4028	96% 96% 97% 97% 98% 98% 98% 88-02 <600 94% 96% 96% 97% 98% 98% 98% 98% 98% 8-025	C C C C C C C M M M M M M M M M M M M M	301 283 269 256 236 227 220 207 80-02 VMD 326 310 298 287 277 262 255 249 239	12% 14% 16% 17% 20% 21% 22% <141 8% 10% 11% 13% 14% 16% 17% 17%	96% 97% 98% 98% 99% 90-02 <600 94% 94% 94% 95% 95% 95% 95%	C C C C C C C C C C C C C C C C C C C	380 365 353 332 324 316 302 0-02 VMD 454 445 449 4406 394 375 366 359 346	6% 6% 7% 8% 9% 10% 44028 <141 3% 4% 5% 5% 6% 6% 7%	91% 92% 94% 94% 95% 95% 80-02 <600 883% 84% 86% 87% 88% 90% 91% 0-025
80 -02	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14 0.16 0.17 0.19 0.20 0.21 0.22 0.24 0.25 0.25 0.28 Flow us gpm 0.18	35 40 45 50 60 65 70 80 Boom psi 20 25 30 35 40 45 50 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	10.0 11.0 12.0 12.0 14.0 15.0 16.0 15.0 16.0 10 11 12 13 13 15 15 16 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	8.9 9.5 10.0 11.0 12.0 13.0 13.0 50.0 13.0 13.0 12.0 13.0 12.0 13.0 14.0 14.0 14.0 14.0 14.0 14.0 14.0 13.0 14.0 14.0 14.0 14.0 15.0 16.0 17	7.4 7.9 8.3 9.1 9.5 9.8 11.0 7.5 5.6 6.3 6.9 7.4 7.9 8.4 8.9 9.7 10.0 11.0 11.0 7.5 7.5 7.5	5.9 6.3 6.6 7.3 7.6 7.9 8.4 d on 2 86PA 5.3 5.9 6.4 6.9 7.4 7.9 9.5 9.8 11.0 0 (on 2 8.8 9.1 9.5 9.8 11.0 6.6	5.6 5.9 6.2 6.8 7.1 7.4 7.9 0" spar 4.2 4.7 5.1 5.6 6.9 6.6 7.3 7.6 7.9 8.4 0" spar 10gpa 4.7 5.1 5.6 6.8 6.6 6.7 7.3 7.6 7.3 7.6 7.3 7.6 7.3 7.6 7.6 7.6 7.6 7.6 7.6 7.6 7.6 7.6 7.6	4.5 4.7 5.0 5.5 5.7 5.9 6.3 ing) @ 12ePA 4.3 4.6 5.0 5.3 5.5 6.1 6.3 6.5 7.0 9 12ePA 4.4	3.7 3.9 4.2 4.5 4.7 4.9 5.3 15gpa 2.8 3.1 3.4 4.0 4.2 4.4 4.8 5.0 5.2 5.6	F F F F F F ER8 Class F F F F F F F F F F F F F F F F F F	173 167 162 158 151 148 145 140 0-02 VMD 184 176 166 161 158 155 150 147 142 142 142 142 143 144 145 150 150 151 151 151 151 151 151 151 15	32% 34% 37% 39% 44% 46% 48% #402 <141 31% 36% 38% 40% 45% 46% 47% 49% 49% 4141 17%	100% 100% 100% 100% 100% 100% 100% 100%	M M M F F F F F F F F F F F F F F F F F	230 218 207 191 184 177 167 0-02 VMD 273 257 244 233 224 216 203 198 198 193 194 VMD	22% 24% 26% 30% 33% 36% #4028 <141 13% 16% 18% 22% 22% 22% 29% 30% 32% 44028 <141	96% 96% 97% 97% 98% 98% 88-02 <600 94% 95% 96% 96% 98% 98% 98% 98% 88-02 <600	C C C C C C C M M M M M M M M M M M M M	301 283 269 256 236 227 220 207 WMD 326 310 298 287 277 262 255 249 239	12% 14% 16% 20% 21% 22% 23% #402; <141 8% 10% 11% 13% 16% 17% 17% 19% #402;	96% 97% 98% 98% 99% 90-02 <600 94% 94% 94% 95% 95% 95% 95%	C C C C C C C C C C C C C C C C C C C	380 365 353 332 324 316 302 0-02 VMD 454 435 419 406 394 375 366 359 346 0-025	6% 6% 7% 8% 8% 9% 110% #4028 <141 3% 4% 4% 5% 6% 7% 7% #4028	91% 92% 94% 94% 95% 95% 80-02 <600 883% 84% 86% 87% 88% 90% 91% 0-025
80 -02 Nozzles	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14 0.16 0.17 0.20 0.21 0.22 0.21 0.25 0.28 Flow us gpm 0.18	35 40 45 50 60 65 70 80 80 mpsi 20 25 30 45 50 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	10.0 11.0 12.0 12.0 14.0 15.0 16.0 56PA 8.4 9.4 10 11 12 13 15 16 17	8.9 9.5 10.0 11.0 12.0 13.0 Spraye 66PA 7.0 13.0 9.9 11.0 13.0 13.0 14.0 Spraye 66PA 8.6 9.3 9.9 11.0 13.0 14.0 15.0 16.	7.4 7.9 8.3 9.1 9.5 9.8 11.0 r Spee 7.5 5.6 6.3 6.9 7.4 7.9 10.0 11.0 r Spee 7.7 7.7 7.7 7.7 7.7 7.7	5.9 6.3 6.6 7.3 7.6 7.9 8.4 d (on 2) 5.3 5.9 6.4 7.9 8.3 9.1 11.0 d (on 2) 8.6 6.6 7.3	5.6 5.9 6.2 6.8 7.1 7.4 7.9 0" spat 4.2 5.1 5.6 6.6 6.7 9 8.4 7.9 8.4 7.9 9 8.3 7.6 7.9 8.4 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5	4.5 4.7 5.0 5.5 5.7 5.9 6.3 3.5 4.6 5.0 5.3 6.5 7.0 6.3 4.4 4.4 4.9	3.7 3.9 4.2 4.5 4.7 4.9 5.3 156PA 2.8 3.1 3.4 4.2 4.4 9 5.2 5.6 5.2 5.6	F F F F F F F F F F F F F F F F F F F	173 167 162 158 151 148 145 140 0-02 VMD 184 176 161 158 155 150 147 145 142 0-025 VMD 232 219	32% 34% 37% 42% 44% 46% 48% 31% 34% 38% 40% 42% 45% 49% #4022 <141 17% 21%	100% 100% 100% 100% 100% 100% 100% 100%	M M M F F F F F F F F F F F F F F F F F	230 218 207 191 184 177 167 0-02 VMD 273 257 244 233 224 216 203 198 193 184 0-025 VMD	22% 24% 26% 30% 32% 33% 44028 <141 13% 16% 12% 22% 22% 24% 30% 32% 44028 <141 9%	96% 96% 97% 97% 97% 98% 98% 88-02 <600 94% 95% 96% 97% 98% 98% 98% 98% 98% 98% 98% 98	C C C C C C C C M M M M M M M M M M M M	301 283 269 256 227 220 207 30-02 VMD 326 310 298 287 277 262 255 249 239 0-025 VMD	12% 14% 16% 16% 20% 21% 22% <141 8% 10% 11% 13% 14% 17% 17% 19% 44029 <141	96% 97% 98% 98% 99% 99% 99% -600 94% 94% 95% 95% 95% -600	C C C C C C C C C C C C C C C C C C C	380 365 353 332 324 316 302 VMD 454 445 406 394 375 366 359 346 VMD	6% 6% 7% 8% 8% 9% 10% #4028 4% 4% 5% 6% 6% 7% 774 4028 <141	91% 92% 94% 95% 95% 95% 80-02 80% 83% 84% 88% 99% 90% 91% 91%
80 -02 Nozzles	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14 0.16 0.17 0.19 0.20 0.21 0.22 0.24 0.25 0.26 0.28 Flow us gpm 0.20 0.21	35 40 45 50 60 65 70 80 80 95 20 25 30 35 40 45 50 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	10.0 11.0 12.0 14.0 14.0 15.0 15.0 16.0 11.1 12.1 13.1 15.1 16.1 17.1 17.1 18.4 19.4 10.1 11.1 12.1 13.1 15.1 16.1 17.1 17.1 18.1 17.1 17.1 17.1 18.1 18	8.9 9.5 10.00 11.0 11.0 12.0 13.0 7.0 7.8 8.6 9.3 11.0 12.0 11.0 12.0 13.0 14.0 Spraye 66PA 8.8 68PA 8.8 68PA 9.9 9.9 11.0 13.0 13.0 14.0 15.0 16.0 1	7.4 7.9 8.3 9.1 9.5 9.8 11.0 7.5 5.6 6.3 6.9 7.4 8.9 9.7 10.0 11.0 11.0 11.0 10.0 11.0 10.0 11.0 10.0	5.9 6.3 6.6 7.3 7.6 7.9 8.4 5.3 5.9 6.4 6.9 9.1 9.5 11.0 d (on 2 86PA 11.0 d (on 2 86PA 10.0 d (on 2 86PAA 10.0 d (on 2 86	5.6 5.9 6.2 6.8 7.1 7.4 7.9 0" space 4.7 5.1 5.6 6.6 7.3 7.6 6.6 7.3 7.9 8.4 0" space 10gpa 5.9 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9	4.5 4.7 5.0 5.5 5.7 5.9 6.3 2.5 3.9 4.3 4.6 6.5 5.0 6.1 6.5 7.0 2.6 2.6 4.4 4.4 9.5.4	3.7 3.9 4.2 4.5 4.7 4.9 5.3 156PA 3.1 3.4 4.2 4.4 5.0 5.2 5.6	F F F F F F F F F F F F F F F F F F F	173 167 162 158 151 148 145 140 0-0-02 184 176 170 166 161 158 155 150 147 145 142 0-025 VMD 232 232 219 209	32% 34% 37% 39% 44% 46% 48% 31% 31% 36% 40% 42% 45% 46% 49% ##4027 411 17% 221% 23%	100% 100% 100% 100% 100% 100% 100% 100%	M M M F F F F SR8 Class W M M M F F F F F SR8 SClass C C C C C C C C C C C C C C C C C C	230 218 207 191 184 177 167 0-02 VMD 273 257 244 233 224 216 203 198 193 184 0-025 VMD	22% 24% 26% 30% 32% 33% 36% <141 13% 16% 22% 22% 22% 24% 29% 30% 32% **4028 <141 9% 11%	96% 96% 97% 97% 97% 98% 98% 88-02 <600 96% 97% 98% 98% 98% 98% 98% 98% 98% 98	C C C C C C C C C C C C C C C C C C C	301 283 269 256 227 220 207 30-02 WMD 326 326 310 298 287 277 262 255 249 239 0-025 VMD	12% 14% 16% 16% 20% 21% 22% 244 10% 11% 13% 11% 16% 17% 17% 17% 19% 44025 2141	96% 97% 97% 98% 98% 99% 99% <600 94% 94% 94% 95% 95% 95% 95% 60-025 <600	C C C C C C C C C C C C C C C C C C C	380 365 353 332 316 302 0-02 VMD 454 435 419 406 394 406 394 406 359 346 0-025 VMD	6% 6% 7% 8% 8% 9% 10% 44028 <141 3% 6% 5% 6% 7% 44028 <141 344 44028 <141 334 44028 4404 34028 4404 34028 4404 34028 4404 4404 4404 4404 4404 4404 4404	91% 92% 94% 94% 95% 95% 80-02 <600 80% 83% 84% 86% 89% 90% 91% <600 77%
80 -02 Nozzles	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14 0.16 0.17 0.20 0.21 0.22 0.21 0.25 0.28 Flow us gpm 0.18	35 40 45 50 60 65 70 80 80 mpsi 20 25 30 45 50 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	10.0 11.0 12.0 12.0 14.0 15.0 16.0 56PA 8.4 9.4 10 11 12 13 15 16 17	8.9 9.5 10.0 11.0 12.0 13.0 Spraye 66PA 7.0 13.0 9.9 11.0 13.0 13.0 14.0 Spraye 66PA 8.6 9.3 9.9 11.0 13.0 14.0 15.0 16.	7.4 7.9 8.3 9.1 9.5 9.8 11.0 r Spee 7.5 5.6 6.3 6.9 7.4 7.9 10.0 11.0 r Spee 7.7 7.7 7.7 7.7 7.7 7.7	5.9 6.3 6.6 7.3 7.6 7.9 8.4 d (on 2) 5.3 5.9 6.4 7.9 8.3 9.1 11.0 d (on 2) 8.6 6.6 7.3	5.6 5.9 6.2 6.8 7.1 7.4 7.9 0" spat 4.2 5.1 5.6 6.6 6.7 9 8.4 7.9 8.4 7.9 9 8.3 7.6 7.9 8.4 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 7.9 9 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5	4.5 4.7 5.0 5.5 5.7 5.9 6.3 3.5 4.6 5.0 5.3 6.5 7.0 6.3 4.4 4.4 4.9	3.7 3.9 4.2 4.5 4.7 4.9 5.3 156PA 2.8 3.1 3.4 4.2 4.4 9 5.2 5.6 5.2 5.6	F F F F F F F F F F F F F F F F F F F	173 167 162 158 151 148 145 140 0-02 VMD 184 176 161 158 155 150 147 145 142 0-025 VMD 232 219	32% 34% 37% 42% 44% 46% 48% #402 <141 28% 31% 36% 38% 40% 45% 46% 47% 49% 211 17% 211 211 211 211 211 212 213 214 215 216 216 217 217 218 218 218 218 218 218 218 218	100% 100% 100% 100% 100% 100% 100% 100%	M M M F F F F SR8 M M M M M M F F F F SR88 Class	230 218 207 191 184 177 167 0-02 VMD 273 257 244 233 224 216 203 198 193 184 0-025 VMD	22% 24% 26% 30% 32% 33% 44028 <141 13% 16% 12% 22% 22% 24% 30% 32% 44028 <141 9%	96% 96% 97% 97% 97% 98% 98% 88-02 <600 94% 95% 96% 97% 98% 98% 98% 98% 98% 98% 98% 98	C C C C C C C C C C C C C C C C C C C	301 283 269 256 227 220 207 30-02 VMD 326 310 298 287 277 262 255 249 239 0-025 VMD	12% 14% 16% 16% 20% 21% 22% <141 8% 10% 11% 13% 14% 17% 17% 19% 44029 <141	96% 97% 98% 98% 99% 99% 99% -600 94% 94% 95% 95% 95% -600	C C C C C C C C C C C C C C C C C C C	380 365 353 332 324 316 302 VMD 454 445 406 394 375 366 359 346 VMD	6% 6% 7% 8% 8% 9% 10% #4028 4% 4% 5% 6% 6% 7% 774 4028 <141	91% 92% 94% 95% 95% 95% 80-02 80% 83% 84% 88% 99% 90% 91% 91%
80 -02 Nozzles	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14 0.16 0.17 0.19 0.20 0.21 0.22 0.24 0.25 0.26 0.26 0.20 0.22 0.22 0.24 0.25 0.26 0.26 0.27	35 40 45 50 60 65 70 80 80 80 22 25 30 35 40 65 67 70 80 80 80 65 50 60 65 30 35 40 45 45 45 45 45 45 45 45 45 45 45 45 45	10.0 11.0 12.0 12.0 14.0 15.0 16.0 15.0 16.0 15.0 17.1 12.1 13.1 15.1 15.1 16.1 17.1 17.1 18.1 19.1 19.1 19.1 19.1 19.1 19.1 19	8.9 9.5 10.0 11.0 11.0 11.0 12.0 13.0 Spraye 6GPA 7.0 7.8 8.6 9.3 9.9 11.0 12.0 13.0 14.0 Spraye 6GPA 11.0 12.0 13.0 14.0 15.0 16.0 17.	7.4 7.9 8.3 9.1 9.5 9.8 11.0 15.5 6.3 6.9 7.4 7.9 9.7 10.0 11.0 10.0 11.0 7.5 8.6 8.6 9.7 7.5 9.8 8.8 9.7 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10	5.9 6.3 6.6 7.9 7.6 7.9 8.4 4 d on 2 8gpa 5.3 5.9 9.1 9.5 9.1 9.5 0 d on 2 8gpa 6.4 6.9 7.4 9.8 3 9.1 9.8 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8	5.6 5.9 6.2 6.8 7.1 7.4 7.9 9" spat 4.2 4.2 4.2 5.6 5.9 8.4 0" spat 6.9 8.4 0" spat 6.9 6.4 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9	4.5 4.7 5.0 5.5 5.7 5.9 3.5 3.5 3.5 4.6 5.0 6.1 6.3 5.3 5.5 6.1 6.3 5.5 6.1 6.3 5.5 6.4 4.9 5.4 4.9 5.4 6.2 6.2 6.2 6.2	3.7 3.9 4.2 4.5 4.7 4.9 5.3 3.1 3.4 4.0 4.2 4.4 4.8 5.0 5.2 5.6 4.3 3.5 3.9 4.3 4.6 5.0 5.3	F F F F F F F F F F F F F F F F F F F	173 167 162 158 151 148 145 140 00-02 WMD 184 176 170 166 161 145 145 145 145 145 145 145 145 145 14	32% 34% 37% 39% 42% 44% 46% #402 <141 28% 34% 36% 34% 42% 44% 44% 42% 42% 42% 42% 4	100% 100% 100% 100% 100% 100% 100% 100%	M M M F F F F SR8 Class C C M M M M M M M M M M M M M M M M M	230 218 207 191 184 177 167 0-02 VMD 273 257 244 216 203 184 193 184 193 184 190 100 296 281 281 268 257	22% 24% 26% 30% 32% 33% subar-align: left; 13% 16% 18% 22% 22% 22% 22% 24% 29% 30% 30% 31% 30% 31% 30% 31% 31% 31% 31% 31% 31% 31% 31	96% 96% 97% 97% 97% 98% 88-02 <600 94% 95% 96% 97% 98% 8-025 <600 91% 93% 94% 94% 95%	C C C C C C C C C C C C C C C C C C C	301 283 269 256 236 227 220 207 30-02 WMD 326 310 298 287 277 262 255 VMD 425 401 425 401 382 367	12% 14% 14% 17% 20% 21% 21% 23% #402' <141 15% 17% 19% 4402' <141 55% 6% 7%	96% 97% 97% 98% 98% 99% 99% 99% 94% 94% 94% 95% 95% 95% 6-025 <600	C C C C C C C C C C C C C C C C C C C	380 365 353 324 316 302 0-02 VMD 454 435 449 406 359 346 359 346 0-025 VMD	6% 6% 7% 8% 8% 9% 	91% 92% 94% 94% 95% 95% 80% 80% 84% 86% 87% 88% 89% 90% 90% 91% 600 77% 79% 81% 82%
80 -02 Nozzles	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14 0.16 0.17 0.19 0.20 0.21 0.22 0.22 0.25 0.26 0.28	35 40 45 50 60 65 70 80 80 80 80 20 25 30 45 50 66 65 70 80 80 80 80 80 45 50 60 45 50 60 65 80 80 80 80 80 80 80 80 80 80 80 80 80	10.0 11.0 12.0 14.0 14.0 15.0 16.0 15.0 16.0 11.1 12.1 13.1 15.1 16.1 17.1 18.4 19.4 10.1 11.1 12.1 13.1 14.0 16.0 17.1 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18	8.9 9.5 10.0 11.0 11.0 12.0 13.0 Spraye 6GPA 7.0 7.8 8.6 9.3 9.9 11.0 12.0 13.0 12.0 13.0 12.0 13.0 12.0 12.0 13.0 12.0 12.0 13.0 12.0 13.0 13.0 14.0 15.0 16.0	7.4 7.9 9.8 9.1 11.0 7.5 5.6 6.3 6.9 7.4 8.9 9.7 10.0 11.0 11.0 7.5 7.0 7.8 8.6 9.3 9.9 7.9	5.9 6.3 7.6 6.6 6.6 7.9 7.9 8.4 d (on 2 8epa 6.4 6.9 9.5 9.8 11.0 9.5 9.8 11.0 8epa 6.6 7.3 8.4 9.5 9.8 9.8 11.0 8epa 6.6 8.7 9.8 9.8 9.8 9.8 9.8 9.8 9.8 9.8 9.8 9.8	5.6 5.9 6.2 6.8 7.1 7.4 4.2 4.7 5.1 5.6 5.9 6.3 7.6 7.9 0" spate 10gpa 7.4 0.0" spate 10gpa 6.4 6.9 7.4 9.9 9.0" spate 1.0" spate 1.	4.5 4.7 5.0 5.5 5.7 5.9 3.9 4.6 5.0 5.3 6.5 6.1 6.3 6.5 6.1 26PA 4.4 4.9 4.9 5.4 5.8 6.2 6.6 6.9	3.7 3.9 4.2 4.5 4.7 4.9 5.3 3.1 4.0 4.2 4.4 4.8 5.0 5.6 5.6 4.3 4.6 5.0 5.3 5.5	F F F F F F F F F F F F F F F F F F F	173 167 162 158 151 148 140 0-02 158 176 170 166 161 158 155 142 219 202 200 200 194 188 182	32% 34% 39% 42% 44% 48% #402 **	100% 100% 100% 100% 100% 100% 100% 100%	M M M F F F F F F F F F F F F F F F F F	230 218 207 191 184 177 167 0-02 VMD 273 257 244 233 224 203 198 193 194 195 VMD 268 269 261 262 261 262 261 263 264 264 264 265 267 267 267 267 267 267 267 267 267 267	22% 24% 26% 30% 32% <141 13% 16% 22% 22% 24% 22% 30% 32% <141 11% 13% 11% 11% 11% 11% 11%	96% 96% 97% 97% 97% 98% 98% 98% 96% 96% 97% 98% 98% 98% 800 98% 98% 98% 98% 98% 98% 98% 98%	C C C C C C C C C C C C C C C C C C C	301 283 269 256 227 207 30-02 VMD 326 326 327 277 277 298 287 277 272 249 239 425 401 382 401 382 401 383 367 367 373 383	12% 14% 14% 17% 20% 21% 23% #4022 <141 8% 10% 11% 13% 14% 5% 6% 6% 6% 6% 8%	96% 97% 97% 98% 98% 99% 99% <	C C C C C C C C C C C C C C C C C C C	380 365 353 324 316 302 454 435 406 394 437 375 366 394 375 369 346 0-025 VMD	6% 6% 8% 8% 9% 10% 44024 4% 5% 6% 6% 77% #4028 <141 3% 44028 4404 44028 5404 5404 5404 5404 5404 5404 5404 540	91% 92% 94% 94% 95% 80-02 <600 80% 86% 87% 88% 90% <600 77% 79% 88% 88% 88% 88% 88% 88% 88% 8
80 -02 Nozzles	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14 0.16 0.17 0.19 0.20 0.21 0.22 0.24 0.25 0.26 0.28 Flow us gpm 0.18 0.19 0.20 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.25 0.26 0.28 Flow us gpm 0.18 0.20 0.20 0.20 0.20 0.20 0.20 0.21 0.25 0.26 0.28 Flow us gpm 0.18 0.20	35 40 45 50 60 65 70 80 80 80 80 22 25 30 35 40 45 50 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	10.0 11.0 12.0 14.0 14.0 15.0 16.0 15.0 16.0 19.4 10 11 12 13 13 15 16 17 17 18	8.9 9.5 11.0 11.0 11.0 12.0 13.0 13.0 13.0 14.0 13.0 14.0 13.0 14.0 13.0 14.0 12.0 12.0 12.0 12.0 14.0	7.4 7.9 9.5 9.8 11.0 7.5 5.6 6.3 6.9 7.4 8.9 9.7 10.0 11.0 7.8 8.6 9.3 9.7 10.0 11.0 11.0 11.0 11.0 11.0 11.0 11	5.9 6.3 7.6 6.6 6.6 7.9 7.9 8.4 6.9 7.4 6.9 7.4 8.3 9.1 11.0 0 d (on 2 8.6 8.3 8.3 9.1 11.0 8.6 8.6 8.3 8.4 9.5 9.8 8.3 9.8 11.0 8.6 8.6 8.6 8.6 8.6 9.8 9.8 9.8 9.8 9.8 9.8 9.8 9.8 9.8 9.8	5.6 5.9 6.2 6.8 7.1 7.4 7.9 0" spat 4.2 5.1 5.6 6.6 7.3 6.6 7.9 8.4 7.9 9.3 9.3 9.4 9.5 9.6 9.6 9.6 9.6 9.6 9.6 9.6 9.6 9.6 9.6	4.5 4.7 4.7 5.0 5.5 5.7 5.9 6.3 3.5 5.0 5.3 4.6 6.3 5.5 6.1 1.2 6.3 4.4 4.9 4.9 5.4 6.2 6.2 6.9 7.6	3.7 3.9 4.2 4.5 4.7 4.9 5.3 3.1 4.0 4.2 4.8 5.0 5.2 5.6 5.2 5.6 5.0 5.3 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	F F F F F F F F F F F F F F F F F F F	173 167 162 158 151 148 145 156 150 147 145 142 219 209 200 194 182 174	32% 34% 37% 39% 42% 44% 48% #402 21% 31% 34% 36% 40% 42% 45% 47% 49% 42% 42% 43% 36% 40% 42% 43% 42% 43% 42% 45% 42% 45% 42% 45% 42% 45% 42% 45% 42% 45% 42% 45% 42% 45% 42% 45% 42% 45% 42% 45% 42% 45% 45% 45% 45% 45% 45% 45% 45	100% 100% 100% 100% 100% 100% 100% 100%	M M M F F F F SR88 Class Class C C M M M M M M M M M M M M M M M M M	230 218 207 191 184 177 167 0-02 VMD 273 224 216 203 198 193 194 195 205 VMD 248 257 248 229 268 257 248 258 258 259 268 259 259 259 259 259 259 269 279 279 279 279 279 279 279 279 279 27	22% 24% 26% 30% 32% <141 13% 16% 18% 20% 24% 30% 32% 44028 24% 113% 113% 113% 113% 113% 113% 113% 11	96% 96% 97% 97% 97% 98% 988 988 988 95% 96% 97% 96% 96% 97% 98% 98% 98% 98% 98% 98% 98% 98% 98% 98	C C C C C C C C C C C C C C C C C C C	301 283 269 256 227 220 220 207 326 310 326 310 287 277 262 249 239 249 249 249 249 367 401 382 401 362 363 363 363 363 363 363 363 363 363	12% 14% 16% 16% 16% 20% 21% 23% #4025 <141 8% 10% 13% 14% 16% 17% 17% 17% 5% 6% 6% 6% 6% 9%	96% 97% 98% 98% 99% 99% <600 94% 94% 95% 95% 95% <600 81% 88% 86% 87% 89%	C C C C C C C C C C C C C C C C C C C	380 365 353 324 316 302 VMD 454 435 419 406 394 433 394 436 409 443 430 443 430 430 431 431 431 432 433 434 434 434 435 443 435 443 443 443	6% 6% 8% 8% 9% #4028 <141 3% 4% 5% 6% 44028 <141 3% 44028 <141 3% 6% 6%	91% 92% 94% 94% 95% 95% 95% 80% 83% 84% 86% 87% 88% 89% 90% 91% <
80 -02 Nozzles	0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 Flow us gpm 0.14 0.16 0.17 0.19 0.20 0.21 0.22 0.22 0.25 0.26 0.28	35 40 45 50 60 65 70 80 80 80 80 20 25 30 45 50 66 65 70 80 80 80 80 80 45 50 60 45 50 60 65 80 80 80 80 80 80 80 80 80 80 80 80 80	10.0 11.0 12.0 14.0 14.0 15.0 16.0 15.0 16.0 11.1 12.1 13.1 15.1 16.1 17.1 18.4 19.4 10.1 11.1 12.1 13.1 14.0 16.0 17.1 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18	8.9 9.5 10.0 11.0 11.0 12.0 13.0 Spraye 6GPA 7.0 7.8 8.6 9.3 9.9 11.0 12.0 13.0 12.0 13.0 12.0 13.0 12.0 12.0 13.0 12.0 12.0 13.0 12.0 13.0 13.0 14.0 15.0 16.0	7.4 7.9 9.8 9.1 11.0 7.5 5.6 6.3 6.9 7.4 8.9 9.7 10.0 11.0 11.0 7.5 7.0 7.8 8.6 9.3 9.9 7.9	5.9 6.3 7.6 6.6 6.6 7.9 7.9 8.4 d (on 2 8epa 6.4 6.9 9.5 9.8 11.0 9.5 9.8 11.0 8epa 6.6 7.3 8.4 9.5 9.8 9.8 11.0 8epa 6.6 8.7 9.8 9.8 9.8 9.8 9.8 9.8 9.8 9.8 9.8 9.8	5.6 5.9 6.2 6.8 7.1 7.4 4.2 4.7 5.1 5.6 5.9 6.3 7.6 7.9 0" spate 10gpa 7.4 0.0" spate 10gpa 6.4 6.9 7.4 9.9 9.0" spate 1.0" spate 1.	4.5 4.7 5.0 5.5 5.7 5.9 3.9 4.6 5.0 5.3 6.5 6.1 6.3 6.5 6.1 26PA 4.4 4.9 4.9 5.4 5.8 6.2 6.6 6.9	3.7 3.9 4.2 4.5 4.7 4.9 5.3 3.1 4.0 4.2 4.4 4.8 5.0 5.6 5.6 4.3 4.6 5.0 5.3 5.5	F F F F F F F F F F F F F F F F F F F	173 167 162 158 151 148 140 0-02 158 176 170 166 161 158 155 142 219 202 200 200 194 188 182	32% 34% 39% 42% 444% 46% 48% #4022 <141 31% 36% 38% 40% 42% 42% 42% 42% 31% 36% 38% 36% 38% 36% 38% 38% 38% 38% 38% 38% 38% 38% 38% 38	100% 100% 100% 100% 100% 100% 100% 100%	M M M F F F F SR88 Class Class C C M M M M M M M M M M M M M M M M M	230 218 207 191 184 177 167 0-02 VMD 273 257 244 233 224 203 198 193 194 195 VMD 268 269 261 262 261 262 261 263 264 264 264 265 267 267 267 267 267 267 267 267 267 267	22% 24% 30% 30% 32% 44028 <141 13% 16% 22% 24% 29% 30% 32% <141 9% 11% 13% 15% 15% 15% 18% 20% 22% 22% 24141 22%	96% 96% 97% 97% 97% 98% 98% 98% 96% 96% 97% 98% 98% 98% 800 98% 98% 98% 98% 98% 98% 98% 98%	C C C C C C C C C C C C C C C C C C C	301 283 269 256 227 207 30-02 VMD 326 326 327 277 277 298 287 277 272 249 239 425 401 382 401 382 401 383 367 367 373 383	12% 14% 14% 17% 20% 21% 23% #4022 <141 8% 10% 11% 13% 14% 5% 6% 6% 6% 6% 8%	96% 97% 97% 98% 98% 99% 99% <	C C C C C C C C C C C C C C C C C C C	380 365 353 324 316 302 454 435 406 394 437 375 366 394 375 369 346 0-025 VMD	6% 6% 8% 8% 9% 10% 44024 4% 5% 6% 6% 77% #4028 <141 3% 44028 4404 44028 5404 5404 5404 5404 5404 5404 5404 540	91% 92% 94% 94% 95% 80-02 <600 80% 86% 87% 88% 90% <600 77% 79% 88% 88% 88% 88% 88% 88% 88% 8

NOTE: 'SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. "Shown application information is based on water @ 80°F in a controlled environment and should not be considered actual. Information is provided for comparison to other Combo-Jet® spray tips, for educational purposes only. Repeat testing results can vary.



COMBO-JET 80° Spray Tips - Standard Sprayer Systems

Comprehensive rate & speed charts for any nozzle spacing/speed/rate is available on Tip Wizard. Try it today!

ASABE Spray Classification (ASABE 5572.1 Standard)
Spray quality is categorized based on Dv0.1 and VMD droplet sizes.

Objective testing data (by 3rd party), from spray spectrum recording equipment (without wind tunnel use), has been used to classify spray quality for this chart. Extra data (e.g. VMD, etc.) can vary between testing equipment and method, and is provided as an educational resource only.

Tips sized up to 110-06 verified on Phase Doppler Particle Analyzer (PDPA); tips sized over 110-06 verified on Malvern.

Ultra Coarse (UC)

VMD (Volume Median Diameter) The median droplet (in μ) for a sprayed volume. Half of the volume is made of droplets smaller, with

% <141μ (% Driftable Fines) Percentage of volume which is likely to drift. As wind & boom height increase, observed spray drift will increase substantially.

% <600µ (% of Small Droplets) % of volume which is made up of 'small' droplets, useful for coverage. As % of useful droplets lowers, overall coverage is reduced.

d up to 110-06 verifie	a on i naoo bo	pror i uruoic				10 00 1011110	on maren			- (-															
	Flow	Boom		Spraye	er Spee	d (on 2	0" spac	ing) @)	ER8	80-03	#402	70-03	SR8	30-03	#4028	38-03	MR8	30-03	#4029	90-03	DR8	30-03	#4028	30-03
	us gpm	psi	5 _{GPA}	6 _{GPA}	7.5	8 _{GPA}	10 _{GPA}	12gpa	15 _{GPA}	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	0.21	20	13	11.0	8.4	7.9	6.3	5.3	4.2	М	233	17%	99%												
	0.24	25	14	12.0	9.4	8.8	7.0	5.9	4.7	М	222	20%	99%	С	368	7%	88%								
80	0.26	30	15	13	10.0		7.7	6.4	5.1	F	214	23%	99%	С	344	9%	89%	VC	432	5%	81%	XC	481	3%	72%
-03	0.28	35	17	14	11.0		8.3	6.9	5.6	F	207	25%	99%	С	325	11%	90%	VC	409	6%	83%	XC	462	4%	75%
Nozzles	0.30	40	18	15	12.0		8.9	7.4	5.9	F	201	26%	99%	Č	309	12%	91%	C	390	7%	85%	VC	447	4%	77%
11022.00	0.32	45	19	16	13.0		9.5	7.9	6.3	Ė	196	28%	99%	Č	296	14%	91%	Č	374	7%	86%	VC	433	5%	79%
	0.34	50	20	17	13	12.0	10.0	8.3	6.6	Ė	192	29%	99%	Č	285	15%	92%	Č	360	8%	88%	VC	422	5%	80%
	0.37	60	22	18	15	14.0	11.0	9.1	7.3	Ė	184	32%	99%	M	266	17%	93%	C	337	9%	89%	C	403	6%	83%
	0.38	65	23	19	15	14.0	11.0	9.5	7.6	÷	181	33%	99%	M	258	18%	93%	C	327	10%	90%	C	395	6%	84%
	0.40	70	24	20	16	15.0	12.0	9.8	7.9	÷	179	34%	99%	M	251	18%	93%	C	319	10%	91%	C	387	7%	84%
	0.40	80	25	21	17	16		11.0	8.4	÷	174	35%	99%	M	239	20%	94%	C	304	11%	92%	C	374	7%	86%
			23	Spraye			13.0 0" spac			EDO	0-04	#402			80-04	#4028			304	#4029			374	#4028	
	Flow	Boom	Qona	10gpa		15gpa	υ spac 20gpa	25gpa	30gpa	Class	VMD	<141	<600	Class		<141	<600	Class	VMD	<141		Class	VMD		<600
	us gpm 0.28	psi 20	8gpa 11							M				UldSS	VIVID	<141	<000	UldSS	VIVID	<141	<000	UldSS	VIVID	<141	<000
			_	9	6.7	5.6	4.2	3.4	2.8 3.1	M	251	16%	99%	C	260	E0/	050/						\vdash	$\overline{}$	
00	0.32	25	13		7.5	6.3	4.7	3.8		M	239	19%	99%	C	369	5%	85%	VC	420	E0/	000/	XC	E 40	20/	62%
80	0.35	30	14	10	8	6.9	5.1	4.1	3.4	_	230	21%	99%		349	7%	87%	VC	420	5%	80%	_	543	2%	
-04	0.37	35	15	11	9	7.4	5.6	4.4	3.7	M	222	22%	99%	C	331	9%	88%	VC	401	6%	82%	XC	523	3%	65%
Nozzles	0.40	40	16	12	10	7.9	5.9	4.8	4.0	M	216	24%	99%	C	316	10%	89%	C	385	7%	84%	XC	507	3%	68%
	0.42	45	17	13	10	8	6.3	5.0	4.2	Ę	211	25%	99%	С	303	11%	90%	С	372	8%	85%	XC	493	3%	70%
	0.45	50	18	13	11	9	6.6	5.3	4.4	Ę	206	26%	99%	С	291	12%	91%	С	360	9%	86%	XC	480	4%	72%
	0.49	60	19	15	12	10	7.3	5.8	4.8	느	198	28%	99%	M	270	14%	92%	С	341	10%	88%	XC	460	4%	75%
	0.51	65	20	15	12	10	8	6.1	5.0	느	195	29%	99%	M	261	14%	92%	С	333	11%	88%	VC	451	5%	76%
	0.53	70	21	16	13	10	8	6.3	5.2	뇬	192	29%	99%	M	252	15%	92%	С	326	11%	89%	VC	443	5%	77%
	0.57	80	22	17	13	11	8	6.7	5.6	F	186	31%	99%	M	237	16%	93%	С	313	12%	90%	С	429	5%	79%
	Flow	Boom			er Spee		0" spac				0-05	#402			30-05	#4028			80-05	#4029			30-05	#4028	
	us gpm	psi	10gpa		15gpa		20 _{GPA}	25gpa	30gpa					Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	0.35	20	11	8	7	5.8	5.3	4.2	3.5	C	296	11%	95%										\vdash		
	0.40	25	12	9	8	6.5	5.9	4.7	3.9	С	280	14%	95%	VC	411	5%	81%						$\overline{}$		
80	0.43	30	13	10	9	7	6.4	5.1	4.3	M	267	16%	95%	С	387	7%	83%		504	3%	68%	XC	574	2%	56%
-05	0.47	35	14	11	9	8	6.9	5.6	4.6	M	257	18%	95%	С	367	9%	84%		483	4%	71%	XC	555	2%	59%
Nozzles	0.50	40	15	12	10	8	7.4	5.9	5.0	M	248	20%	95%	С	349	10%	86%	VC	466	4%	73%	XC	538	2%	62%
	0.53	45	16	13	11	9	8	6.3	5.3	M	241	21%	95%	С	334	11%	87%	VC	451	5%	75%	XC	524	3%	65%
	0.56	50	17	13	11	9	8	6.6	5.5	M	235	22%	95%	С	320	12%	87%	VC	438	5%	77%	XC	512	3%	67%
	0.61	60	18	15	12	10	9	7	6.1	M	224	25%	95%	С	296	14%	89%	VC	417	6%	79%	XC	492	3%	70%
	0.64	65	19	15	13	11	10	8	6.3	M	220	26%	95%	С	286	14%	89%	С	408	6%	81%	XC	483	4%	71%
	0.66	70	20	16	13	11	10	8	6.5	F	215	26%	95%	С	276	15%	90%	С	400	6%	81%	VC	475	4%	72%
	0.71	00	04	47	- 4	40		_			000		0=0/	B.4	050	160/	010/	С	205	7%	83%	VC	461	4%	74%
	0.71	80	21	17	14	12	11	8	7	Г.	208	28%	95%	M	258	16%	91%	U	385	1 /0	00 /0	V C	1 701		
			21							ER8		#402				#4028			30-06	#4029			30-06	#4028	
	Flow	Boom	10gpa	Spraye	r Speed	d (on 2)	ER8 Class	0-06 VMD			SR8	258 30-06 VMD	#4028		MR8	30-06		90-06	DR8	30-06		30-06
				Spraye	r Spee	d (on 2	0" spac	ing) @)		0-06	#402 ⁻ <141	70-06 <600	SR8	30-06	#4028	38-06	MR8	30-06	#4029	90-06	DR8	30-06	#4028	30-06
	Flow us gpm	Boom psi	10gpa	Spraye 12.5	r Speed 15gpa	d (on 2 18gpa	0" spac 20gpa	ing) @ 30gpa	35gpa	Class	0-06 VMD	#402 <141 12%	70-06 <600 92%	SR8	30-06	#4028	38-06	MR8	30-06	#4029	90-06	DR8	30-06	#4028	30-06
80	Flow us gpm 0.42 0.47	Boom psi 20 25	10gpa 13 14	Spraye 12.5 10 11	15gpa 8 9	d (on 2 18gpa 7	0" spac 20gpa 6.3 7.0	30 _{GPA} 4.2 4.7	35gpa 3.6 4.0	Class C C	0-06 VMD 322 308	#402 <141 12% 15%	70-06 <600 92% 91%	SR8 Class VC	0-06 VMD 440	#4028 <141 4%	38-06 <600 78%	MR8 Class	80-06 VMD	#4029 <141	90-06 <600	DR8 Class	0-06 VMD	#4028 <141	80-06 <600
80 -06	Flow us gpm 0.42 0.47 0.52	Boom psi 20 25 30	10gpa 13 14 15	Spraye 12.5 10 11 12	15gpa 8 9 10	d (on 2 18gpa 7 8 9	0" spac 20gpa 6.3 7.0 8	30gpa 4.2 4.7 5.1	35 _{GPA} 3.6 4.0 4.4	Class C C C	0-06 VMD 322 308 296	#402 <141 12% 15% 17%	70-06 <600 92% 91% 91%	SR8 Class VC VC	0-06 VMD 440 420	#4028 <141 4% 5%	78% 81%	MR8 Class XC	0-06 VMD 526	#4029 <141 2%	90-06 <600 64%	DR8 Class XC	0-06 VMD 596	#4028 <141 1%	80-06 <600 51%
-06	Flow us gpm 0.42 0.47 0.52 0.56	Boom psi 20 25 30 35	10 _{GPA} 13 14 15 17	Spraye 12.5 10 11 12 13	15gpa 8 9 10	d (on 2 18gpa 7 8 9	0" spac 20gpa 6.3 7.0 8	30gpa 4.2 4.7 5.1 5.6	35gpa 3.6 4.0 4.4 4.8	Class C C C C	0-06 VMD 322 308 296 287	#402° <141 12% 15% 17% 18%	70-06 <600 92% 91% 91% 91%	VC VC VC VC	0-06 VMD 440 420 403	#4028 <141 4% 5% 6%	78% 81% 83%	MR8 Class XC XC	526 508	#4029 <141 2% 3%	90-06 <600 64% 67%	DR8 Class XC XC	596 579	#4028 <141 1% 2%	51% 54%
	Flow us gpm 0.42 0.47 0.52 0.56 0.60	Boom psi 20 25 30 35 40	10 _{GPA} 13 14 15 17 18	Spraye 12.5 10 11 12 13 14	15gpa 8 9 10 11 12	d (on 2 18gpa 7 8 9 9	0" space 20gpa 6.3 7.0 8 8 9	30gpa 4.2 4.7 5.1 5.6 6	35gpa 3.6 4.0 4.4 4.8 5.1	Class C C C C C	0-06 VMD 322 308 296 287 279	#402° <141 12% 15% 17% 18% 20%	70-06 <600 92% 91% 91% 91%	SR8 Class VC VC VC C	0-06 VMD 440 420 403 390	#4028 <141 4% 5% 6% 7%	78% 81% 83% 84%	XC XC XC	526 508 492	#4029 <141 2% 3% 3%	64% 67% 70%	Class XC XC XC	596 579 564	#4028 <141 1% 2% 2%	51% 54% 57%
-06	Flow us gpm 0.42 0.47 0.52 0.56 0.60	Boom psi 20 25 30 35 40	10 _{GPA} 13 14 15 17 18 19	Spraye 12.5 10 11 12 13 14 15	15GPA 8 9 10 11 12 13	d (on 2 18gpa 7 8 9 9	0" spac 20gpa 6.3 7.0 8 8 9	30gpa 4.2 4.7 5.1 5.6 6	35gpa 3.6 4.0 4.4 4.8 5.1 5.4	Class C C C C C	0-06 VMD 322 308 296 287 279 273	#402 <141 12% 15% 17% 18% 20% 21%	70-06 <600 92% 91% 91% 91% 91%	VC VC VC VC C	440 420 403 390 378	#4028 <141 4% 5% 6% 7%	78% 81% 83% 84% 85%	XC XC XC XC	526 508 492 479	#4029 <141 2% 3% 3% 4%	00-06 <600 64% 67% 70% 72%	XC XC XC XC	596 579 564 551	#4028 <141 1% 2% 2% 2%	51% 54% 57% 59%
-06	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64	Boom psi 20 25 30 35 40 45 50	10gpa 13 14 15 17 18 19 20	Spraye 12.5 10 11 12 13 14 15 16	15GPA 8 9 10 11 12 13 13	d (on 2 18gpa 7 8 9 9 10 11	0" space 20gpa 6.3 7.0 8 8 9 10 10	30gpa 4.2 4.7 5.1 5.6 6 7	35gpa 3.6 4.0 4.4 4.8 5.1 5.4 6	Class C C C C C C	0-06 VMD 322 308 296 287 279 273 267	#402 <141 12% 15% 17% 18% 20% 21% 22%	70-06 <600 92% 91% 91% 91% 91% 91%	VC VC VC C C C	440 420 403 390 378 368	#4028 <141 4% 5% 6% 7% 7% 8%	38-06 <600 78% 81% 83% 84% 85% 86%	XC XC XC XC YC	526 508 492 479 468	#4029 <141 2% 3% 3% 4% 4%	64% 67% 70% 72% 73%	XC XC XC XC XC	596 579 564 551 540	#4028 <141 1% 2% 2% 2% 2%	51% 54% 57% 59% 61%
-06	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64 0.67	Boom psi 20 25 30 35 40 45 50 60	10gpa 13 14 15 17 18 19 20 22	Spraye 12.5 10 11 12 13 14 15 16 17	15gpa 8 9 10 11 12 13 13	d (on 2 18gpa 7 8 9 9 10 11 11	0" space 20gpa 6.3 7.0 8 8 9 10 11	30gpa 4.2 4.7 5.1 5.6 6 7	35GPA 3.6 4.0 4.4 4.8 5.1 5.4 6	Class C C C C C C M	0-06 VMD 322 308 296 287 279 273 267 257	#402' <141 12% 15% 17% 18% 20% 21% 22% 24%	70-06 <600 92% 91% 91% 91% 91% 91% 90%	VC VC VC C C C	440 420 403 390 378 368 351	#4028 <141 4% 5% 6% 7% 7% 8% 9%	38-06 <600 78% 81% 83% 84% 85% 86% 88%	XC XC XC XC XC VC	526 508 492 479 468 448	#4029 <141 2% 3% 3% 4% 4% 5%	64% 67% 70% 72% 73% 76%	XC XC XC XC XC XC	596 579 564 551 540 521	#4028 <141 1% 2% 2% 2% 2% 2% 3%	51% 54% 57% 59% 61% 64%
-06	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64 0.67 0.73	Boom psi 20 25 30 35 40 45 50 60	10gpa 13 14 15 17 18 19 20 22 23	Spraye 12.5 10 11 12 13 14 15 16 17	15gpa 8 9 10 11 12 13 13 15	d (on 2 18gpa 7 8 9 9 10 11 11 12 13	0" spac 20gpa 6.3 7.0 8 8 9 10 10 11	30gpa 4.2 4.7 5.1 5.6 6 6 7 7	35GPA 3.6 4.0 4.4 4.8 5.1 5.4 6 6	Class C C C C C C M M	0-06 VMD 322 308 296 287 279 273 267 257 253	#402 <141 12% 15% 17% 18% 20% 21% 22% 24% 25%	70-06 <600 92% 91% 91% 91% 91% 91% 90% 90%	VC VC VC C C C C	440 420 403 390 378 368 351 344	#4028 <141 4% 5% 6% 7% 7% 8% 9%	38-06 <600 78% 81% 83% 84% 85% 86% 88%	MR8 Class XC XC XC XC VC VC VC	526 508 492 479 468 448 440	#4029 <141 2% 3% 3% 4% 4% 5% 5%	64% 67% 70% 72% 73% 76% 77%	XC XC XC XC XC XC XC	596 579 564 551 540 521 513	1% 2% 2% 2% 2% 2% 3% 3%	51% 54% 57% 59% 61% 64%
-06	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64 0.67 0.73 0.76	Boom psi 20 25 30 35 40 45 50 60 65 70	10gpa 13 14 15 17 18 19 20 22 23 24	Spraye 12.5 10 11 12 13 14 15 16 17 18	15GPA 8 9 10 11 12 13 13 15 15	d (on 2 18gpa 7 8 9 9 10 11 11 12 13	0" spac 20gpa 6.3 7.0 8 8 9 10 10 11 11 12	30gpa 4.2 4.7 5.1 5.6 6 7 7 8	35GPA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7	Class C C C C C M M M	0-06 VMD 322 308 296 287 279 273 267 257 253 249	#402 <141 12% 15% 17% 18% 20% 21% 22% 24% 25% 26%	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90%	VC VC VC C C C C C	30-06 VMD 440 420 403 390 378 368 351 344 337	#4028 <141 4% 5% 6% 7% 7% 8% 9% 9% 10%	38-06 <600 78% 81% 83% 84% 85% 86% 88% 89%	MRECULARS Class XC XC XC XC VC VC VC VC	526 508 492 479 468 448 440 433	#4029 <141 2% 3% 3% 4% 4% 5% 5% 5%	64% 67% 70% 72% 73% 76% 77% 78%	XC XC XC XC XC XC XC XC	596 579 564 551 540 521 513 505	1% 2% 2% 2% 2% 2% 3% 3% 3%	51% 54% 57% 59% 61% 64% 65% 66%
-06	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64 0.67 0.73 0.76 0.79	Boom psi 20 25 30 35 40 45 50 60 65 70	10gpa 13 14 15 17 18 19 20 22 23	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20	15gpa 8 9 10 11 12 13 13 15 15 16	d (on 2 18gpa 7 8 9 9 10 11 11 12 13 13	0" space 20gpa 6.3 7.0 8 8 9 10 10 11 11 12 13	30gpa 4.2 4.7 5.1 5.6 6 6 7 7 8 8	35GPA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7	C C C C M M M M M M	0-06 VMD 322 308 296 287 279 273 267 257 253 249	#402 <141 12% 15% 17% 18% 20% 21% 22% 24% 25% 26% 27%	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90%	VC VC VC C C C C C	30-06 VMD 440 420 403 390 378 368 351 344 337 326	#4028 <141 4% 5% 6% 7% 7% 8% 9% 9% 10% 10%	38-06 <600 78% 81% 83% 84% 85% 86% 88% 89% 90%	MR8 Class XC XC XC XC VC VC VC VC C	526 508 492 479 468 448 440 433 419	#4029 <141 2% 3% 3% 4% 4% 5% 5% 5% 6%	64% 67% 70% 72% 73% 76% 77% 78% 80%	XC	596 579 564 551 540 521 513 505 492	#4028 <141 1% 2% 2% 2% 2% 2% 3% 3% 3% 3%	51% 54% 57% 59% 61% 64% 65% 66% 68%
-06	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.67 0.73 0.76 0.79 0.85 Flow	Boom psi 20 25 30 35 40 45 50 60 65 70 Boom	10gpa 13 14 15 17 18 19 20 22 23 24 25	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 Spraye	15gpa 8 9 10 11 12 13 13 15 15 16 17	d (on 2 18gpa 7 8 9 9 10 11 11 12 13 13 14 d (on 2	0" spac 20gpa 6.3 7.0 8 8 9 10 10 11 11 12 13 0" spac	30gpa 4.2 4.7 5.1 5.6 6 6 7 7 8 8 8 8sing) @	35gpa 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7	Class C C C C C C M M M M	0-06 VMD 322 308 296 287 279 273 267 257 253 249 242 60-08	#402 <141 12% 15% 17% 18% 20% 21% 22% 24% 25% 26% 27% #402	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 90%	VC VC VC C C C C C C C	30-06 VMD 440 420 403 390 378 368 351 344 337 326 30-08	#4028 <141 4% 5% 6% 7% 7% 8% 9% 9% 10% 10% #4028	38-06 <600 78% 81% 83% 84% 85% 86% 88% 89% 90% 38-08	XC XC XC XC VC VC VC VC VC	526 508 492 479 468 448 440 433 419 30-08	#4029 <141 2% 3% 3% 4% 5% 5% 5% 6% #4029	64% 67% 70% 72% 73% 76% 77% 78% 80%	XC XC XC XC XC XC XC XC XC XC XC	596 579 564 551 540 521 513 505 492 80-08	#4028 <141 1% 2% 2% 2% 2% 3% 3% 3% 3% 44028	51% 54% 57% 59% 61% 65% 66% 68% 80-08
-06	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64 0.67 0.73 0.76 0.79 0.85 Flow us gpm	Boom psi 20 25 30 35 40 45 50 60 65 70 Boom psi	10gpa 13 14 15 17 18 19 20 22 23 24 25	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 Spraye 18gpa	15gpa 8 9 10 11 12 13 13 15 15 16 17 er Speed	d (on 2 18gpa 7 8 9 9 10 11 11 12 13 14 d (on 2 25gpa	0" spac 20gpa 6.3 7.0 8 8 9 10 10 11 11 12 13 0" spac 30gpa	30gpa 4.2 4.7 5.1 5.6 6 7 7 8 8 8 8ing) @	35GPA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7	Class C C C C C M M M M Class	0-06 VMD 322 308 296 287 279 273 267 257 253 249 242 0-08 VMD	#402' <141 12% 15% 17% 18% 20% 21% 22% 24% 25% 26% 27% #402' <141	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 90% 000 000 00	VC VC VC C C C C C	30-06 VMD 440 420 403 390 378 368 351 344 337 326 30-08	#4028 <141 4% 5% 6% 7% 7% 8% 9% 9% 10% 10% #4028	38-06 <600 78% 81% 83% 84% 85% 86% 88% 89% 90%	XC XC XC XC VC VC VC VC VC	526 508 492 479 468 448 440 433 419 30-08	#4029 <141 2% 3% 3% 4% 4% 5% 5% 5% 6%	64% 67% 70% 72% 73% 76% 77% 78% 80%	XC XC XC XC XC XC XC XC XC XC XC	596 579 564 551 540 521 513 505 492 80-08	#4028 <141 1% 2% 2% 2% 2% 2% 3% 3% 3% 3%	51% 54% 57% 59% 61% 65% 66% 68% 80-08
-06	Flow us gpm 0.42 0.47 0.56 0.60 0.64 0.67 0.73 0.76 0.79 0.85 Flow us gpm 0.57	Boom psi 20 25 30 35 40 45 50 60 65 70 80 Boom psi 20	10gpa 13 14 15 17 18 19 20 22 23 24 25	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 Spraye 18GPA 9	15gpa 8 9 10 11 12 13 13 15 15 16 17 er Speed 20gpa 8	d (on 2 18gpa 7 8 9 9 10 11 11 12 13 14 d (on 2 25gpa 7	0" spac 20gpa 6.3 7.0 8 8 9 10 11 11 12 13 0" spac 30gpa 6	30gpa 4.2 4.7 5.1 5.6 6 6 7 7 8 8 8 8 sing) @ 35gpa 4.8	35GPA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7	C C C C C C M M M M M M C ERS	0-06 VMD 322 308 296 287 279 273 267 257 253 249 242 0-08 VMD 367	#402' <141' 12% 15% 17% 18% 20% 21% 22% 24% 25% 26% 27% #402' <141 12%	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 70-08 <600 86%	VC VC VC C C C C C C C C	30-06 VMD 440 420 403 390 378 368 351 344 337 326 30-08 VMD	#4028 <141 4% 5% 6% 7% 7% 8% 9% 90 10% 10% #4028 <141	38-06 <600 78% 81% 83% 84% 85% 86% 88% 89% 90% 38-08 <600	XC XC XC XC VC VC VC VC VC	526 508 492 479 468 448 440 433 419 30-08	#4029 <141 2% 3% 3% 4% 5% 5% 5% 6% #4029	64% 67% 70% 72% 73% 76% 77% 78% 80%	XC XC XC XC XC XC XC XC XC XC XC	596 579 564 551 540 521 513 505 492 80-08	#4028 <141 1% 2% 2% 2% 2% 3% 3% 3% 3% 44028	51% 54% 57% 59% 61% 65% 66% 68% 80-08
-06 Nozzles	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64 0.67 0.73 0.76 0.79 0.85 Flow us gpm 0.57 0.63	Boom psi 20 25 30 35 40 45 50 60 65 70 80 Boom psi 20 25	10gpa 13 14 15 17 18 19 20 22 23 24 25 15gpa 11 13	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 Spraye 18gpa 9 10	15gpa 8 9 10 11 12 13 13 15 15 16 17 er Speed 20gpa 8 9	d (on 2 18gpa 7 8 9 10 11 11 12 13 14 d (on 2 25gpa 7	0" space 20gpa 6.3 7.0 8 8 9 10 11 11 12 13 0" space 30gpa 6 6	30gpa 4.2 4.7 5.1 5.6 6 7 7 8 8 8 sing) @ 35gpa 4.8	35GPA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 9	Class C C C C C C C C M M M M M Class VC C C	0-06 VMD 322 308 296 287 279 273 267 257 253 249 242 0-08 VMD 367 338	#402 <141 12% 15% 17% 18% 20% 21% 22% 24% 25% 26% 27% #402 <141 12% 15%	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% <600 86% 89%	SR8 Class VC VC C C C C C C C C C C C C C C C C	30-06 VMD 440 420 403 390 378 368 351 344 337 326 30-08 VMD	#4028 <141 4% 5% 6% 7% 7% 8% 9% 9% 10% 10% #4028 <141	38-06 <600 78% 81% 83% 84% 85% 86% 88% 89% 90% 38-08 <600	MR8 Class XC XC XC VC VC VC C MR8 Class	526 508 492 479 468 448 440 433 419 80-08 VMD	#4029 <141 2% 3% 3% 4% 4% 5% 5% 5% 6% #4029 <141	64% 67% 70% 72% 73% 76% 77% 80% 90-08 <600	Class XC	596 579 564 551 540 521 513 505 492 80-08	1% 2% 2% 2% 3% 3% 3% 3% 44028 <141	51% 54% 57% 59% 61% 65% 66% 68% 30-08 <600
-06 Nozzles	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64 0.67 0.79 0.85 Flow us gpm 0.57 0.63	Boom psi 20 25 30 35 40 45 50 60 65 70 80 Boom psi 20 25 30	10gpa 13 14 15 17 18 19 20 22 23 24 25 15gpa 11 13	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 Spraye 18gpa 9 10 11	15gpa 8 9 10 11 12 13 13 15 15 16 17 er Speed 20gpa 8 9	d (on 2 18gpa 7 8 9 9 10 11 11 12 13 14 d (on 2 25gpa 7 8	0" space 20gpa 6.3 7.0 8 8 9 10 10 11 11 11 12 13 0" space 30gpa 6 6 7	30gpa 4.2 4.7 5.1 5.6 6 6 7 7 8 8 8 sing) @ 35gpa 4.8 5	35GPA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 7 7 8	Class C C C C C C C C C C C C C C C C C C	0-06 VMD 322 308 296 287 279 273 267 257 253 249 242 0-08 VMD 367 338 317	#402 <141 12% 15% 17% 18% 20% 21% 22% 24% 25% 26% 27% #402 <141 12% 15% 17%	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% <600 86% 89% 90%	VC VC C C C C C C C C C C UC	30-06 VMD 440 420 403 390 378 368 351 344 337 326 30-08 VMD 516 490	#4028 <141 4% 5% 6% 7% 8% 9% 9% 10% 10% #4028 <141 7% 8%	88-06 <600 78% 81% 83% 84% 85% 86% 88% 89% 90% 38-08 <600 54%	MR8 Class XC XC XC VC VC VC C MR8 Class	526 508 492 479 468 448 440 433 419 30-08 VMD	#4029 <141 2% 3% 3% 4% 5% 5% 5% 6% #4029 <141	64% 67% 70% 72% 73% 76% 77% 78% 80% 90-08 <600	DR8 Class XC	596 579 564 551 540 521 513 505 492 30-08 VMD	1% 2% 2% 2% 3% 3% 3% 44028 <141 3%	51% 54% 57% 59% 61% 66% 66% 68% 30-08 <600
-06 Nozzles 80 -08	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64 0.67 0.79 0.85 Flow us gpm 0.57 0.63 0.69	Boom psi 20 25 30 35 40 45 50 60 65 70 80 Boom psi 20 25 30 35	10gpa 13 14 15 17 18 19 20 22 23 24 25 15gpa 11 13 14	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 Spraye 18 19 10 11 12	15GPA 8 9 10 11 11 12 13 13 15 15 16 17 er Speed 20GPA 9	d (on 2 18gpa 7 8 9 10 11 11 12 13 13 14 d (on 2 25gpa 8 9	0" space 20gpa 6.3 7.0 8 8 9 10 10 11 11 12 13 0" space 30gpa 6 7 7	30gpa 4.2 4.7 5.1 5.6 6 7 7 8 8 8 sing) @ 35gpa 4.8	35gpa 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 7 7 9	Class C C C C C C C C C C C C C C C C C C	0-06 VMD 322 308 296 287 279 273 267 257 253 249 242 0-08 VMD 367 338 317	#402 <141 12% 15% 17% 18% 20% 21% 22% 24% 25% 26% 27% #402 <141 12% 15% 17% 19%	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 600 86% 89% 90% 92%	VC VC C C C C C C C C C C C C C C C C C	30-06 VMD 440 420 403 390 378 368 351 344 337 326 30-08 VMD 516 490 468	#4028 <141 4% 5% 6% 7% 7% 8% 9% 90 10% 10% 10% 4028 <141 7% 8%	88-06 <600 78% 81% 83% 84% 85% 86% 88% 89% 90% 38-08 <600 54% 59% 63%	MR8 Class XC XC XC VC VC VC VC UC UC UC UC	526 508 492 479 468 448 440 433 419 30-08 VMD	#4029 <141 2% 3% 3% 4% 4% 5% 5% 6% #4029 <141	64% 67% 70% 73% 76% 77% 78% 78% 80% 800-08 <600	Class XC	596 579 564 551 540 521 513 505 492 80-08 VMD	#4028 <141 1% 2% 2% 2% 2% 3% 3% 3% 44028 <141 3% 4%	51% 54% 57% 59% 61% 64% 65% 66% 66% 30-08 <600
-06 Nozzles	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64 0.67 0.73 0.76 0.79 0.85 Flow us gpm 0.57 0.63 0.69 0.75 0.80	Boom psi 20 25 30 35 40 45 50 60 65 70 80 Boom psi 20 25 30 35 40	10gpa 13 14 15 17 18 19 20 22 23 24 25 11 13 14 15 15 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 Spraye 18gpa 9 10 11 12 13	15GPA 8 9 10 11 12 13 13 15 15 16 17 er Speed 20GPA 9 10	d (on 2 18gpa 7 8 9 9 10 11 11 12 13 14 d (on 2 25gpa 7 8 8	0" space 20gpa 6.3 7.0 8 8 9 10 10 11 11 12 13 0" space 6 6 7 7 8	30gPA 4.2 4.7 5.1 5.6 6 7 7 8 8 8 8 9 35gPA 4.8 5 6 6 7 7 7 8 7 8 8 8 7 8 8 8 8 7 8 8 8 7 8 8 8 8 8 7 8 8 8 8 8 7 8	35GPA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 8 40GPA 4.7 5 6 6	Class C C C C C C C M M M M M M M M M M M M M	0-06 VMD 322 308 296 287 279 273 267 257 253 249 242 242 0-08 VMD 367 338 317 300 286	#402 <141 12% 15% 17% 18% 20% 21% 22% 24% 25% 26% 27% #402 <141 12% 15% 17% 19% 21%	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 5008 <600 86% 90% 90% 90% 90%	VC VC C C C C C C C C C C C C C C C C C	30-06 VMD 440 420 403 390 378 368 351 344 337 326 30-08 VMD 516 490 468 449	#4028 <141 4% 5% 6% 7% 7% 8% 9% 10% 10% #4028 <141 7% 8% 8% 9%	88-06 <600 78% 81% 83% 84% 85% 86% 88% 89% 90% 38-08 <600 54% 63% 66%	MR8 Class XC XC XC XC VC VC VC VC VC UC UC UC UC UC	526 508 492 479 468 448 440 433 419 80-08 VMD 540 518	#4029 <141 2% 3% 3% 4% 4% 5% 5% 6% #4029 <141 6% 7% 8%	00-06 <600 64% 67% 70% 73% 76% 77% 78% 80% 00-08 <600	XC X	596 579 564 551 540 521 513 505 492 30-08 VMD	#4028 <141 1% 2% 2% 2% 2% 3% 3% 3% 344028 <141 3% 4%	51% 54% 57% 59% 61% 64% 65% 66% 68% 30-08 <600
-06 Nozzles 80 -08	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64 0.79 0.85 Flow us gpm 0.57 0.63 0.69 0.75 0.80 0.85	Boom psi 20 25 30 40 45 50 60 65 70 80 Boom psi 20 25 30 35 40 45 55 35 40 45	10gpa 13 14 15 17 18 19 20 22 23 24 25 15gpa 11 13 14 15 17	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 Spraye 18 GPA 9 10 11 12 13 14	15GPA 8 9 10 11 12 13 13 15 15 16 17 er Speed 20GPA 8 9 10 11	d (on 2 18gpa 7 8 9 9 10 11 11 12 13 14 d (on 2 25gpa 7 8 8 9	0" space 20gpa 6.3 7.0 8 8 9 10 10 11 11 12 13 0" space 30gpa 6 6 7 7 8 8 8	30gPA 4.2 4.7 5.1 5.6 6 7 7 8 8 8 8 9 35GPA 4.8 5 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	35GPA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 8 40GPA 4.2 4.7 5 6 6 6	Class C C C C C C C C C C C C C C C C C C C	0-06 VMD 322 308 296 287 279 267 257 253 249 242 0-08 VMD 367 338 317 300 286 274	#402 <141 12% 15% 17% 20% 21% 22% 24% 25% 26% 26% 402 <141 12% 15% 17% 90 402 <141 12% 15% 17% 17% 19% 21% 22% 24% 24% 25% 26% 27% 26% 27% 21% 21% 21% 21% 21% 21% 21% 21	70-06 <600 92% 91% 91% 91% 91% 91% 90% 90% 90% 90% 5600 86% 89% 99% 92% 93%	SR8 VC VC VC C C C C C C C C C C C C C C C	0-06 VMD 440 420 403 390 351 344 337 326 0-08 VMD 516 490 468 449	#4028 <141 4% 5% 6% 7% 7% 8% 9% 10% 10% #4028 <141 7% 8% 9% 10%	88-06 <600 78% 81% 83% 84% 85% 88% 89% 89% 38-08 <600 54% 66% 66% 69%	MR8 Class XC XC XC XC VC VC VC VC UC UC UC UC UC UC	80-06 VMD 526 508 492 479 468 448 440 433 419 80-08 VMD 518 500 484	#4029 <141 2% 3% 3% 4% 4% 5% 5% 6% #4029 <141 6% 7% 8% 9%	64% 67% 70% 76% 77% 78% 80% 30-08 <600 63% 69% 71%	DR8 Class XC	596 579 564 551 540 521 51 505 492 80-08 VMD 619 600 585	#4028 <141 1% 2% 2% 2% 2% 2% 3% 3% 3% 34 4028 <141 34 4% 4%	51% 54% 57% 57% 66% 66% 66% 68% 30-08 <600
-06 Nozzles 80 -08	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64 0.67 0.73 0.76 0.79 0.85 Flow us gpm 0.57 0.63 0.69 0.75 0.88 0.89	Boom psi 20 25 30 440 45 50 Boom psi 20 25 30 445 40 45 50 65 40 45 40 45 50 65 50 50 65 50 65 65 65 65 65 65 65 65 65 65 65 65 65	10gpa 13 14 15 17 18 19 20 22 23 24 25 11 13 14 15 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 Spraye 18gpa 9 10 11 12 13 14 15 16 17 18 19 19 10 11 12 13 14 15 16 17 18 19 19 10 11 11 12 13 14 15	156PA 8 9 10 11 12 13 15 15 16 17 20GPA 8 9 10 11 13 13 13 13 13 13 13 13 13	d (on 2 18gpa 7 8 9 9 9 10 11 11 12 13 13 14 d (on 2 25gpa 7 8 8 8 9 9 10 10 11 11 11 11 12 13 13 13 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	0" spat 6 6 7 7 8 8 8 9 9	30gPA 4.2 4.7 5.1 5.6 6 6 7 7 8 8 8 8 sing) @ 35gPA 4.8 5 6 6 7 7 8 8 8 8 7 8 8 8 8 8 8 8 8 8 8 8	35GPA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 7 7 7 7 5 6 6 6 7 7 7 7 7 7 5 6 6 6 7 7 7 7	Class C C C C C C C M M M M M M M M M M M M	0-06 VMD 322 308 296 287 273 267 253 249 242 0-08 VMD 367 338 317 300 286 274 264	#402' <141 12% 15% 17% 17% 20% 21% 22% 24% 24% 25% #402' <141 12% 15% 17% 19% 22% 23%	0-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 50% 600 86% 89% 90% 90% 29% 90% 400 89% 90% 90% 90% 90% 90% 90% 90% 90% 90% 9	SR8 VC VC VC C C C C C C C C C C C C C C C	00-06 VMD 440 420 390 378 368 351 344 VMD 516 490 468 449 449 442 443 447	#4028 <141 4% 5% 6% 7% 7% 8% 9% 10% 10% 88% 89% 10% 10% 10%	88-06 <600 78% 81% 83% 85% 86% 88% 89% 90% 38-08 <600 59% 63% 63% 69% 71%	MR8 Class XC XC XC XC VC VC VC VC C MR8 Class	526 508 492 479 468 448 440 433 50-08 VMD 540 550 484 470	#4029 <141 2% 3% 3% 4% 4% 5% 5% 5% 6% #4029 <141 7% 6% 9%	64% 67% 70% 72% 73% 76% 80% 800-08 <600	DR8 Class XC	596 579 564 551 540 521 513 505 492 80-08 VMD	#4028 <141 1% 2% 2% 2% 2% 2% 3% 3% 3% 3% 440 440 4% 4% 5%	51% 54% 57% 61% 64% 65% 66% 68% 80-08 <600 55% 58% 60% 62%
-06 Nozzles 80 -08	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64 0.67 0.79 0.85 Flow us gpm 0.57 0.63 0.69 0.75 0.80 0.89 0.98	Boom psi 20 25 30 35 40 45 50 80 Boom psi 20 25 30 35 40 45 50 60 65 50 60 65 60 66 65 60 66 60 66 60 60 60 60 60 60 60 60 60	10gpa 13 14 15 17 18 19 20 22 23 24 25 15gpa 11 13 14 15 16 17 18	Spraye 12.5 10 11 12 13 14 15 16 19 20 Spraye 18GPA 9 10 11 12 13 14 15 16 16	15 15 16 17 17 18 18 19 19 19 19 19 19	d (on 2 186PA 7 8 9 9 10 11 11 12 13 13 14 d (on 2 256PA 7 8 8 9 10 10 11 11 11 12 13 13 14 14 10 10 12 15 15 16 16 16 16 16 16 16 16 16 16 16 16 16	0" spat 20GPA 6.3 7.0 8 8 9 10 11 11 12 13 13 16 6 6 7 7 8 8 9 10 10 10 10 10 10 10	30gPA 4.2 4.7 5.1 5.6 6 7 7 8 8 8 8 5 6 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	35GPA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 7 9 40GPA 4.2 4.7 5 6 6 6 7 7 7	Class C C C C C C C M M M M M M M M M F F	0-06 VMD 322 308 296 287 273 267 257 253 249 VMD 367 338 317 300 286 274 274 264	#402' -141 12% 15% 15% 18% 20% 21% 22% 24% 25% 26% 4402 -112% 15% 17% 19% 21% 22% 22% 26% 26% 27% 26% 26% 26% 26% 26% 26%	0-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 90% 89% 600 889% 99% 93% 93% 93% 93% 95%	SR8 Class VC VC VC C C C C C C C SR8 Class UC VC XC XC XC XC	0-06 VMD 440 420 403 390 378 368 351 344 337 326 00-08 VMD 516 490 468 449 443 4417 390	#4028 <141 4% 5% 6% 7% 7% 8% 9% 10% 10% #4028 <141 7% 8% 8% 9%	88-06 <600 81% 83% 84% 85% 86% 89% 89% 90% 88-600 54% 66% 66% 674% 74%	MR8 Class XC XC XC XC VC VC VC C MR8 Class UC UC XC	526 508 492 479 468 448 440 00-08 VMD 518 500 484 470 448	#4029 <141 2% 3% 3% 4% 4% 5% 5% 6% #4029 <141 6% 7% 8% 9% 9%	64% 67% 70% 72% 73% 76% 77% 63% 6600 63% 67% 67% 73% 73%	DR8 Class XC	596 579 564 551 540 551 552 521 505 492 80-08 VMD 600 585 571 559 539	#4028 <141 1% 2% 2% 2% 2% 3% 3% 3% 3% 44028 444 446 446 446 556 556	51% 54% 55% 65% 66% 66% 68% 30-08 <600 55% 66% 68% 60-08 600
-06 Nozzles 80 -08	Flow us gpm 0.42 0.56 0.60 0.64 0.73 0.76 0.79 0.85 Flow us gpm 0.57 0.80 0.85 0.89 0.98 1.02	Boom psi 20 25 30 35 40 45 50 80 Boom psi 20 25 30 35 40 45 50 66 65 50 66 65 66 66 66 66 66 66 66 66 66 66 66	10gpa 13 14 15 17 18 19 20 22 23 24 25 15gpa 11 13 14 15 16 17 18	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 Spraye 9 10 11 12 13 14 15 16 17 17 18 19 10 11 11 12 13 14 15 16 17	T Speet T Sp	d (on 2 186PA 7 8 9 9 10 11 12 13 13 14 d (on 2 256PA 8 9 10 10 11 11 12 12 13 13 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	0" spat 6.3 7.0 8 8 9 10 10 11 11 11 12 30 8 9 6 6 6 7 7 7 8 8	30gPA 4.2 4.7 4.7 5.1 5.6 6 6 7 7 8 8 8 35gPA 4.8 5 6 6 7 7 8 8 8 9	35GPA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 7 7 7 5 6 6 6 6 7 7 7 7 7 8	Class C C C C C C C M M M M M M M M M M M M	0-06 VMD 322 308 296 277 257 257 253 249 242 242 387 300 387 300 286 274 242 242 242 242 244 244 244	#402' <141 12% 15% 17% 18% 20% 21% 22% 24% 25% 24% 25% 26% 411 12% 119% 21% 22% 2141 12% 22% 23% 23% 27%	0-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 90% 90% 90% 90% 90% 90	VC VC VC C C C C C C C C C C C C C C C	00-06 VMD 440 420 403 390 378 368 351 326 00-08 VMD 516 490 468 449 432 437 390 379	#4028 <141 4% 5% 6% 7% 8% 9% 10% <10% <141 7% 8% 8% 9% 10% 111% 12%	88-06 <600 81% 83% 84% 85% 86% 89% 90% 88-08 <600 55% 63% 66% 69% 71% 74% 75%	MR8 Class XC XC XC VC VC VC VC C MR8 Class UC UC UC XC	526 508 492 479 468 448 440 433 419 30-08 VMD 518 500 484 470 448 448	#4029 <\dashbar{4} 3% 3% 3% 4% 4% 5% 5% 6% #4029 <\dashbar{4} 11%	64% 67% 70% 73% 78% 78% 80% 00-08 6600 669% 71% 76% 76% 69% 71%	DR8 Class XC	596 579 564 551 551 505 505 500 600 585 571 553 553 553 553	#4028 <141 1% 2% 2% 2% 2% 3% 3% 3% 44028 <141 3% 4% 4% 4% 5% 5% 5%	51% 54% 57% 59% 61% 66% 68% 30-08 <55% 55% 55% 60% 60% 62% 66% 66%
-06 Nozzles 80 -08	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64 0.79 0.85 Flow us gpm 0.57 0.63 0.69 0.75 0.89 0.85 0.89 1.02 1.06	Boom psi 20 25 30 35 40 45 50 660 65 70 660 65 70	10 GPA 13 14 15 17 18 19 20 22 23 24 25 15 GPA 11 13 14 15 16 17 18 19 20 22 21 23 24 25 25 26 27 27 28 28 29 20 20 20 20 20 20 20 20 20 20 20 20 20	Spraye 12.5 10 11 11 12 13 14 15 16 17 18 19 20 20 11 11 12 13 14 15 16 17 17 17	r Speet 156PA 8 9 10 11 12 13 15 16 8 9 10 11 12 13 15 15 16 10 11 12 13 13 15 15 16 15 16 15 16 15 16 15 16 16	d (on 2 186PA 7 8 9 9 10 11 12 12 256PA 7 8 8 9 9 10 11 11 12 13 13 13 13 14 14 15 16 16 17 18 18 18 18 19 10 11 11 12 12 13 13 13 13 13 13 14 15 15 16 16 16 16 16 16 16 16 16 16 16 16 16	0" spat 20GPA 6.3 7.0 8 8 9 10 11 11 12 13 30GPA 6 6 6 7 7 8 8 8 9 10 10 11 11 11 12 13 10 10 10 10 10 10 10 10 10 10 10 10 10	30gPA 4.2 4.7 5.1 5.6 6 7 7 8 8 8 8 7 7 7 8 8 9 9	35GPA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 7 5 6 6 6 7 7 7 7 7 7 7 7 8 8 6 6 6 7 7 7 7	Class C C C C C C C C M M M M M ER8 Class VC C C C M M M M M F F F F F	0-06 VMD 322 308 296 287 279 257 257 249 242 0-08 VMD 367 300 286 274 264 264 264 247 247 240 233	#402' <141 12% 15% 17% 18% 20% 21% 22% 24% 25% 26% 27% 401 12% 15% 21% 22% 2141 22% 2141 22% 23% 23% 26% 28% 28%	0-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 86% 89% 90% 93% 93% 93% 93% 93% 94% 95% 95%	VC VC C C C C C C C C C C C C C C C C C	00-06 VMD 440 420 403 390 378 351 344 337 326 490 VMD 516 490 448 449 432 417 390 379 368	#4028 <141 4% 5% 6% 7% 7% 9% 10% \$8% 4028 <141 7% 8% 8% 9% 10% 11% 12% 12%	88-06 <600 78% 81% 83% 84% 85% 89% 89% 90% 54% 554% 66% 66% 69% 71% 75% 76%	MR8 Class XC XC XC VC VC VC VC VC C MR8 Class UC UC UC XC	526 508 492 479 479 800-08 540 550 484 440 440 433 419 500-08 540 550 484 470 448 433 433	#4025 <141 2% 3% 3% 4% 5% 5% 6% 64 44025 <141 88 99 90 10% 111%	64% 67% 70% 72% 78% 80% 80% 6600 63% 67% 69% 71% 73% 73% 73%	DR8 Classs XC	596 579 564 551 513 505 492 50-08 VMD 619 600 585 571 559 539 531 523	#4028 <141 1% 2% 2% 2% 2% 2% 3% 3% 3% #4028 <141 3% 4% 4% 5% 5% 5% 6%	51% 54% 57% 59% 61% 66% 68% 30-08 <600 55% 55% 66% 66% 66% 66% 66% 66%
-06 Nozzles 80 -08	Flow us gpm 0.47 0.52 0.56 0.60 0.64 0.67 0.73 0.76 0.79 0.85 Flow us gpm 0.57 0.69 0.75 0.80 0.85 0.89 0.98 1.02 1.06 1.13	Boom psi 20 35 40 45 50 60 80 45 50 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	10gpa 13 14 15 17 18 19 20 22 23 24 25 15gpa 11 13 14 15 16 17 18	Spraye 12.5 10 11 11 12 13 14 15 16 17 18 20 Spraye 18ee 10 11 12 13 14 15 16 17 17 18 19 10 11 11 12 13 14 15 16 17 17 19	r Speer 156PA 8 9 10 11 12 13 15 15 16 17 17 18 19 10 11 12 13 15 15 15 15 15 15 15	d (on 2 186PA	0" spate 6.3 8 8 9 10 10 11 11 11 12 13 0" spate 6 7 7 8 8 9 10 10 11 11 11 12 13 0" spate 6 6 7 7 8 8 9 10 10 11 11 11 11 11	30gPA 4.2 4.7 5.6 6 6 7 7 8 8 8 8 8 9 9 100	35GPA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 7 3 40GPA 4.2 4.7 5.6 6 6 6 7 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8	Class C C C C C C C C M M M M M ER8 Class VC C C C M M M M M M M M M M M M M M M M	0-06 VMD 322 308 296 287 279 267 253 249 242 0-08 337 300 367 338 317 300 286 274 264 247 240 242 242 242 242 243 244 244 247 244 247 248 248 248 248 248 248 248 248 248 248	#402' <141 12% 15% 17% 18% 20% 22% 24% 22% 24% 25% 25% 4402' <141 12% 15% 17% 19% 21% 22% 24% 22% 24% 28% 29% 29%	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 600 86% 90% 92% 93% 93% 93% 934% 95% 95% 96% 96%	VC VC C C C C C C C C C C C C C C C C C	0-06 VMD 440 420 403 390 378 368 351 344 337 326 0-08 VMD 516 490 468 449 449 449 432 417 390 378 368 368 368 368 368 368 368 368 378 378 378 378 378 378 378 378 378 37	#4028 <141 4% 5% 6% 7% 8% 9% 9% 10% 10% 8% 8% 10% 10% 10% 11% 12% 12% 13	88-06 <600 81% 81% 83% 84% 85% 89% 89% 600 54% 66% 63% 66% 69% 71% 75% 76%	MR8 Class XC VC VC VC VC C MR8 Class UC UC UC XC	526 508 492 479 468 448 440 433 419 30-08 500 518 500 484 470 448 438 448 448 449 449 449 449 449 449 449 44	#4028 <141 2% 3% 4% 4% 5% 6% #4025 <141 6% 7% 8% 9% 10% 11% 11%	64% 67% 70% 72% 73% 76% 77% 80% 63% 669% 71% 73% 76% 77% 80%	Class VC XC	596 579 554 551 550 500 500 500 500 500 500 500 500	#4028 <141 1% 2% 2% 2% 2% 3% 3% 3% #4028 <141 3% 4% 4% 4% 5% 5% 5% 6%	51% 54% 59% 61% 65% 66% 66% 68% 66% 68% 600 52% 55% 60% 60% 60% 60% 60% 60% 60% 60
-06 Nozzles 80 -08	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64 0.79 0.85 Flow us gpm 0.57 0.63 0.69 0.75 0.80 0.85 0.89 1.02 1.06 1.13 Flow	Boom psi 20 35 40 40 65 50 60 65 50 60 65 50 60 65 50 60 65 80 80 80 80 80 80 80 80 80 80 80 80 80	10 GPA 13 14 15 17 18 19 20 22 23 24 25 11 13 14 15 16 17 18 19 20 22 22 23 24 25 25 26 27 27 28 28 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 Spraye 11 12 13 14 15 16 17 17 18 19 10 11 11 12 13 14 15 16 17 17 18 19 19 10 10 11 11 12 13 14 15 16 17 17 17 17 17 19 Spraye	T Speet T Sp	d (on 2 186PA	0" spate 6	ing) @ 30gPA	35GPA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Class C C C C C C C C M M M M M ER8 Class VC C C C M M M M M M M M M M M M M M M M	0-06 VMD 322 308 296 287 279 257 253 249 242 0-08 317 300 367 338 317 300 286 274 242 242 242 242 242 242 242	#402' <141' 12% 15% 15% 17% 18% 20% 21% 22% 24% 26% 26% 27% 24% 110' 24% 2111 12% 15% 2114 12% 15% 2146 22% 2146 22% 2146 22% 2146 22% 22% 23% 2440 22% 2444 22% 2444 22% 2444 2444 2	70-06 <600 92% 91% 91% 91% 91% 91% 90% 90% 90% 50% 90% 90% 4000 86% 90% 92% 93% 93% 93% 95% 95%	VC VC C C C C C C C C C C C C C C C C C	00-06 VMD 440 420 403 390 390 00-08 VMD 516 490 468 449 432 449 432 437 390 379 368 351 368 351 326 490 490 490 490 490 490 490 490	#4028 <141 4% 5% 6% 7% 8% 9% 9% 10% 10% 10% #4028 <141 7% 8% 8% 9% 10% 11% 12% 12% 12% 13% #4028 #4028 12% 12% 12% 13% 13% 13% 14% 14% 14% 14% 15% 16%	88-06 <600 78% 81% 83% 84% 85% 86% 88% 89% 90% 63-600 559% 63% 66% 74% 75% 76% 76%	MR8 Class XC VC VC VC VC C MR8 Class UC UC UC XC	526 508 492 479 468 448 440 30-08 VMD 518 500 484 433 434 434 434 434 434 438 438 438	#4028 <141 2% 3% 4% 5% 5% 5% 6% #4028 <141 7% 8% 10% 11% 11% 112% #4028	64% 67% 70% 73% 76% 78% 80% 600 63% 67% 69% 71% 73% 76% 69% 71% 78%	Class VC XC	596 579 556 551 540 551 505 492 30-08 771 619 600 585 571 523 505 549 559 559 539 539 539 539 539 539	#4028 <141 1% 2% 2% 2% 2% 2% 3% 3% 3% 3% 44028 <141 4% 4% 4% 6% 6% 6%	51% 54% 557% 559% 61% 66% 66% 68% 30-08 52% 555% 66% 66% 66% 66% 66% 66% 66% 66% 6
-06 Nozzles 80 -08	Flow us gpm 0.42 0.56 0.60 0.64 0.67 0.73 0.76 0.85 Flow us gpm 0.57 0.85 0.89 0.95 1.02 1.06 1.13 Flow us gpm us gpm 1.02 1.06 1.13 Flow us gpm 1.02 1.06 1.13 Flow us gpm 1.02 1.06 1.13 Flow us gpm 1.02 gpm 1.02 1.06 1.13 Flow us gpm 1.02 gpm 1.02 gpm 1.02 1.06 1.13 Flow us gpm	Boom psi 20 25 30 35 65 70 80 Boom psi 20 25 50 66 65 70 80 Boom psi 20 25 80 60 65 70 80 Boom psi 80 80 80 80 80 80 80 80 80 80 80 80 80	10 GPA 13 14 15 17 18 19 20 22 23 24 25 15 GPA 11 13 14 15 16 17 18 19 20 21 22 21 24 25 11 20 20 21 21 21 21 21 21 21 21 21 21 21 21 21	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 Spraye 18GPA 9 10 11 12 13 14 15 16 17 17 17 19 18 18 18 19 19 10 11 11 11 11 11 11 11 11 11 11 11 11	T Speet T Sp	d (on 2 186PA 8 9 9 9 10 11 11 11 12 256PA 8 8 9 10 10 11 13 13 13 14 14 10 10 12 12 13 13 13 10 10 11 12 12 13 13 13 10 10 11 12 12 13 13 13 14 10 10 11 12 12 13 13 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15	0" spate 6.3 10 10 11 11 12 13 30cpa 6 6 7 7 8 8 8 9 9 10 10 10 10 11 10 10 10 10 10 10 10 10	30gPA 4.2 4.7 5.1 5.6 6 6 7 7 8 8 8 8 8 5 6 6 7 7 7 8 8 8 9 9 9 10 10 10 10 10 10 10 10 10 10 10 10 10	356PA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 7 7 8 40GPA 4.2 4.7 5 6 6 6 7 7 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8	Class C C C C C C C C M M M M M M M M M M M M	0-06 VMD 322 287 279 273 267 2557 253 249 0-08 VMD 367 338 274 300 286 274 240 242 240 233 0-10 VMD	#402' <141' 12% 15% 17% 15% 17% 17% 20% 21% 22% 24% 26% 26% 27% 15% 21% 22% 24% 25% 26% 27% 28% 21% 22% 23% 23% 23% 22% 23% 24% 24% 24% 24% 24% 24% 25% 24% 25% 24% 25% 25% 25% 26% 26% 26% 27% 26% 27% 28% 28% 29% 24%	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 86% 89% 90% 86% 93% 93% 95% 95% 95% 96%	VC VC C C C C C C C C C C C C C C C C C	0-06 VMD 440 420 403 390 378 368 351 344 337 326 0-08 VMD 516 490 468 449 449 449 432 417 390 378 368 368 368 368 368 368 368 368 378 378 378 378 378 378 378 378 378 37	#4028 <141 4% 5% 6% 7% 8% 9% 9% 10% 10% 8% 8% 10% 10% 10% 11% 12% 12% 13	88-06 <600 81% 81% 83% 84% 85% 89% 89% 600 54% 66% 63% 66% 69% 71% 75% 76%	MR8 Class XC VC VC VC VC C MR8 Class UC UC UC XC	526 508 492 479 468 448 440 433 419 30-08 500 518 500 484 470 448 438 448 448 449 449 449 449 449 449 449 44	#4028 <141 2% 3% 4% 4% 5% 6% #4025 <141 6% 7% 8% 9% 10% 11% 11%	64% 67% 70% 72% 73% 76% 77% 80% 63% 669% 71% 73% 76% 77% 80%	Class VC XC	596 579 554 551 550 500 500 500 500 500 500 500 500	#4028 <141 1% 2% 2% 2% 2% 2% 3% 3% 3% #4028 <141 4% 4% 5% 5% 5% 6%	51% 54% 59% 61% 65% 66% 66% 68% 66% 68% 600 52% 55% 60% 60% 60% 60% 60% 60% 60% 60
-06 Nozzles 80 -08	Flow us gpm 0.447 0.52 0.56 0.60 0.64 0.67 0.73 0.76 0.79 0.85 Flow us gpm 0.57 0.63 0.69 0.98 1.02 1.06 1.13 Flow us gpm 0.71	Boom psi 20 25 30 35 40 45 50 60 65 50 60 65 70 80 Boom psi 20 65 70 80 Boom psi 20 25 30 35 50 60 65 70 80 Boom psi 20 25 25 25 25 25 25 25 25 25 25 25 25 25	10 GPA 13 14 15 17 18 19 20 22 23 24 25 15 GPA 11 13 14 15 16 17 18 19 20 22 22 23 24 25 11 11 12 13 14 15 15 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19	Spraye Spraye	T Speet T Sp	d (on 2 186PA 8 9 9 9 10 11 11 11 12 13 13 14 2 256PA 7 8 8 9 9 10 11 11 11 11 11 11 11 11 11 11 11 11	0" spate 0 0 0 0 0 0 0 0 0	ing) @ 30cpa 4.2 4.7 5.1 5.6 6 6 7 7 8 8 8 8 8 8 5 6 6 7 7 7 8 8 8 9 9 10 10 4.8 10 10 10 10 10 10 10 10 10 10 10 10 10	35gpa 3.6 4.0 4.4 4.8 5.1 5.1 5.4 6 6 7 7 7 7 9 4.0 4.2 4.7 5.6 6 6 6 7 7 7 7 7 8 8 8 8 8 8 8 8 8 8 8	Class C C C C C C C C C C C C C C C C C C C	0-06 VMD 322 296 287 279 273 267 257 253 249 242 242 338 VMD 367 338 317 300 286 274 242 242 242 243 249 240 240 240 241 241 240 243 244 244 247 240 243 243 244 244 245 246 247 247 248 248 249 249 249 240 240 240 240 240 240 240 240	#402' <141' 12% 15% 15% 17% 18% 20% 21% 22% 26% 25% 26% 27% 15% 19% 23% 23% 23% 23% 23% 24% 23% 29% #402' 24% 39%	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 80% <600 86% 92% 93% 94% 95% 95% 96% 78%	Class VC VC VC C C C C C C C C C C C C C C	00-06 VMD 440 420 403 390 378 368 351 344 516 490 448 449 449 449 432 417 390 0-10 VMD	#4028 <141 4% 5% 6% 7% 7% 8% 9% 10% 44028 4141 7% 8% 8% 9% 10% 11% 12% 12% 13% #4028 <141	88-06 <600 78% 81% 83% 84% 85% 86% 88% 89% 90% 88-08 <600 54% 63% 63% 74% 76% 76% 78% 88-08 <600	MR8 Class XC VC VC VC VC C MR8 Class UC UC UC XC	526 508 492 479 468 448 440 30-08 VMD 518 500 484 433 434 434 434 434 434 438 438 438	#4028 <141 2% 3% 4% 5% 5% 5% 6% #4028 <141 7% 8% 10% 11% 11% 112% #4028	64% 67% 70% 73% 76% 78% 80% 600 63% 67% 69% 71% 73% 76% 69% 71% 78%	Class VC XC	596 579 556 551 540 551 505 492 30-08 771 619 600 585 571 523 505 549 559 559 539 539 539 539 539 539	#4028 <141 1% 2% 2% 2% 2% 2% 3% 3% 3% 3% 44028 <141 4% 4% 4% 6% 6% 6%	51% 54% 557% 559% 61% 66% 66% 68% 30-08 52% 555% 66% 66% 66% 66% 66% 66% 66% 66% 6
-06 Nozzles 80 -08 Nozzles	Flow us gpm 0.42 0.52 0.56 0.60 0.64 0.67 0.79 0.85 Flow us gpm 0.57 0.63 0.69 0.75 0.80 0.85 1.02 1.06 1.13 Flow us gpm 0.79 0.79 0.79 0.79 0.79	Boom psi 20 25 30 35 40 45 50 60 65 50 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	10 GPA 13 14 15 17 18 19 20 22 23 24 25 15 GPA 11 13 14 15 16 17 18 19 20 21 22 23 11 11 12 13 14 14 15 15 17 18 19 20 20 21 21 21 21 21 21 21 21 21 21 21 21 21	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 Spraye 11 12 13 14 15 16 17 17 17 19 Spraye 18eexe 18eexe 18eexe 18eexe 13 13 14 17 17 19 19 10 11 11 12 13 14 15 16 17 17 17 19 18 18 19 18 19 10 10 11 11 12 13 14 15 16 17 17 17 19 18 18 18 19 18 18 19 10 11 11 12 13 14 15 16 17 17 17 19 18 18 18 18 18 18 18 18 18 18 18 18 18	T Speet T Sp	d (on 2 186PA 7 8 9 9 9 10 11 11 11 12 13 14 14 2 256PA 8 8 9 9 10 10 11 11 11 11 12 13 14 14 10 10 10 10 10 10 10 10 10 10 10 10 10	0" spate 6.3 7.0 8 8 9 10 10 11 11 12 13 0" Spate 6 6 7 7 8 8 8 9 10 10 10 11 11 12 13 30 30 10 10 10 10 10 10 10 10 10 10 10 10 10	30gPA 4.2 4.2 5.1 5.6 6 7 7 8 8 8 8 8 5 6 7 7 8 8 9 10 40gPA 40gPA 5 5 6	35gpa 3.6 4.0 4.4 4.8 5.1 5.1 5.4 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Class C C C C C C C C C C C C C C C C C C	0-06 VMD 322 308 296 287 279 267 253 267 253 349 242 0-08 VMD 367 338 317 300 286 274 247 240 247 240 248 247 448 458 428	#402' <141' 12% 15% 15% 17% 18% 20% 21% 22% 24% 26% 26% 4402' <141' 12% 15% 22% 26% 28% 28% 28% #402' <141' 17% 19% 19% 10% 10%	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 90% 90% 90% 90% 86% 89% 95% 95% 95% 95% 6600 86% 88% 88%	Class VC VC C C C C C C C C C C C C C C C	30-06 VMD 440 420 403 378 368 351 344 337 326 30-08 VMD 468 449 432 449 432 437 390 379 379 403 403 403 403 403 403 403 403	#4028 <141 4% 5% 6% 7% 8% 9% 10% 10% 10% 10% 11% 12% 12% 12% 12% 13% #4028 <141	88-06 <600 78% 81% 83% 85% 86% 89% 90% 54% 66% 63% 66% 69% 71% 75% 75% 88-10 <600	MR8 Class XC XC XC VC VC VC VC VC C MR8 Class UC	526 526 508 492 479 468 448 433 419 30-08 500 518 500 484 470 448 438 430 448 438 430 448 438 430 448 438 448 448 448 448 448 448 448 448	#4025 <141 2% 3% 4% 4% 4% 5% 5% 6% 7% 8% 9% 10% 11% 12% #4025 <141 12%	64% 67% 72% 73% 78% 78% 78% 80% 6600 63% 67% 69% 71% 69% 73% 73% 69% 74% 69% 74% 69% 74% 69% 74% 69% 74% 69% 74% 69% 69% 69% 69% 69% 69% 69% 69% 69% 69	Class XC	596 579 564 551 540 551 505 492 80-08 VMD 600 585 571 600 585 571 600 585 571 600 585 571 600 600 600 600 600 600 600 600 600 60	#4028 <141 1% 2% 2% 2% 2% 2% 2% 3% 3	51% 54% 57% 59% 61% 64% 66% 66% 68% 60% 62% 65% 66% 66% 60% 60% 69% 30-10 <600
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-06 Nozzles 80 -08 Nozzles	Flow us gpm 0.42 0.56 0.60 0.64 0.67 0.73 0.76 0.85 Flow us gpm 0.57 0.85 0.89 0.75 0.80 0.85 0.89 1.02 1.06 1.13 Flow us gpm 0.71 0.71 0.79 0.87 0.94	Boom psi 20 25 30 35 65 70 80 Boom psi 20 25 30 35 50 60 65 70 80 Boom psi 20 25 30 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	10 GPA 13 14 15 17 18 19 20 22 23 15 GPA 11 13 14 15 16 17 18 19 20 21 15 GPA 14 16 17 19 19	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 Spraye 18GPA 9 10 11 12 13 14 15 16 17 17 19 18 18 19 10 11 11 12 13 14 15 16 17 17 19 19 10 11 11 11 12 13 14 15 16 17 17 19 19 10 11 11 11 11 11 11 11 11 11 11 11 11	T Speet T Sp	d (on 2 186PA 10 11 11 12 13 14 10 10 11 12 12 13 13 14 10 12 12 13 13 13 13 13 13	0" space 6.3 8 8 9 10 10 11 11 11 12 13 0" space 6 6 6 7 7 7 8 8 8 9 9 10 10 10 11 10 11 11 11 11 11 11 11 11	30gpa 4.2 4.2 4.7 5.1 5.6 6 7 7 8 8 8 8 8 4.5 6 6 7 7 8 8 8 9 9 10 10 10 10 10 10 10 10 10 10 10 10 10	356PA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 7 7 7 7 8 8 8 8 8 8 8 5 9 9 9 9 9 9 9 9 9 9 9 9	Class C C C C C C C C C C C C C C C C C C C	0-06 VMD 322 308 296 287 273 267 257 253 249 242 0-08 VMD 367 338 317 249 242 242 242 242 244 244 244	#402' <141' 12% 15% 15% 15% 18% 20% 21% 22% 24% 25% 26% 27% 112% 19% 21% 21% 22% 2441 12% 28% 4402 2441 12% 19% 17% 19% 17% 19% 17% 19% 17% 19% 17% 19% 17% 19% 17% 19% 11% 11% 11% 11% 11% 11% 11% 11% 11	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 90% 90% 86% 89% 90% 86% 89% 95% 95% 95% 95% 4600 78% 80% 80% 83%	Class VC VC C C C C C C C C C C C C C C C C	00-06 VMD 440 420 403 390 378 368 351 344 326 00-08 VMD 516 490 379 368 349 432 417 390 379 368 349 5537 5512 490	#4028 < 141 4% 5% 6% 7% 8% 9% 10% 44028 < 141 7% 88 89 10% 112% 12% 13% 6% 7% 7%	88-06 <600 78% 81% 83% 84% 85% 86% 89% 89% <600 54% 66% 71% 74% 75% 66% 71% 66% 78% 66% 59% 66% 59% 66% 65% 50%	MR8 Class XC XC XC XC VC	526 500-06 VMD 526 508 492 479 468 448 440 440 VMD 540 540 433 419 500-08 484 470 479 479 479 479 488 433 419 419 440 440 440 440 440 440 440 440 440 44	#4025 <141 2% 3% 4% 4% 5% 6% #4025 <141 6% 11% 11% 11% 11% 12% 5% 6%	64% 67% 70% 72% 73% 80% 6600 63% 6600 63% 67% 69% 69% 69% 69% 69% 69% 69% 69% 69% 69	Class XC	596 579 564 551 551 505 492 80-08 VMD 619 600 585 571 559 531 523 509 501 VMD	#4028 <141 1% 2% 2% 2% 2% 2% 3% 3% 3	51% 54% 57% 59% 61% 66% 68% 30-08 <600 52% 55% 66% 66% 66% 62% 66% 66% 66% 66
-06 Nozzles 80 -08 Nozzles	Flow us gpm 0.42 0.52 0.56 0.60 0.64 0.67 0.73 0.76 0.79 0.85 Flow us gpm 0.57 0.69 0.75 0.80 0.85 1.02 1.06 1.13 Flow us gpm 0.71 0.79 0.87 0.79 0.87 0.94 1.00	Boom psi 20 25 30 35 40 45 50 60 65 70 80 Boom psi 20 25 30 35 40 45 50 60 65 30 35 40 45 50 60 65 70 80 Boom psi 20 30 35 40 45 45 40 45 45 40 45 40 40 40 40 40 40 40 40 40 40 40 40 40	10 GPA 13 14 15 17 18 19 20 15 GPA 14 16 17 19 20 20 20 15 GPA 14 16 17 19 20 20 20 20 20 20 20 20 20 20 20 20 20	Spraye Spraye	T Speet T Sp	d (on 2 186PA 7 8 9 9 9 10 11 11 11 12 13 13 14 2 256PA 7 8 8 9 9 10 11 11 11 12 12 13 13 14 14 10 10 10 11 11 11 11 11 11 11 11 11 11	0" spate 200cm 6.3 7.0 8 8 9 9 10 10 10 10 10 10 10 10 10 10 10 10 10	30gpa 4.2 4.7 5.1 5.6 6 7 7 8 8 8 8 8 8 9 10 10 10 10 10 5 6 6 7 7 7 8 8 7 7 7 8 8 7 7 7 8 7 7 8 7 8	35gpa 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 7 7 9 9 9 9 9 9 9 9 9 9 9 9 9	Class C C C C C C C C C C C C C C C C C C C	0-06 VMD 322 308 296 287 279 257 253 249 242 242 338 VMD 367 338 274 247 240 242 247 240 244 247 240 244 247 240 347 248 349 349 349 349 349 349 349 349 349 349	#402' <141' 12% 15% 15% 17% 18% 20% 21% 22% 24% 25% 26% 25% 26% 27% 4101' 12% 19% 29% #402' 21% 19% 19% 10% 11% 10% 10% 10% 10% 11% 10% 11% 11	70-06 <600 91% 91% 91% 91% 91% 90% 90% 90% 90% 80% 90% 90% 90% 89% 92% 93% 95% 95% 95% 86% 86% 88% 88% 88%	Class VC VC C C C C C C C C C C C C C C C C	378 368 351 368 378 368 351 351 368 378 368 378 368 378 368 351 369 490 468 449 490 468 449 379 379 516 400 400 400 400 400 400 400 400 400 40	#4028 < 141 4% 5% 6% 7% 7% 8% 9% 10% 10% 10% 44028 44028 11% 12% 6% 13% 6% 7% 8%	88-06 <600 78% 81% 83% 83% 85% 86% 89% 90% 54% 63% 66% 71% 75% 66% 71% <600 50% 55% 63% 63%	MRECLASS XC XC XC XC VC	526 500-06 VMD 526 508 492 479 468 448 440 433 419 80-08 540 540 484 470 448 438 415 80-10 80 80-10 80 80-10 80 80 80 80-10 80 80 80 80 80 80 80 80 80 80 80 80 80	#402s <141 2% 3% 4% 4% 4% 5% 5% 6% 6% 11% 112% #4021 112% 112% 5% 6% 6% 6%	64% 67% 70% 72% 73% 80% 66% 67% 69% 67% 69% 77% 80% 69% 69% 69% 69% 6600	Class XC	596 579 564 551 540 551 505 492 7MD 619 600 585 571 559 533 509 80-10 800 800 800 800 800 800 800 800 800 8	#4028 <141 1% 2% 2% 2% 2% 3% 3% 3% 3% 44028 4% 4% 5% 6% 6% #4021 4% 4% 5% 5% 5% 6% 5%	51% 54% 57% 59% 61% 66% 66% 66% 66% 66% 66% 600 52% 55% 66% 66% 66% 60% 62% 62% 65% 66% 66% 65% 66% 65% 65% 60% 60% 60% 60% 60% 60% 60% 60
-06 Nozzles 80 -08 Nozzles	Flow us gpm 0.42 0.67 0.75 0.80 0.89 0.98 1.02 1.08 1.02 1.06 0.87 0.87 0.87 0.87 0.87 0.87 0.87 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89	Boom psi 20 25 30 35 40 45 50 60 65 70 80 Boom psi 20 25 30 35 40 45 50 60 65 70 80 Boom psi 20 25 30 35 40 45 40 45 45	10 GPA 13 14 15 17 18 19 20 22 11 13 14 15 16 17 18 19 20 21 15 GPA 11 17 19 20 21 15 GPA 11 17 19 20 21 21	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 10 Spraye 11 12 13 14 15 16 17 17 17 17 19 Spraye 18 19 10 11 11 12 13 14 15 16 17 17 17 17 19 18 18 19 10 10 11 11 11 11 11 11 11 11 11 11 11	T Speet T Sp	d (on 2 186PA 7 7 8 9 9 9 10 11 12 13 13 14 4 (on 2 256PA 7 8 8 9 10 10 11 11 11 12 13 13 14 14 15 15 16 16 16 16 16 16 16 16 16 16 16 16 16	0" spate 6.3 7.0 8 8 9 10 10 11 11 12 13 0" Sogra 6 6 7 7 8 8 8 9 10 10 10 11 11 11 12 13 0" Sogra 6 10 10 10 10 10 10 10 10 11 11 11 11 11	30epa 4.2 4.2 4.7 5.1 5.6 6 7 7 8 8 8 335epa 4.8 5 6 6 7 7 8 8 9 9 10 10 17 7 8 8 8 9 9 10 10 10 10 10 10 10 10 10 10 10 10 10	356PA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Class C C C C C C C C C C C C C C C C C C C	0-06 VMD 322 322 308 296 287 279 273 267 257 257 249 242 0-08 348 317 300 286 274 247 240 233 0-10 VMD 458 408 408 386 386 371 358	#402' <141' 12% 15% 15% 17% 18% 20% 21% 22% 24% 26% 26% 26% 4402' 2141 12% 22% 28% 26% 27% 28% 402' 22% 1411 9% 15% 15% 15% 15%	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 80% 90% 90% 50-08 86% 89% 92% 93% 95% 95% 95% 95% 85% 85% 88% 88%	Class VC VC C C C C C C C C C C C C C C C C	0-06 VMD 440 420 403 378 368 351 326 0-08 VMD 516 490 488 449 432 490 VMD 579 575 512 490 472 472	#4028 <141 4% 5% 6% 7% 7% 8% 9% 10% 10% 11% 12% 11% 12% 113% #4028 <141 11% 6% 7% 7% 88% 88%	88-06 <600 78% 81% 83% 85% 86% 89% 90% 54% 66% 69% 674% 69% 66% 69% 69% 65% 66% 65% 66% 65%	MREClass XC XC VC VC VC C MRECLASS UC	526 500-06 VMD 526 508 492 479 468 444 440 433 419 30-08 50-08 484 430 448 438 430 448 438 430 448 438 430 448 500-06 500 400 400 400 400 400 400 400 400 400	#402s <141 2% 3% 4% 4% 4% 5% 5% 6% 6% 7% 8% 10% 11% 112% 1140 1244 15% 6% 6% 7%	64% 67% 72% 73% 76% 78% 80% 667% 69% 77% 78% 69% 67% 69% 62% 65% 65% 69%	Class XC	596 579 564 551 540 551 563 500 492 80-08 600 585 571 619 600 585 571 611 596 600 600 600 600 600 600 600 600 600 6	#4028 <141 1% 2% 2% 2% 2% 2% 3% 3% 3% 3% 4% 44028 <141 3% 4% 4% 4% 5% 6% 6% 6% 6% 6% 6% 6% 6%	51% 54% 57% 59% 61% 65% 66% 66% 68% 30-08 52% 55% 66% 66% 66% 66% 66% 66% 66
-06 Nozzles 80 -08 Nozzles	Flow us gpm 0.42 0.60 0.60 0.64 0.67 0.73 0.76 0.85 Flow us gpm 0.57 0.83 0.85 0.89 1.02 1.06 1.06 1.12	Boom psi 20 25 30 35 40 80 Boom psi 20 25 30 35 40 45 50 60 65 70 80 Boom psi 20 25 30 35 40 45 50 60 65 50 50 50 50 50 50 50 50 50 50 50 50 50	10 GPA 13 14 15 17 18 19 20 22 25 15 GPA 11 1 2 2 2 2 1 1 1 1 2 2 1 1 1 1 1 1 1	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 Spraye 9 10 11 12 13 14 15 16 17 17 17 17 17 19 Spraye 18 18 18 19 19 10 11 11 11 11 11 11 11 11 11 11 11 11	T Speet T Sp	d (on 2 186PA 7 8 9 9 9 10 11 11 12 256PA 8 8 9 10 11 12 13 13 14 10 12 12 13 13 14 10 12 12 13 13 14 10 12 13 13 14 15 15 15 15 15 15 15	0" space 6.3 8 8 9 10 10 11 11 12 13 0" space 6 6 7 7 8 8 9 10 10 11 11 12 13 0" space 6 6 7 7 8 8 9 10 10 10 10 10 10 10	30gpa 4.2 4.2 4.7 5.1 5.6 6 7 7 8 8 8 5 6 6 7 7 8 8 9 9 10 10 10 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	356PA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 7 8 406PA 4.2 4.7 5 6 6 6 7 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8	Class C C C C C C C C M M M M M M M M M M M M	0-06 VMD 322 308 296 287 279 273 267 257 249 242 0-08 367 338 317 264 244 240 233 0-10 VMD 458 408 371 386 371 386 371	#402' <141' 12% 15% 17% 18% 20% 21% 22% 24% 26% 27% 4402' 24% 15% 26% 27% 4402' 24% 4002' 24% 4002' 4004 12% 15% 17% 20% 21% 12% 15% 17% 15% 21% 12% 15% 15% 17% 15% 15% 17% 15% 15% 15% 15% 15% 16% 16%	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 86% 89% 90% 90% 90% 89% 90% 90% 86% 88% 88% 88%	Class VC VC C C C C C C C C C C C C C C C C	0-06 VMD 440 420 403 378 368 351 326 0-08 VMD 516 490 378 344 337 326 30-08 490 379 368 449 432 417 510 VMD 517 518 490 472 490 472 490 472 490 472	#4028 <141 4% 5% 6% 8% 9% 10% 10% 84028 <141 7% 8% 8% 99 110% 12% 12% 12% 12% 12% 141 6% 7% 7% 88% 99 89%	88-06 <600 78% 81% 83% 85% 86% 89% 89% 89% 66% 66% 66% 65% 65% 65% 65% 67%	MREClass XC XC XC VC VC VC C C MRECLASS UC XC XC XC VC UC	526 500-06 508 508 492 479 468 448 440 433 419 30-08 500 484 470 448 438 430 430 400 400 400 400 400 400 400 400	#402s <141 2% 33% 4% 4% 5% 5% 6% 7% 8% 99% 11% 11% 11% 5% 6% 6% 6% 6% 7% 7% 6% 7% 7% 6% 7% 7% 6% 7% 7%	64% 67% 70% 72% 73% 76% 80% 80-08 667% 69% 71% 80% 80-010 62% 65% 65% 65% 67% 65%	Class XC	596 579 596 579 564 551 540 551 505 492 30-08 VMD 619 600 585 571 559 539 531 523 509 VMD	#4028 <141 1% 2% 2% 2% 2% 2% 3% 3% 3% 3% 4028 <141	51% 54% 55% 55% 66% 68% 68% 80-00 55% 66% 68% 600 55% 66% 66% 65% 66% 60% 62% 66% 66% 67% 60% 62% 55% 66% 66% 66% 66% 66% 66% 66
-06 Nozzles 80 -08 Nozzles	Flow us gpm 0.42 0.69 0.75 0.85 0.89 0.98 1.06 1.13 Flow us gpm 0.71 0.79 0.85 0.89 0.98 1.00 1.06 1.12 0.79 0.87 0.69 1.06 1.13 Flow us gpm 0.71 0.79 0.87 1.00 1.06 1.12 1.22 1.22	Boom psi 20 25 30 35 40 45 50 66 65 70 80 Boom psi 20 25 30 35 40 45 50 66 65 70 80 Boom psi 20 50 60 65 65 70 80 Boom psi 20 66 65 70 80 Boom psi 20 65 65 65 65 66 66 66 66 66 66 66 66 66	10 GPA 13 14 15 18 19 20 22 24 16 6 17 19 20 21 22 24 4	Spraye Spraye	T Speet T Sp	d (on 2 186PA 7 8 9 9 9 10 11 11 11 12 13 13 14 4 (on 2 256PA 7 8 8 9 10 11 11 11 12 13 13 14 14 10 10 10 11 11 11 11 11 11 11 11 11 11	0" spate 200cm 6.3 7.0 8 8 9 9 10 10 10 10 10 10 10 10 10 10 10 10 10	30gpa 4.2 4.7 5.1 5.6 6 7 7 8 8 8 8 9 10 10 10 10 10 10 10 10 10 10 10 10 10	35gpa 3.6 4.0 4.4 4.8 5.1 5.1 5.4 6 6 7 7 7 7 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9	Class C C C C C C C M M M M M M M M M M M M M	0-06 VMD 322 308 296 287 279 257 253 249 242 242 367 338 VMD 286 274 240 241 240 241 241 242 242 242 243 367 367 367 367 37 47 48 48 48 48 48 48 48 48 48 48 48 48 48	#402 <141 12% 15% 15% 17% 20% 21% 22% 26% 25% 26% 25% 26% 27% 15% 19% 23% 244 10% 15% 19% 15% 11% 19% 144 144 15% 19% 15% 19% 144 144 15% 19% 184 184 1888	70-06 <600 91% 91% 91% 91% 91% 90% 90% 90% 90% 80% <600 86% 92% 93% 94% 95% 95% 95% 95% 95% 84% 84% 82% 82% 84% 85% 87%	Class VC VC C C C C C C C C C C C C C C C C	378 368 390 378 368 368 VMD 516 490 490 490 472 490 472 491 491 491 491 491 491 491 491 491 491	#4028 < 141 4% 5% 6% 7% 7% 8% 9% 10% 44028 4141 7% 8% 8% 10% 11% 6% 12% 12% 6% 7% 7% 88% 89% 10% 10% 11% 6% 7% 8% 8%	88-06 <600 78% 81% 83% 85% 86% 89% 89% 600 54% 66% 67% 63% 65% 65% 65% 65% 67% 71%	MREClass XC XC XC VC VC VC C MRECLASS UC UC UC UC UC UC UC XC	526 500-06 500-06 508 492 479 468 440 443 433 419 80-08 500-08 470 448 430 415 60-10 VMD	#402s <141 2% 3% 3% 4% 4% 6% 5% 6% 6% 11% 112% #402s <141 11% 6% 774 88 4402s <141 11% 6% 776 88 88 88 88	64% 67% 72% 73% 80% 69% 69% 69% 69% 600 63% 66% 69% 66% 69% 69% 69% 67% 66% 67% 67% 67% 80% 77% 80% 80% 77% 80% 80%	Class XC	596 579 564 551 540 551 551 505 492 600 685 571 559 533 509 0-10 VMD	#4028 <141 1% 2% 2% 2% 2% 2% 3% 3% 3	51% 54% 557% 59% 61% 66% 66% 66% 66% 66% 66% 66% 66% 66
-06 Nozzles 80 -08 Nozzles	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64 0.67 0.79 0.85 Flow us gpm 0.57 0.63 0.75 0.80 0.85 1.02 1.06 1.13 Flow us gpm 0.75 0.80 0.85 1.02 1.06 1.13 Flow us gpm 0.75 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.8	Boom psi 20 25 30 35 40 45 50 60 65 70 80 Boom psi 20 25 30 35 40 45 45 50 660 665 66 66 66 66 66 66 66 66 66 66 66 66	10 GPA 13 14 15 17 18 19 20 22 24 25 15 GPA 11 1 13 14 15 16 17 18 19 20 21 22 21 15 GPA 22 22 24 25 25 24 25 25 24 25 25 24 25 24 25	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 21	T Speet T Sp	d (on 2 186PA 7 8 9 9 9 10 11 11 11 12 13 13 14 2 256PA 7 8 8 9 9 9 10 10 11 11 11 11 12 13 13 14 14 10 10 10 10 10 10 10 10 10 10 10 10 10	0" spate 20cpa 6.3 7.0 8 8 9 10 10 11 11 12 13 0" Spate 0 10 10 10 11 11 12 13 0" spate 10 10 10 11 11 11 12 13 13 10 10 10 11 11 11 11 11 11 11 11 11 11	30gpa 4.2 4.7 5.1 5.6 6 7 7 8 8 8 8 9 10 10 7 8 8 9 9 10	35GPA 3.6 4.0 4.4 4.8 6 6 7 7 7 7 7 9 40GPA 4.2 4.7 5.6 6 6 6 7 7 7 7 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9	Class C C C C C C C M M M M M M M M M M M M M	0-06 VMD 322 308 296 287 253 267 253 249 242 242 30-08 VMD 367 338 249 242 242 242 242 243 323 23 0-10 8 40 243 23 323 349 348 40 349 349 349 349 349 349 349 349 349 349	#402' <141' 12% 15% 15% 17% 18% 20% 21% 22% 24% 26% 26% 27% 26% 112% 19% 29% 402' <141' 12% 15% 20% 20% 15% 20% 15% 15% 15% 15% 15% 15% 15% 15% 15% 15	70-06 <600 91% 91% 91% 91% 91% 90% 90% 90% 90% 90% 90% 90% 89% <600 86% 89% 92% 93% 95% 95% 96% 80% 80% 88% 88% 88% 88%	Class VC VC C C C C C C C C C C C C C C C C	0-06 VMD 440 420 403 378 368 351 326 0-08 VMD 516 490 468 449 432 417 390 379 512 490 VMD 537 512 490 472 455 441 415 404	#4028 <141 4% 5% 6% 7% 8% 9% 10% 10% 10% 8% #4028 <141	88-06 <600 78% 81% 83% 85% 86% 89% 89% 89% 88-08 <54% 63% 66% 71% <600 55% 66% 55% 66% 67% 75% 55% 65% 67% 72%	MRECClass XC XC XC XC VC VC VC C C UC UC UC XC	526 526 526 528 479 468 448 443 419 440 433 419 540 540 540 540 540 540 540 540	#402s <141 2% 3% 4% 4% 4% 5% 5% 6% 6% 402s <141 11% 11% 12% 4141 55% 6% 6% 7% 7% 8% 8%	64% 67% 72% 73% 80% 6600 6600 6600 6600 6600 6600 6600	Class XC	596 579 564 551 540 551 563 505 492 600 585 571 599 539 531 509 540 521 505 492 500 500 500 500 500 500 500 500 500 50	#4028 <141 1% 2% 2% 2% 2% 3% 3% 3% 3% 3% 440 4% 4% 4% 5% 5% 6% 6% 6% 6% 6% 6% 6%	51% 54% 59% 61% 66% 68% 66% 68% 66% 68% 66% 68% 60% 55% 55% 55% 55% 55% 55% 60% 66% 66% 66% 66% 66% 66% 66% 66% 66
-06 Nozzles 80 -08 Nozzles	Flow us gpm 0.42 0.60 0.60 0.60 0.60 0.79 0.85 Flow us gpm 0.57 0.63 0.69 0.75 0.80 0.85 0.89 0.98 1.02 1.06 1.13 Flow us gpm 0.71 0.79 0.87 0.94 1.00 1.06 1.12 1.22 1.27 1.32	Boom psi 20 25 30 35 40 45 50 66 65 70 80 Boom psi 20 25 30 35 40 45 50 66 65 70 80 Boom psi 20 50 60 65 65 70 80 Boom psi 20 66 65 70 80 Boom psi 20 65 65 65 65 66 66 66 66 66 66 66 66 66	10 GPA 13 14 15 17 18 19 20 22 24 25 15 GPA 11 1 1 2 2 1 1 6 1 7 1 9 2 0 2 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 11 12 13 14 15 16 17 17 17 17 17 19 Spraye 18 18 19 20 10 20 20 20 20 20 20 20 20 20 20 20 20 20	T Speed 156PA 8	d (on 2 186PA 7 8 9 9 9 10 11 11 11 12 13 13 14 4 (on 2 256PA 7 8 8 9 10 11 11 11 12 13 13 14 14 10 10 10 11 11 11 11 11 11 11 11 11 11	0" spate 200cm 6.3 7.0 8 8 9 10 10 11 11 12 13 0 "Spate 3 0 "Spate 3 0 10 10 11 11 12 13 0 "Spate 3 0 10 10 10 10 11 11 1	30gpa 4.2 4.7 5.1 5.6 6 7 7 8 8 8 8 9 10 10 10 10 10 10 10 10 10 10 10 10 10	356PA 3.6 4.0 4.4 4.8 5.1 5.4 6 6 7 7 7 7 8 8 8 8 8 5 5 6 6 6 7 7 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8	Class C C C C C C C C C C C C C C C C C C C	0-06 VMD 322 308 296 287 279 273 267 257 267 257 349 242 0-08 317 330 286 274 240 243 300 VMD 458 405 386 348 323 321 358 346 328 323 313	#402' <141' 12% 15% 15% 17% 18% 20% 21% 22% 24% 26% 26% 26% 4402' 2141 12% 15% 21% 22% 4402' 2440' 2440' 2440' 15% 15% 15% 15% 16% 19% 15% 18% 19% 19%	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 80% 90% 90% 80% 90% 85% 95% 95% 95% 85% 85% 88% 88%	Class VC VC C C C C C C C C C C C C C C C C	0-06 VMD 440 420 433 368 351 326 80-08 VMD 516 490 488 449 432 490 70 VMD 537 512 490 472 495 441 415 415 494 394	#4028 < 141 4% 5% 6% 7% 7% 8% 9% 10% 10% 8% 44028 < 141 11% 12% 12% 12% 12% 44028 < 141 14 6% 7% 7% 8% 8% 9% 10%	88-06 <600 78% 81% 83% 85% 86% 89% 90% 66% 66% 67% 71% 600 55% 59% 66% 69% 69% 69% 69% 69% 69% 71% 600 60% 71% 75% 76% 74%	MRECClassS XC XC XC VC VC VC VC VC VC VC	526 500-06 VMD 526 508 492 479 468 4440 433 419 80-08 50-08 484 430 448 430 430 448 438 430 419 500-10 VMD 540 488 438 438 448 448 448 448 449 449 449 449 449 44	#402s <141 2% 3% 4% 4% 5% 5% 6% 7% 8% 9% 10% 11% 112%	64% 67% 70% 72% 73% 76% 80% 6600 63% 67% 69% 71% 78% 80% 69% 71% 66% 66% 66% 67% 66% 67% 78% 78% 78% 78% 78% 78% 78% 78% 78% 7	Class XC	50-06 VMD 596 579 564 551 540 551 513 505 492 80-08 VMD 619 600 585 571 523 509 611 596 611 596 611 596 611 596 582 571 561 544 5337	#4028 <141 1% 2% 2% 2% 2% 2% 2% 2	51% 54% 55% 66% 66% 68% 68% 600 52% 65% 66% 66% 66% 66% 66% 66% 67% 55% 55% 55% 58% 60% 67% 55% 66% 66% 66% 66% 66% 66% 66% 66% 66
-06 Nozzles 80 -08 Nozzles	Flow us gpm 0.42 0.47 0.52 0.56 0.60 0.64 0.67 0.79 0.85 Flow us gpm 0.57 0.63 0.75 0.80 0.85 1.02 1.06 1.13 Flow us gpm 0.75 0.80 0.85 1.02 1.06 1.13 Flow us gpm 0.75 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.8	Boom psi 20 25 30 35 40 45 50 60 65 70 80 Boom psi 20 25 30 35 40 45 45 50 660 665 66 66 66 66 66 66 66 66 66 66 66 66	10 GPA 13 14 15 17 18 19 20 22 24 25 15 GPA 11 1 13 14 15 16 17 18 19 20 21 22 21 15 GPA 22 22 24 25 25 24 25 25 24 25 25 24 25 24 25	Spraye 12.5 10 11 12 13 14 15 16 17 18 19 20 21	T Speet T Sp	d (on 2 186PA 7 8 9 9 9 10 11 11 11 12 13 13 14 2 256PA 7 8 8 9 9 9 10 10 11 11 11 11 12 13 13 14 14 10 10 10 10 10 10 10 10 10 10 10 10 10	0" spate 20cpa 6.3 7.0 8 8 9 10 10 11 11 12 13 0" Spate 0 10 10 10 11 11 12 13 0" spate 10 10 10 11 11 11 12 13 13 10 10 10 11 11 11 11 11 11 11 11 11 11	30gpa 4.2 4.7 5.1 5.6 6 7 7 8 8 8 8 9 10 10 7 8 8 9 9 10	35GPA 3.6 4.0 4.4 4.8 6 6 7 7 7 7 7 9 40GPA 4.2 4.7 5.6 6 6 6 7 7 7 7 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9	Class C C C C C C C M M M M M M M M M M M M M	0-06 VMD 322 308 296 287 279 273 267 257 267 257 349 242 0-08 317 330 286 274 240 243 300 VMD 458 405 386 348 323 321 358 346 328 323 313	#402' <141' 12% 15% 15% 17% 18% 20% 21% 22% 24% 26% 26% 27% 26% 112% 19% 29% 402' <141' 12% 15% 20% 20% 15% 20% 15% 15% 15% 15% 15% 15% 15% 15% 15% 15	70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 90% 80% 90% 90% 80% 90% 85% 95% 95% 95% 85% 85% 88% 88%	Class VC VC C C C C C C C C C C C C C C C C	0-06 VMD 440 420 433 368 351 326 80-08 VMD 516 490 488 449 432 490 70 VMD 537 512 490 472 495 441 415 415 494 394	#4028 < 141 4% 5% 6% 7% 7% 8% 9% 10% 10% 8% 44028 < 141 11% 12% 12% 12% 12% 44028 < 141 14 6% 7% 7% 8% 8% 9% 10%	88-06 <600 78% 81% 83% 85% 86% 89% 90% 66% 66% 67% 71% 600 55% 59% 66% 69% 69% 69% 69% 69% 69% 71% 600 60% 71% 75% 76% 74%	MRECClassS XC XC XC VC VC VC VC VC VC VC	526 526 526 528 479 468 448 443 419 440 433 419 540 540 540 540 540 540 540 540	#402s <141 2% 3% 4% 4% 4% 5% 5% 6% 6% 402s <141 11% 11% 12% 4141 55% 6% 6% 7% 7% 8% 8%	64% 67% 72% 73% 80% 6600 6600 6600 6600 6600 6600 6600	Class XC	596 579 564 551 540 551 563 505 492 600 585 571 599 539 531 509 540 521 505 492 500 500 500 500 500 500 500 500 500 50	#4028 <141 1% 2% 2% 2% 2% 2% 2% 2	51% 54% 59% 61% 66% 68% 66% 68% 66% 68% 66% 68% 60% 55% 55% 55% 55% 55% 55% 60% 66% 66% 66% 66% 66% 66% 66% 66% 66

NOTE: 'SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. 'Shown application information is based on water @ 80°F in a controlled environment and should not be considered actual. Information is provided for comparison to other Combo-Jet® spray tips, for educational purposes only. Repeat testing results can vary.

COMBO-JET 80° Spray Tips - Standard Sprayer Systems

	Flow	Boom						cing) @	_		0-125	_				#4028	_	_	_			_		#4028	_
	us gpm 0.99	psi 25	20gpa 15	25gpa 12	30gpa 10	35gpa 8	4UGPA	45gpa	50gpa 6	XC	VMD 433	<141 10%	<600 79%	Class		<141 6%	<600 51%	Class	VMD	<141	<600	Class	VMD	<141	<600
	1.08	30	16	13	11	9	8	7	6	XC	413	11%	81%	UC	509	7%	55%	UC	585	5%	56%	UC	624	4%	50%
80	1.17	35	17	14	12	10	9	8	7	VC	397	12%	82%	UC	490	8%	58%	UC	569	6%	58%	UC	609	4%	52%
-125	1.25	40	19	15	12	11	9	8	7	VC	383	13%	83%	XC	474	8%	61%	UC	556	6%	60%	UC	595	5%	54%
Nozzles	1.33	45	20	16	13	11	10	9	8	С	372	14%	84%	XC	460	9%	63%	UC	545	7%	62%	UC	584	5%	56%
	1.40	50	21	17	14	12	10	9	8	C	362	14%	85%	XC	447	9%	65%	UC	535	7%	63%	UC	574	5%	57%
	1.53	60	23	18	15	13	11	10	9	C	345	15%	87% 87%	XC	425	10%	68%	UC	519	8%	66% 67%	UC	557	6%	59%
	1.59 1.65	65 70	25	20	16 16	14	12	11	10	C	338 331	16% 16%	88%	XC	416 407	10% 11%	69% 70%	XC	511 505	8% 8%	67%	UC	549 543	6% 6%	60%
	1.77	80	26	21	18	15	13	12	11	M	320	17%	88%	VC	391	11%	72%	XC	493	9%	69%	UC	531	6%	63%
	Flow	Boom		Spraye	_			cing) @			30-15	#402	70-15		30-15	#402	88-15		30-15		90-15		80-15	#402	80-15
	us gpm	psi	25 _{GPA}	30gpa	35 _{GPA}	40 _{GPA}	45gpa	50gpa	55gpa	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	1.19	25	14	12	10	9	8	7	6	XC	434	9%	78%	UC		5%	43%								
	1.30	30	15	13	11	10	9	8	7	XC	412	10%	79%	UC	554	6%	47%			7%	66%		637	3%	48%
80	1.40	35	17	14	12	10	9	8	8	XC	394	11%	80%	UC	535	6%	51%	UC	495	8%	69%	UC	620	3%	51%
-15 Nozzles	1.50 1.59	40 45	18	15 16	13	11	10	9 10	8	VC C	379 366	12% 13%	81% 82%	UC	519 505	6% 7%	53% 56%		480 467	8% 9%	70% 72%	UC	605 592	3% 4%	53% 55%
INUZZICS	1.68	50	20	17	14	12	11	10	9	C	355	14%	82%	UC	492	7%	58%	XC	456	9%	73%	UC	581	4%	57%
	1.84	60	22	18	16	14	12	11	10	Č	337	15%	83%	XC	471	7%	61%		438	10%	75%	UC	562	4%	59%
	1.91	65	23	19	16	14	13	11	10	М	329	16%	84%	XC	461	7%	62%	XC	430	11%	76%	UC	554	4%	61%
	1.98	70	24	20	17	15	13	12	11	M	322	17%	84%	XC	452	8%	63%	XC	422	11%	77%	UC	547	4%	62%
	2.12	80	25	21	18	16	14	13	11	M	310	18%	85%	XC	436	8%	65%	VC	410	12%	78%	UC	534	5%	63%
	Flow	Boom	30gpa					cing) @		Class	30-20	#402 <141	70-20		30-20		88-20		30-20 VMD	_	90-20 <600		30-20 VMD		80-20
	us gpm 1.58	25	16	35 _{GPA}	40 _{GPA}	45 _{GPA}	50gpa 9	55gpa 9	60gpa	UC	VMD 483	8%	<600 71%		574	<141 5%	<600 44%	Uldss	VMD	<141	<000	Uldss	VMD	<141	<60
	1.73	30	17	15	13	11	10	9	9	XC	460	9%	73%	UC	551	5%	48%	UC	564	5%	58%	UC	628	3%	50%
80	1.87	35	19	16	14	12	11	10	9	XC	442	10%	75%	UC	532	6%	51%	UC	542	5%	62%	UC	606	3%	54%
-20	2.00	40	20	17	15	13	12	11	10	XC	427	11%	76%	UC	515	6%	54%	UC	523	6%	64%	UC	587	4%	56%
Nozzles	2.12	45	21	18	16	14	13	11	11	XC	415	11%	78%	UC	500	6%	56%		508	7%	66%	UC	571	4%	59%
	2.24	50	22	19	17	15	13	12	11	VC	403	12%	79%	UC	487	7%	58%	UC	494	7%	68%	UC	556	4%	61%
	2.45 2.55	60 65	25	21	18 19	16	15 15	13 14	12	C	385 377	13% 13%	81% 81%	XC	464 454	7% 7%	62% 63%	XC	472 462	8% 8%	71% 72%	UC	533 523	5% 5%	64%
	2.65	70	26	22	20	17	16	14	13	C	370	14%	82%	XC	444	7%	64%		453	8%	73%	UC	514	5%	66%
	2.83	80	28	24	21	19	17	15	14	Č	357	15%	83%	XC	427	8%	66%		438	9%	74%	UC	498	5%	68%
	Flow	Boom		Spraye	r Spee		0" spa	cing) @		ER8	30-25	#402	70-25		0-25		88-25		30-25		90-25		80-25	#402	
	us gpm	psi	35gpa					60gpa					<600					Class	VMD	<141	<600	Class	VMD	<141	<60
	1.98	25	17	15	13	12	11	10	8	UC		9%	70%		532	5%	51%	110	001	40/	====	110	0==	001	100/
00	2.17	30	18	16	14	13	12	11	9	XC	462	10%	72%	UC	511	5%	54%		604	4%	55%		657	3%	46%
80 -25	2.34	35 40	20	17	15 17	14	13	12 12	10	XC	443	10%	74%	UC	494	6%	57% 59%	UC	583	4%	58% 60%	UC	635	3%	49% 52%
Nozzles	2.65	45	23	20	18	15 16	14	13	11	VC	427 414	11% 12%	75% 76%	XC	479 466	6% 7%	61%	UC	566 552	4% 5%	62%	UC	617 601	3%	55%
NOZZIOS	2.80	50	24	21	18	17	15	14	12	VC	402	12%	77%	XC	454	7%	62%	UC	539	5%	63%	UC	587	3%	57%
	3.06	60	26	23	20	18	17	15	13	C	383	13%	79%	XC	434	7%	65%	UC	518	5%	66%	UC	563	4%	60%
	3.19	65	27	24	21	19	17	16	14	С	375	14%	79%	XC	425	8%	66%	UC	508	6%	67%	UC	553	4%	61%
				0.5																					
	3.31	70	28	25	22	20	18	16	14	C	367	14%	80%	XC	417	8%	67%	UC	500	6%	68%	UC	544	4%	
	3.54	80	30	26	23	21	19	18	15	С	354	15%	81%	XC	402	8%	68%	UC	485	6%	69%	UC	544 528	4%	64%
	3.54 Flow	80 Boom	30	26 Spraye	23 r Spee	21 d (on 2	19 20" spa	18 cing) @	15	C ER8	354 30-30	15% #402	81% 70-30	XC SR8	402 80-30	8% #402	68% 38-30	UC MR8	485 30-30	6% #4 02	69% 90-30	UC UC DR8	544 528 30-30	4% #402	64% 80-30
	3.54	80	30	26 Spraye	23	21 d (on 2	19 20" spa	18	15	C ER8	354	15% #402	81%	XC SR8	402 80-30	8%	68% 38-30	UC MR8	485 30-30	6% #4 02	69%	UC UC DR8	544 528 30-30	4%	64% 80-30
	3.54 Flow us gpm 2.37 2.60	80 Boom psi	30 40gpa	26 Spraye 50gpa	23 r Spee 60gpa	21 d (on 2 70gpa	19 20" spa 80gpa	18 cing) @ 90gpa 8 9	15	C ER8 Class	354 30-30 VMD	15% #402 <141 5% 6%	81% 70-30 <600 67% 69%	SR8 Class UC	402 80-30 VMD	8% #402	68% 88-30 <600 54%	UC MR8 Class UC	485 30-30	6% #4 02	69% 90-30 <600 55%	UC UC DR8 Class	544 528 30-30	4% #402 <141 2%	64% 80-30 <60
80	3.54 Flow us gpm 2.37 2.60 2.81	80 Boom psi 25 30 35	30 40gpa 18 19 21	26 Spraye 50gpa 14 15 17	23 r Spee 60gpa 12 13 14	21 d (on 2 70gpa 10 11 12	19 80" spa 80gpa 9 10	18 cing) @ 90gpa 8 9	15 100 7 8 8	C ER8 Class UC UC XC	354 80-30 VMD 506 481 461	15% #402 <141 5% 6% 7%	81% 70-30 <600 67% 69% 71%	XC SR8 Class UC UC	402 80-30 VMD 508 490	8% #402 <141 5% 5%	68% 88-30 <600 54% 57%	UC MR8 Class UC UC	485 80-30 VMD 591 572	6% #402 <141 4% 4%	69% 90-30 <600 55% 58%	UC UC DR8 Class UC UC	544 528 30-30 VMD 654 623	4% #402 <141 2% 2%	64% 80-30 <60 47% 51%
-30	3.54 Flow us gpm 2.37 2.60 2.81 3.00	80 Boom psi 25 30 35 40	30 40gpa 18 19 21 22	26 Spraye 50gpa 14 15 17	23 r Spee 60gpa 12 13 14 15	21 d (on 2 70gpa 10 11 12 13	19 80° spa 80° spa 9 10 10	18 cing) @ 90gpa 8 9 9	15 100 7 8 8 9	C ERS	354 30-30 VMD 506 481 461 444	15% #402 <141 5% 6% 7%	81% 70-30 <600 67% 69% 71% 73%	XC SR8 Class UC UC XC	402 80-30 VMD 508 490 474	8% #402 <141 5% 5% 6%	68% 88-30 <600 54% 57% 59%	UC MR8 Class UC UC UC	485 80-30 VMD 591 572 556	6% #4024 <141 4% 4% 4%	69% 90-30 <600 55% 58% 60%	UC DR8 Class UC UC UC	544 528 30-30 VMD 654 623 597	4% #402 <141 2% 2% 3%	64% 80-30 <60 47% 51% 54%
	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18	80 Boom psi 25 30 35 40 45	30 40gpa 18 19 21 22 24	26 Spraye 50gPA 14 15 17 18	23 r Spee 60gpa 12 13 14 15 16	21 d (on 2 70gpa 10 11 12 13 14	19 20" spa 80gpa 9 10 10 11	18 cing) @ 90gpa 8 9 9	15 100 7 8 8 9	C ER8 Class UC UC XC XC	354 30-30 VMD 506 481 461 444 430	15% #402 <141 5% 6% 7% 7% 8%	81% 70-30 <600 67% 69% 71% 73% 74%	XC SR8 Class UC UC XC XC	402 80-30 VMD 508 490 474 461	8% #402 <141 5% 5% 6% 6%	68% 88-30 <600 54% 57% 59% 61%	UC MR8 Class UC UC UC	485 30-30 VMD 591 572 556 542	6% #402 <141 4% 4% 4% 5%	69% 90-30 <600 55% 58% 60% 62%	UC DR8 Class UC UC UC UC	544 528 30-30 VMD 654 623 597 575	4% #402 <141 2% 2% 3% 3%	64% 80-30 <60 47% 51% 54% 57%
-30	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35	80 Boom psi 25 30 35 40 45	30 40gpa 18 19 21 22 24 25	26 Spraye 50gpa 14 15 17 18 19 20	23 r Spee 60gpa 12 13 14 15 16	21 d (on 2 70gpa 10 11 12 13 14 14	19 0" spa 80gpa 9 10 10 11 12 12	18 cing) @ 90gpa 8 9 9 10	100 7 8 8 9 10	C ER8 Class UC UC XC XC XC	354 80-30 VMD 506 481 461 444 430 417	15% #402 <141 5% 6% 7% 7% 8% 9%	81% 70-30 <600 67% 69% 71% 73% 74% 75%	VC SR8 Class UC UC XC XC	402 80-30 VMD 508 490 474 461 449	8% #402 <141 5% 5% 6% 6%	68% 38-30 <600 54% 57% 59% 61% 62%	UC MR8 Class UC UC UC UC	485 30-30 VMD 591 572 556 542 530	4% 4% 4% 5%	69% 90-30 <600 55% 58% 60% 62% 64%	UC DR8 Class UC UC UC UC UC	544 528 30-30 VMD 654 623 597 575 556	4% #402 <141 2% 2% 3% 3% 3%	64% 80-30 <60 47% 51% 54% 57% 59%
-30	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18	80 Boom psi 25 30 35 40 45	30 40gpa 18 19 21 22 24	26 Spraye 50gPA 14 15 17 18	23 r Spee 60gpa 12 13 14 15 16	21 d (on 2 70gpa 10 11 12 13 14	19 20" spa 80gpa 9 10 10 11	18 cing) @ 90gpa 8 9 9	15 100 7 8 8 9	C ER8 Class UC UC XC XC	354 30-30 VMD 506 481 461 444 430	15% #402 <141 5% 6% 7% 7% 8%	81% 70-30 <600 67% 69% 71% 73% 74%	XC SR8 Class UC UC XC XC	402 80-30 VMD 508 490 474 461	8% #402 <141 5% 5% 6% 6%	68% 88-30 <600 54% 57% 59% 61%	UC MR8 Class UC UC UC	485 30-30 VMD 591 572 556 542	6% #402 <141 4% 4% 4% 5%	69% 90-30 <600 55% 58% 60% 62%	UC DR8 Class UC UC UC UC	544 528 30-30 VMD 654 623 597 575	4% #402 <141 2% 2% 3% 3%	64% 80-30 <60 47% 51% 54% 57% 59% 63%
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-30	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 3.82 3.97 4.24 Flow us gpm	80 Boom psi 25 30 35 40 45 50 60 65 70 80 Boom psi	30 40gpa 18 19 21 22 24 25 27 28 29 32 50gpa	26 Spraye 50gpa 14 15 17 18 19 20 22 23 24 25 Spraye 60gpa	23 r Spee 60gpa 12 13 14 15 16 17 18 19 20 21 r Spee 70gpa	21 d (on 2 70 GPA 10 11 12 13 14 14 16 16 17 18 d (on 2 80 GPA	19 20" spa 80gpa 9 10 11 12 12 14 14 15 16 20" spa 90gpa	18 cing) @ 90gpa 8 9 10 11 11 12 13 14 cing) @ 100	15 100 7 8 8 9 10 10 11 11 12 13	C ERS Class UC UC XC XC XC XC XC XC C XC XC C XC	354 80-30 VMD 506 481 461 444 430 417 397 388 380 366 80-40 VMD	#402 <141 5% 6% 7% 7% 8% 9% 10% 10% 11% #402 <141	81% 70-30 <600 67% 69% 71% 73% 74% 75% 77% 77% 78% 79% 70-40 <600	XC SR8 Class UC UC XC XC XC XC XC XC CC XC CC XC XC XC XC	508 490 474 461 449 429 421 414 400 80-40 VMD	8% #402: <141 5% 6% 6% 6% 7% 7% 7% 4402: <141	54% 57% 59% 61% 62% 66% 67% 69% 38-40 <600	UC MRS Class UC	485 30-30 VMD 591 572 556 542 530 510 501 493 480 30-40 VMD	6% #402 <141 4% 4% 5% 5% 5% 6% 6% 4402 <141	55% 55% 60% 62% 64% 67% 68% 71% 90-40 <600	UC UC Class UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	64% 80-30 <60 47% 51% 54% 57% 63% 65% 66%
-30	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 3.82 3.97 4.24 Flow us gpm 3.74	80 Boom psi 25 30 35 40 45 50 60 65 70 80 Boom psi	30 40gpa 18 19 21 22 24 25 27 28 29 32 50gpa 22	26 Spraye 50gpa 14 15 17 18 19 20 22 23 24 25 Spraye 60gpa 19	23 r Spee 60gpa 12 13 14 15 16 17 18 19 20 21 r Spee 70gpa 16	21 d (on 2 70 GPA 10 11 12 13 14 14 16 16 17 18 d (on 2 80 GPA 14	19 20" spa 80gpa 9 10 10 11 12 12 14 14 15 16 20" spa 90gpa 12	18 cing) @ 90GPA 8 9 10 11 11 12 13 14 cing) @ 100 11	15 100 7 8 8 9 10 10 11 11 12 13	C ERS Class UC XC	354 30-30 VMD 506 481 461 444 430 417 397 388 380 366 30-40 VMD 460	15% #402 <141 5% 6% 7% 7% 8% 9% 10% 10% 11% #402 <141 7%	81% 70-30 <600 67% 69% 71% 73% 74% 75% 77% 77% 78% 79% 70-40 <600 71%	VC SRE Class UC VC XC XC XC XC XC XC XC XC XC XC XC	508 490 474 461 449 429 421 414 400 30-40 VMD 481	8% #402 <141 5% 6% 6% 6% 7% 7% 7% #402 <141 5%	54% 57% 59% 61% 62% 66% 67% 69% 38-40 <600 58%	UC MRS Class UC	591 572 556 542 530 510 501 493 480 30-40 VMD 541	6% #402 <141 4% 4% 5% 5% 5% 6% 6% #402 <141 4%	69% 90-30 <600 55% 58% 60% 62% 64% 67% 68% 71% 90-40 <600 61%	UC UC Class UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	64% 80-30 <60 47% 51% 54% 57% 59% 63% 65%
-30	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 3.82 3.97 4.24 Flow us gpm	80 Boom psi 25 30 35 40 45 50 60 65 70 80 Boom psi	30 40gpa 18 19 21 22 24 25 27 28 29 32 50gpa	26 Spraye 50gpa 14 15 17 18 19 20 22 23 24 25 Spraye 60gpa	23 r Spee 60gpa 12 13 14 15 16 17 18 19 20 21 r Spee 70gpa	21 d (on 2 70 GPA 10 11 12 13 14 14 16 16 17 18 d (on 2 80 GPA	19 20" spa 80gpa 9 10 11 12 12 14 14 15 16 20" spa 90gpa	18 cing) @ 90gpa 8 9 10 11 11 12 13 14 cing) @ 100	15 100 7 8 8 9 10 10 11 11 12 13	C ERS Class UC UC XC XC XC XC XC XC C XC XC C XC	354 30-30 VMD 506 481 461 444 430 417 397 388 380 366 30-40 VMD 460	#402 <141 5% 6% 7% 7% 8% 9% 10% 10% 11% #402 <141	81% 70-30 <600 67% 69% 71% 73% 74% 75% 77% 77% 78% 79% 70-40 <600	SR8 Class UC XC	508 490 474 461 449 429 421 414 400 80-40 VMD	8% #402: <141 5% 6% 6% 6% 7% 7% 7% 4402: <141	54% 57% 59% 61% 62% 66% 67% 69% 38-40 <600	UC MR8 Class UC UC UC UC UC UC UC UC UC UC UC UC	591 572 556 542 530 510 501 493 480 30-40 VMD 541	6% #402 <141 4% 4% 5% 5% 5% 6% 6% 4402 <141	55% 55% 60% 62% 64% 67% 68% 71% 90-40 <600	UC UC Class UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	64% 80-30 <60 47% 51% 54% 57% 59% 63% 65%
-30 Nozzles 80 -40	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 3.82 3.97 4.24 Flow us gpm 3.74 4.00 4.24 4.47	80 Boom psi 25 30 35 40 45 50 60 65 70 80 Boom psi 35 40	30 40gpa 18 19 21 22 24 25 27 28 29 32 50gpa 22 24 25 27	26 Spraye 50gpa 14 15 17 18 19 20 22 23 24 25 Spraye 60gpa 19 20 21 22	23 r Spee 60gpa 12 13 14 15 16 17 18 19 20 21 r Spee 70gpa 16 17 18	21 d (on 2 70 GPA 10 11 12 13 14 14 16 16 17 18 d (on 2 80 GPA 14 15 16 17	19 20" spa 80gpa 9 10 11 12 12 14 14 15 16 20" spa 90gpa 12 13	18 cing) @ 90gpa 8 9 10 11 11 12 13 14 cing) @ 100 11 12	15 100 7 8 8 9 10 11 11 12 13 120 9 10 11 11	C ER8 Class UC UC XC	354 30-30 VMD 506 481 461 444 430 417 397 388 380 366 80-40 VMD 460 444 430 418	15% #402 <141 5% 6% 7% 8% 9% 10% 11% #402 <141 7% 8% 9%	81% 70-30 <600 67% 69% 71% 73% 74% 75% 77% 78% 79% 600 71% 73% 74% 75%	XC SR8 Class UC UC XC	508 490 474 461 449 429 421 414 400 80-40 VMD 481 467 455 445	8% #402 <141 5% 6% 6% 6% 6% 7% 7% #402 <141 5% 5% 6%	68% 38-30 <600 54% 57% 61% 62% 65% 66% 67% 69% <600 58% 60% 60% 62% 63%	UC MR8 Class UC UC UC UC UC MR8 Class UC	485 30-30 VMD 591 572 556 542 530 510 493 480 VMD 541 524 510 498	6% #402* <141 4% 4% 5% 5% 5% 6% 6% #402* <141 4%	69% 90-30 <600 55% 60% 62% 64% 67% 68% 69% 71% <600 61% 63% 65% 66%	UC UC Class UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	64% 80-30 <60 51% 54% 57% 63% 65% 66%
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-30 Nozzles 80 -40	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 4.24 Flow us gpm 3.74 4.00 4.24 4.47 4.90 5.10 5.29 7.07	80 Boom psi 25 30 45 50 60 65 70 80 Boom psi 35 40 45 50 60 65 70 45 80 80 80 80 80 80 80 80 80 80 80 80 80	30 40 _{GPA} 18 19 21 22 24 25 27 28 29 32 50 _{GPA} 22 24 25 27 29 30 31 42	26 Spraye 50gra 14 15 17 18 19 20 22 22 23 24 25 Spraye 60gra 9 20 21 22 22 23 33 34 24 25 36 36 36 36 36 36 36 36 36 36 36 36 36	23 r Spee 60gpA 12 13 14 15 16 17 18 19 20 21 17 Spee 70gpA 16 17 18 19 21 22 21 22 30	21 d (on 2 70graph 10 11 12 13 14 14 16 16 17 18 d (on 2 80graph 15 16 17 18 19 20 26	19 0" spa 80gra/ 9 10 10 10 11 12 12 12 14 14 15 16 0" spa 90gra/ 13 14 15 16 17 17 17 17	18 (cing) @ 90 (GPA) 8 8 9 9 10 11 11 12 13 13 14 (cing) @ 100 11 12 13 13 15 15 16 21	15 100 7 8 8 9 10 10 11 11 12 13 120 9 10 11 11 11 12 13 13 18	C ER8 UC UC XC	354 30-30 VMD 506 481 444 430 417 397 388 380 VMD 506 60-40 VMD 460 444 430 418 398 390 382 390 382 389	15% #402 <141 5% 6% 7% 7% 8% 9% 10% 11% #402 <141 7% 8% 9% 90 10% 10% 11%	81% 70-30 6700 67% 69% 71% 73% 74% 75% 77% 78% 79% 70-40 71% 73% 74% 75% 74% 75% 77% 78% 77% 78% 77% 78% 79% 70-40 77% 78% 77% 78% 79% 70-40 77% 78% 79% 70-40 71% 70-40 71% 70-40 71% 71% 71% 71% 71% 71% 71% 71%	XC SR8 Classs UC XC	402 503 508 490 474 461 449 429 421 414 400 481 467 455 445 445 442 444 442 444	8% #402\square\frac{141} 5% 6% 6% 6% 7% 7% 7% #402\square\frac{141} 5% 6% 6% 6%	68% 38-30 <600 57% 59% 61% 62% 65% 66% 69% 38-40 <600 58% 60% 62% 60% 62% 66% 67%	UC MR8 Classs UC U	485 30-30 VMD 591 572 556 542 530 510 493 480 30-40 VMD 541 524 498 477 468	6% #402 <141 4% 5% 5% 5% 6% #402 <141 4% 5% 5% 6% 6%	69% 90-30 <600 55% 60% 62% 62% 68% 69% 30% 63% 66% 66% 66% 66% 68%	UC UC UC UC UC UC UC UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	64% 80-3 <60 47% 51% 54% 57% 63% 65% 66%
-30 Nozzles 80 -40	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 3.82 3.97 4.24 4.00 4.24 4.47 4.90 5.10 5.29 7.07 Flow us gpm	80 Boompsi 25 30 35 40 45 50 60 65 70 80 Boompsi 45 50 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	30 40 _{GPA} 18 19 21 22 24 25 27 28 29 32 50 _{GPA} 22 24 25 27 29 30 31 42	26 Spraye 50gra 14 15 17 18 19 20 22 22 23 24 25 Spraye 60gra 9 20 21 22 22 23 33 34 24 25 36 36 36 36 36 36 36 36 36 36 36 36 36	23 r Spee 60geA 12 13 14 15 16 17 18 19 20 21 r Spee 70geA 16 17 18 19 21 22 30 r Spee 7	21 d (on 2 70gPA 10 11 11 12 13 14 14 16 16 17 18 d (on 2 14 15 16 17 18 19 20 26 d (on 2 26 d (on 2 26 10 10 10 10 10 10 10 10 10 10 10 10 10	19 0" spa 80gea 9 10 10 11 12 12 14 14 15 16 0" spa 90gea 12 12 13 14 15 16 17 17 23 20" spa	18 cing) @ 90gra 9 0gra 8 9 9 10 11 11 12 13 13 14 cing) @ 100 11 12 13 13 15 15 16 21 cing) @ 21	15 100 7 8 8 9 10 10 11 11 12 13 120 9 10 11 11 11 12 13 13 18	C ER8 Class UC UC XC	354 0-30 VMD 506 481 441 430 397 388 380 360 400 VMD 460 444 430 398 398 399 382 399 382 390 369 505 506 506 506 506 506 506 506	15% #402 <141 5% 6% 7% 7% 8% 9% 10% 11% #402 <141 7% 8% 99% 10% 11% 11%	81% 70-30 <600 67% 69% 71% 74% 75% 77% 78% <600 71% <600 71% 74% 75% 77% 77% 78% 77% 77% 78%	XC SR8 Classs UC XC	402 503 508 490 474 461 449 429 421 414 400 481 467 455 445 445 442 444 442 444	8% #402\<\d141 5% 6% 6% 6% 6% 7% 7% #402\<\d141 5% 6% 6% 6% 6% 6%	68% 38-30 <600 54% 57% 61% 62% 66% 66% 66% 60% 62% 66% 66% 63% 62% 63% 62% 62% 63% 62% 67%	UC MR8 Classs UC U	485 30-30 VMD 591 572 556 542 530 510 501 493 480 30-40 VMD 541 524 510 498 498 468	6% #402 <141 4% 5% 5% 5% 6% #402 <141 4% 5% 5% 6% 6%	69% 90-30 <600 55% 60% 62% 64% 67% 68% 69% 4600 61% 65% 66% 66% 69% 70%	UC UC UC UC UC UC UC UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	64% 80-3 <60 47% 51% 54% 57% 63% 65% 66%
-30 Nozzles 80 -40	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 4.24 Flow us gpm 3.74 4.00 4.47 4.90 5.10 5.29 7.07 Flow us gpm 4.68	80 Boompsi 35 40 45 50 60 65 70 80 Boompsi 35 70 80 Boompsi 35 35 35 35 35 35 35 35 35 35 35 35 35	30 40gpa 18 19 21 22 24 25 27 28 29 32 50gpa 22 24 25 27 29 30 31 42 70gpa 20	26 Spraye 50gpa 14 15 17 18 19 20 22 23 24 25 Spraye 60gpa 19 20 21 22 24 25 26 35 Spraye 80gpa	23 r Spee 60 GPA 12 13 14 15 16 17 18 19 20 21 16 17 18 19 20 21 22 23 00 21 21 21 30 30 90 GPA 15	21 d (on 2 70gPA 10 11 12 13 14 16 16 17 18 15 16 17 18 19 20 26 d (on 2 10 10 14 14 15 10 10 14 15 16 15 16 17 18 19 20 16 17 18 19 19 10 10 10 14 15 10 10 10 10 14 15 10 10 10 10 10 10 10 10 10 10 10 10 10	19 0" spaa 80 9 10 10 11 12 12 14 14 14 15 16 0" spaa 90 12 13 14 15 16 17 17 23 20" spaa 10 11 11 11 12 14 15 16 16 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	18 cing) @ 90 cm. 8	15 1000 7 8 8 9 10 10 11 11 12 13 12 13 13 18 130 11	C ERR Class VC VC VC ERR XC	354 30-30 VMD 506 481 441 430 417 388 380 366 80-40 444 430 448 430 448 398 398 392 369 406 444 430 446 446 446 447 457 467 468 468 469 469 469 469 469 469 469 469	15% #40241415%6%7%9%9%10%10%11%#4024111%11%11%4402 <td>81% 70-30 <6000 67% 69% 71% 73% 75% 77% 77% 78% 79% <600 71% 75% 77% 75% 77% 78% 77% 78% 77% 600 71% 75% 77% 600 71% 75% 77% 600 71% 75% 75% 77% 600 70% 70% 70% 70% 70% 70% 70% 7</td> <td>XC SR8 Classs UC XC XC</td> <td>402 503 508 490 474 461 449 429 421 414 400 481 467 455 445 445 442 444 442 444</td> <td>8% #402\<\d141 5% 6% 6% 6% 6% 7% 7% #402\<\d141 5% 6% 6% 6% 6% 6%</td> <td>68% 38-30 <600 54% 57% 61% 62% 66% 66% 66% 60% 62% 66% 66% 63% 62% 63% 62% 62% 63% 62% 67%</td> <td>UC MR8 Classs UC U</td> <td>485 30-30 VMD 591 572 556 542 530 510 501 493 480 30-40 VMD 541 524 510 498 498 468</td> <td>6% #402 <141 4% 5% 5% 5% 6% #402 <141 4% 5% 5% 6% 6%</td> <td>69% 90-30 <600 55% 60% 62% 64% 67% 68% 69% 4600 61% 65% 66% 66% 69% 70%</td> <td>UC UC UC UC UC UC UC UC</td> <td>544 528 30-30 VMD 654 623 597 575 556 525 512 500</td> <td>4% #402 <141 2% 3% 3% 3% 3% 3% 4%</td> <td>64% 80-31 <60 47% 51% 54% 57% 63% 65% 66%</td>	81% 70-30 <6000 67% 69% 71% 73% 75% 77% 77% 78% 79% <600 71% 75% 77% 75% 77% 78% 77% 78% 77% 600 71% 75% 77% 600 71% 75% 77% 600 71% 75% 75% 77% 600 70% 70% 70% 70% 70% 70% 70% 7	XC SR8 Classs UC XC	402 503 508 490 474 461 449 429 421 414 400 481 467 455 445 445 442 444 442 444	8% #402\<\d141 5% 6% 6% 6% 6% 7% 7% #402\<\d141 5% 6% 6% 6% 6% 6%	68% 38-30 <600 54% 57% 61% 62% 66% 66% 66% 60% 62% 66% 66% 63% 62% 63% 62% 62% 63% 62% 67%	UC MR8 Classs UC U	485 30-30 VMD 591 572 556 542 530 510 501 493 480 30-40 VMD 541 524 510 498 498 468	6% #402 <141 4% 5% 5% 5% 6% #402 <141 4% 5% 5% 6% 6%	69% 90-30 <600 55% 60% 62% 64% 67% 68% 69% 4600 61% 65% 66% 66% 69% 70%	UC UC UC UC UC UC UC UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	64% 80-31 <60 47% 51% 54% 57% 63% 65% 66%
-30 Nozzies 80 -40 Nozzies	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 4.24 Flow us gpm 3.74 4.00 4.24 4.90 5.10 5.10 5.10 5.10 4.64 4.97 4.90 5.10 4.90 4.90 4.90 4.90 4.90 4.90 4.90 4.9	80 Boompsi 35 40 45 50 60 65 70 80 Boompsi 45 50 60 65 70 80 80 80 80 45 45 45 45 45 45 45 45 45 45 45 45 45	30 40gpa 18 19 21 22 24 25 27 28 29 32 25 50gpa 22 27 29 30 31 42	26 Spraye 50grA 14 15 17 18 20 22 23 24 25 Spraye 60grA 19 20 21 22 24 25 Spraye 60grA 19 20 21 22 23 35 Spraye 60grA 19 21 22 23 24 25 25 26 27 27 27 28 29 20 20 20 20 20 20 20 20 20 20 20 20 20	23 r Spee 60gra 12 13 14 15 16 17 18 19 20 21 r Spee 70gra 16 19 21 17 18 19 21 19 21 21 22 21 30 30 30 30 30 30 30 30 30 30 30 30 30	21 d (on 2 70 grad 14 15 15 16 16 16 17 18 18 19 19 10 10 10 11 17 18 16 16 17 18 18 19 19 10 10 10 10 11 15 15 16 11 17 18 19 19 10 10 10 10 11 15 10 10 10 10 10 10 10 10 10 10 10 10 10	19 0" spaa 80grad 9 10 10 11 12 12 14 14 15 16 00" spa 12 13 14 15 16 17 17 23 20" spa 110 11 11 12 12 14 15 16 16 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	18 @ 90 gra. 8 9 9 9 10 11 11 12 13 13 14 14 15 15 15 16 21 12 12 12	15 100 7 8 8 9 10 10 11 11 12 13 10 11 11 12 13 13 13 18 13 11 11 11 11 11 11 11 11 11	C ERRECT Class C Class C C C C C C C C C C C C C C C C C C	354 0-30 506 481 461 444 430 417 397 388 380 306 30-40 VMD 460 444 430 418 398 398 399 399 409 409 409 409 409 409 409 4	15% #402 <1411 5% 6% 6% 7% 6% 9% 99% 10% 10% #402 <141 7% 9% 10% 10% 11% 10% 10% 10% 10% 7% 7% 10% 10% 10% 10% 10% 10% 10% 10	81% 70-30 69% 69% 71% 73% 77% 77% 77% 690 70-40 600 71% 73% 74% 75% 77% 73% 74% 75% 77% 78% 78% 79% 70-50 6600 70% 70-50 70%	XC SR8 Classs UC XC	402 503 508 490 474 461 449 429 421 414 400 481 467 455 445 445 442 444 442 444	8% #402\<\d141 5% 6% 6% 6% 6% 7% 7% #402\<\d141 5% 6% 6% 6% 6% 6%	68% 38-30 <600 54% 57% 61% 62% 66% 66% 66% 60% 62% 66% 66% 63% 62% 63% 62% 62% 63% 62% 67%	UC MR8 Classs UC U	485 30-30 VMD 591 572 556 542 530 510 501 493 480 30-40 VMD 541 524 510 498 498 468	6% #402 <141 4% 5% 5% 5% 6% #402 <141 4% 5% 5% 6% 6%	69% 90-30 <600 55% 60% 62% 64% 67% 68% 69% 4600 61% 65% 66% 66% 69% 70%	UC UC UC UC UC UC UC UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	64% 80-30 <60 47% 51% 54% 57% 63% 65% 66%
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-30 Nozzles 80 -40 Nozzles	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 4.24 Flow us gpm 3.74 4.00 4.24 4.47 4.90 5.10 5.29 7.07 Flow us gpm 4.68 5.00 5.59 6.12	80 Boom psi 35 40 Boom psi 35 40 Boom psi 35 40 Boom psi 35 40 Boom psi 35 60 60 65 60 60 65 60 60 60 60 60 60 60 60 60 60 60 60 60	30 40gpa 18 19 21 22 24 25 27 28 29 32 50gpa 22 24 42 70gpa 20 21 23 24 26	26 35 Sprayes 50 GPA 14 15 17 18 19 20 22 23 24 25 50 GPA 19 20 21 22 24 25 26 35 Sprayes 80 GPA 17 19 20 21 22 24 25 27 27 28 29 20 20 21 20 21 21 21 22 23 24 25 26 26 27 27 27 27 27 27 27 27 27 27 27 27 27	23 r Spee 60GPA 12 13 14 15 16 17 18 19 20 21 16 17 Spee 70GPA 18 19 21 22 30 r Spee 90GPA 15 17 18 18 18 20	201 d (on 2 70 GPA 10 11 12 13 13 14 14 16 16 17 18 19 20 26 d (on 2 10 10 14 15 16 17 18 19 17 18 18 19 10 10 14 15 16 16 17 18 18 19 10 10 10 14 15 16 16 17 18 18 19 10 10 10 14 15 16 16 17 18 18 19 10 10 10 10 10 10 10 10 10 10 10 10 10	19 0" spa 80gra 10 10 11 12 12 14 15 16 0" spa 12 13 10" spa 110 17 17 23 18 19 19 19 19 19 19 19 19 19 19 19 19 19	18 @ 90GPA 8 9 9 9 10 11 11 12 13 13 14 15 15 15 12 12 13 14 15	15 100 7 8 8 9 10 10 11 11 11 12 13 13 13 18 13 11 11 11 11 11 11 11 11 11	C ERR Class C Lass XC	354 30-30 506 481 461 430 417 397 388 380 366 30-40 444 430 418 398 390 400 400 418 398 418 390 400 400 400 400 400 400 400 4	15% #402 10% 11% 10% 10% 10% 10% 11% 8% 9% 10% 11% 8% 9% 10% 11% 8% 9% 10% 11% 8% 9% 10% 11% 8% 9% 10% 11% 8% 9% 10% 11% 8% 9% 10% 11% 8% 9% 10% 11% 8% 10% 11% 8% 10% 11% 8% 10% 10% 11% 10	81% 70-30 67% 69% 71% 73% 74% 75% 77% 78% 79% 600 71% 75% 77% 78% 75% 79% 70-40 73% 75% 77% 73% 73% 72% 73% 74% 75% 75% 77% 73% 73% 73% 73% 74% 75% 75% 75% 75% 75% 75% 75% 75% 75% 75	XC SR8 Classs UC XC	402 503 508 490 474 461 449 429 421 414 400 481 467 455 445 445 442 444 442 444	8% #402\<\d141 5% 6% 6% 6% 6% 7% 7% #402\<\d141 5% 6% 6% 6% 6% 6%	68% 38-30 <600 54% 57% 61% 62% 66% 66% 66% 60% 62% 66% 66% 63% 62% 63% 62% 62% 63% 62% 67%	UC MR8 Classs UC U	485 30-30 VMD 591 572 556 542 530 510 501 493 480 30-40 VMD 541 524 510 498 498 468	6% #402 <141 4% 5% 5% 5% 6% #402 <141 4% 5% 5% 6% 6%	69% 90-30 <600 55% 60% 62% 64% 67% 68% 69% 4600 61% 65% 66% 66% 69% 70%	UC UC UC UC UC UC UC UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	64% 80-30 <60 47% 51% 54% 57% 63% 65% 66%
-30 Nozzles 80 -40 Nozzles	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 4.24 Flow us gpm 3.74 4.00 4.24 4.90 5.10 5.10 5.29 Flow us gpm 4.68 5.00 5.30 5.30 5.30 5.30	80 Boom psi 25 30 35 40 45 50 60 65 70 80 Boom psi 35 40 45 50 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	30 40gpa 18 19 21 22 24 25 27 28 29 32 50gpa 22 24 25 27 29 30 31 42 20 21 23 24 26 27	26 Spraye 50gpa 14 15 17 18 19 20 22 24 25 Spraye 60gpa 19 20 21 22 24 25 Spraye 80gpa 17 19 20 21 22 23 24 25 26 27 29 20 21 20 21 20 21 21 21 22 23 24 25 26 27 27 27 28 29 20 20 20 20 20 20 20 20 20 20	23 r Spee 60gpa 12 13 14 15 16 17 18 18 18 18 20 21 15	201 d (on 2 70 cm 2 m 2 m 2 m 2 m 2 m 2 m 2 m 2 m 2 m	19 0" spa 80gp 10 10 11 12 12 14 15 16 00" spa 90gpa 12 13 14 15 16 17 17 23 10" spa 110 11 11 12 12 14 15 16 16 17 17 17 18 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19	18 @ 90cm\ 8 9 9 9 9 10 11 11 12 13 13 14 15 16 120 120 12 12 12 12 13 13 14 14 14 14 14 15 15 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	15 100 7 8 8 9 10 10 11 11 12 13 13 13 13 13 13 13 11 11 12 13 14 15	C ERR UC VC VC ERR C XC X	354 30-30 VMD 506 481 461 444 430 388 380 366 30-40 444 430 440 440 440 440 440 4	15% #402 < 141	81% 70-30 67% 69% 71% 69% 73% 75% 77% 77% 78% 79% 70-40 75% 75% 77% 75% 75% 75% 75% 75% 75% 75%	XC SR8 Classs UC XC	402 503 508 490 474 461 449 429 421 414 400 481 467 455 445 445 442 444 442 444	8% #402\<\d141 5% 6% 6% 6% 6% 7% 7% #402\<\d141 5% 6% 6% 6% 6% 6%	68% 38-30 <600 54% 57% 61% 62% 66% 66% 66% 60% 62% 66% 66% 63% 62% 63% 62% 62% 63% 62% 67%	UC MR8 Classs UC U	485 30-30 VMD 591 572 556 542 530 510 501 493 480 30-40 VMD 541 524 510 498 498 468	6% #402 <141 4% 5% 5% 5% 6% #402 <141 4% 5% 5% 6% 6%	69% 90-30 <600 55% 60% 62% 64% 67% 68% 69% 4600 61% 65% 66% 66% 69% 70%	UC UC UC UC UC UC UC UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	64% 80-30 <60 47% 51% 54% 57% 63% 65% 66%
-30 Nozzles 80 -40 Nozzles	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 4.24 Flow us gpm 3.74 4.00 4.24 4.47 4.90 5.10 5.29 7.07 Flow us gpm 4.68 5.00 5.59 6.12	80 Boom psi 25 30 35 50 60 65 70 80 Boom psi 35 40 45 50 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	30 40gpa 18 19 21 22 24 25 27 28 29 32 50gpa 22 24 42 70gpa 20 21 23 24 26	26 35 Sprayes 50 GPA 14 15 17 18 19 20 22 23 24 25 50 GPA 19 20 21 22 24 25 26 35 Sprayes 80 GPA 17 19 20 21 22 24 25 27 27 28 29 20 20 21 20 21 21 21 22 23 24 25 26 26 27 27 27 27 27 27 27 27 27 27 27 27 27	23 r Spee 60GPA 12 13 14 15 16 17 18 19 20 21 16 17 Spee 70GPA 18 19 21 22 30 r Spee 90GPA 15 17 18 18 18 20	201 d (on 2 70 GPA 10 11 12 13 13 14 14 16 16 17 18 19 20 26 d (on 2 10 10 14 15 16 17 18 19 17 18 18 19 10 10 14 15 16 16 17 18 18 19 10 10 10 14 15 16 16 17 18 18 19 10 10 10 14 15 16 16 17 18 18 19 10 10 10 10 10 10 10 10 10 10 10 10 10	19 0" spa 80gra 10 10 11 12 12 14 15 16 0" spa 12 13 10" spa 110 17 17 23 18 19 19 19 19 19 19 19 19 19 19 19 19 19	18 @ 90 grax 8 9 9 9 9 10 11 11 12 13 13 14 15 16 16 16 16 16 16 16 16 16 16 16 16 16	15 100 7 8 8 9 10 10 11 11 11 12 13 13 13 18 13 11 11 11 11 11 11 11 11 11	C ERRECT STATE OF THE PROPERTY	354 30-30 506 481 461 430 417 397 388 380 366 30-40 444 430 418 398 390 400 400 418 398 418 390 400 400 400 400 400 400 400 4	15% #402 <141 / 7% / 7% 8% 8% 8% 9% 9% 9% 9% 9% 10% 11% 11% 11% 11% 11% 11% 11% 11% 11	81% 70-30 67% 69% 71% 73% 77% 78% 78% 79% 70-40 71% 73% 78% 70-40 71% 78% 77% 77% 77% 77% 77% 77% 77% 77% 77	XC SR8 Classs UC XC	402 503 508 490 474 461 449 429 421 414 400 481 467 455 445 445 442 444 442 444	8% #402\<\d141 5% 6% 6% 6% 6% 7% 7% #402\<\d141 5% 6% 6% 6% 6% 6%	68% 38-30 <600 54% 57% 61% 62% 66% 66% 66% 60% 62% 66% 66% 63% 62% 63% 62% 62% 63% 62% 67%	UC MR8 Classs UC U	485 30-30 VMD 591 572 556 542 530 510 501 493 480 30-40 VMD 541 524 510 498 498 468	6% #402 <141 4% 5% 5% 5% 6% #402 <141 4% 5% 5% 6% 6%	69% 90-30 <600 55% 60% 62% 64% 67% 68% 69% 4600 61% 65% 66% 66% 69% 70%	UC UC UC UC UC UC UC UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	64% 80-31 <60 47% 51% 54% 57% 63% 65% 66%
-30 Nozzles 80 -40 Nozzles	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 4.24 Flow us gpm 3.74 4.00 4.24 4.47 4.90 5.10 5.29 7.07 Flow us gpm 4.68 5.00 5.30 6.61 7.07 Flow	80 Boom psi 35 40 Boom psi 35 40 80 Boom psi 35 80 Boom psi 35 80 Boom psi 35 80 Boom psi 35 80 Boom psi 80 Boom Boom psi 80 Boom Boom Boom Boom Boom Boom Boom Boo	30 40gpa 18 19 21 22 24 25 27 28 32 24 22 24 25 27 29 30 30 21 22 24 26 27 28 30	26 Spraye 50gpa 14 15 17 18 19 20 22 24 25 Spraye 60gpa 19 20 21 22 24 25 Spraye 80gpa 17 19 20 21 22 24 25 Spraye 20 21 22 24 25 35 35 35 35 35 35 35 35 35 35 35 35 35	23 r Speed 12 22 23 r Speed 25 r	201 d (on 2 70 GPA 1 1 1 1 1 2 1 1 3 1 3 1 4 1 4 1 6 6 1 7 1 8 1 9 1 1 0 1 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1	19 00" spa 80grad 10 10 11 11 12 12 14 15 16 16 17 17 23 20" spa 110 110 12 12 13 14 15 16 17 17 17 18 18 19 11 11 11 12 12 14 15 16 16 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	18 @ 90 gra	15 100 7 8 8 9 10 10 11 11 12 13 13 11 11 12 13 13 13 13 13 11 11 12 13 15 16 16 17 18 18 18 18 18 18 18 18 18 18	C ERR UC UC XC	354 30-30 506 481 461 430 417 397 388 380 366 30-40 400 418 398 390 400 418 390 450 450 450 450 450 450 450 45	15% #4022 -1411 7% 8% 8% 9% 9% 9% 9% #4024 11% 8% 9% 11% 8% 10% 11% 8% 10% 11% 8% 8% 9% 10% 8% 8% 9% 9% 9% 9% 9% 9% 9% #402	81% (70-30) 67% 69% 71% 73% 74% 75% 77% 78% 75% 77% 6000 71% 75% 77% 78% 75% 75% 75% 75% 75% 75% 75% 75% 75% 75	XC SR8 Classs UC XC	402 503 508 490 474 461 449 429 421 414 400 481 467 455 445 445 442 444 442 444	8% #402\<\d141 5% 6% 6% 6% 6% 7% 7% #402\<\d141 5% 6% 6% 6% 6% 6%	68% 38-30 <600 54% 57% 61% 62% 66% 66% 66% 60% 62% 66% 66% 63% 62% 63% 62% 62% 63% 62% 67%	UC MR8 Classs UC U	485 30-30 VMD 591 572 556 542 530 510 501 493 480 30-40 VMD 541 524 510 498 498 468	6% #402 <141 4% 5% 5% 5% 6% #402 <141 4% 5% 5% 6% 6%	69% 90-30 <600 55% 60% 62% 64% 67% 68% 69% 4600 61% 65% 66% 66% 69% 70%	UC UC UC UC UC UC UC UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	64% 80-31 <60 47% 51% 54% 57% 63% 65% 66%
-30 Nozzles 80 -40 Nozzles	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 4.24 Flow us gpm 3.74 4.00 4.24 Flow us gpm 4.68 5.00 5.30 5.59 6.12 6.37 6.61 7.07 Flow us gpm us gpm 4.68 5.00 5.30 5.59 6.12 6.37 6.61 7.07 Flow us gpm us gpm 4.68 5.00 5.30 5.59 6.12 6.37 6.61 7.07 Flow us gpm gpm 4.68 6.70 6.70 6.70 6.70 6.70 6.70 6.70 6.70	80 Boom psi 35 50 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	30 40gpa 18 19 21 22 24 25 27 28 29 32 24 25 50gpa 22 24 25 27 29 30 31 42 20 20 21 23 24 25 27 29 30 90gpa	26 Spraye 50gra 14 15 17 18 19 20 22 24 25 Spraye 60gra 19 20 21 22 24 25 26 35 Spraye 80gra 17 19 20 21 22 22 24 25 26 26 27 27 28 29 20 20 20 20 20 20 20 20 20 20 20 20 20	23 r Spee 600 pp. 1 12 13 14 15 16 17 18 19 20 21 17 18 18 18 18 18 20 21 22 22 23 27 Spee 140 140 140 140 140 140 140 140 140 140	21 d (on 2 70 cp 2 1 1 1 1 1 2 2 1 2 6 d (on 2 1 1 1 1 1 2 2 1 1 2 2 1 1 2 2 1 1 1 1 1 2 2 1 1 2 2 1	19 0" spa 80gp 10 10 11 12 12 14 15 16 0" spa 90gpa 12 13 14 15 16 17 17 23 20" spa 110 13 14 15 16 17 17 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19	18 @ 90gra 8 9 9 9 9 10 11 11 12 13 13 14 (ing) @ 120 12	15 100 7 8 8 9 10 10 11 11 12 13 13 13 13 13 13 11 11 12 13 13 13 14 15 16 16 16 17 18 18 18 18 18 18 18 18 18 18	C ERR Class VC VC CLass XC	354 30-30 VMD 506 481 461 444 430 388 380 366 30-40 444 430 440 440 440 430 441 430 444 430 444 430 444 430 444 430 445 446 446 447 448 398 398 390 461 461 461 461 461 461 461 461	15% #402	81% 70-30 67% 69% 71% 69% 77% 78% 78% 78% 78% 78% 70-40 71% 78% 77% 78% 77% 78% 77% 78% 77% 78% 77% 77	XC SR8 Classs UC XC	402 503 508 490 474 461 449 429 421 414 400 481 467 455 445 445 442 444 442 444	8% #402\<\d141 5% 6% 6% 6% 6% 7% 7% #402\<\d141 5% 6% 6% 6% 6% 6%	68% 38-30 <600 54% 57% 61% 62% 66% 66% 66% 60% 62% 66% 66% 63% 62% 63% 62% 62% 63% 62% 67%	UC MR8 Classs UC U	485 30-30 VMD 591 572 556 542 530 510 501 493 480 30-40 VMD 541 524 510 498 498 468	6% #402 <141 4% 5% 5% 5% 6% #402 <141 4% 5% 5% 6% 6%	69% 90-30 <600 55% 60% 62% 64% 67% 68% 69% 4600 61% 65% 66% 66% 69% 70%	UC UC UC UC UC UC UC UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	64% 80-30 <60 47% 51% 54% 57% 63% 65% 66%
-30 Nozzles 80 -40 Nozzles	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 3.82 3.97 4.24 4.00 5.10 5.29 7.07 Flow us gpm 4.68 5.00 5.59 6.12 6.37 Flow us gpm 4.68	80 Boom psi 35 50 60 65 70 80 Boom psi 35 50 60 65 70 80 Boom psi 35 35 35 35 35 35 35 35 35 35 35 35 35	30 40GPA 18 19 21 22 24 25 27 28 29 32 50GPA 22 24 25 27 29 30 31 42 20 21 23 24 26 27 28 30 90GPA	26 Sprayes 144 155 17 18 19 20 22 23 24 25 26 80gpa 17 19 20 21 22 24 25 26 Sprayes 80gpa 17 19 20 21 23 24 17 19 20 21 24 25 26 Sprayes 80gpa 17 19 20 21 21 23 24 25 26 80gpa 17 19 20 21 21 23 24 25 26 80gpa 17 19 20 21 21 23 24 25 26 80gpa 17 19 20 21 21 23 24 24 25 26 80gpa 17 19 21 23 24 24 25 26 26 80gpa	23 r Spee 60 gpva f 60 gpva f 7 gpva f 12	21 d (on 2 70 GPAA 14 15 16 16 17 18 19 20 21 d (on 2 21 d (on 2 11 00 10 01 00 10 01 00 10 01 00 10 01 00 10 01 00 10 01 00 10 00 10 01 00 10 0	19 0" span 9 10 10 11 12 12 12 14 14 15 16 0" span 12 13 14 15 16 16 17 17 23 20" span 110 13 14 15 16 16 17 17 17 28 19 10 10 11 11 11 11 11 11 11 11 11 11 11	18 @ 90cm\ 8 9 9 9 9 10 11 11 11 12 13 13 14 15 16 16 18 6 16 18 6 16 18 6 16 18 6 16 18 6 16 18 6 18	15 100 7 8 8 9 10 10 11 11 12 13 120 9 10 11 11 12 13 13 18 13 14 15 16 16 16 17 18 18 18 18 18 18 18 18 18 18	C ERR VC	354 30-30 506 481 461 444 430 417 388 380 366 50-40 VMD 448 398 390 30-50 406 450 407 425 405 396 407 407 407 407 407 407 407 407	15% #402 	81% 70-30 67% 69% 71% 69% 74% 75% 77% 78% 77% 79% 40 <6000 71% 78% 78% 78% 78% 78% 78% 78% 78% 78% 78	XC SR8 Classs UC XC	402 503 508 490 474 461 449 429 421 414 400 481 467 455 445 445 442 444 442 444	8% #402\<\d141 5% 6% 6% 6% 6% 7% 7% #402\<\d141 5% 6% 6% 6% 6% 6%	68% 38-30 <600 54% 57% 61% 62% 66% 66% 66% 60% 62% 66% 66% 63% 62% 63% 62% 62% 63% 62% 67%	UC MR8 Classs UC U	485 30-30 VMD 591 572 556 542 530 510 501 493 480 30-40 VMD 541 524 510 498 498 468	6% #402 <141 4% 5% 5% 5% 6% #402 <141 4% 5% 5% 6% 6%	69% 90-30 <600 55% 60% 62% 64% 67% 68% 69% 4600 61% 65% 66% 66% 69% 70%	UC UC UC UC UC UC UC UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	64% 80-30 <60 47% 51% 54% 57% 63% 65% 66%
80 -40 Nozzles	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 4.24 Flow us gpm 3.74 4.00 4.24 4.47 4.90 5.10 5.29 7.07 Flow us gpm 4.68 5.00 5.30 6.61 6.37 6.61 7.07 Flow us gpm 5.61 6.00	80 Boom psi 35 50 60 65 70 80 Boom psi 35 40 45 50 60 65 70 80 Boom psi 35 40 45 45 50 65 70 80 Boom psi 35 40 45 45 50 60 65 70 80 Boom psi 35 40 45 45 40 45 45 40 45 45 40 80 80 80 80 80 80 80 80 80 80 80 80 80	30 40GPA 18 19 21 22 24 25 27 28 29 32 50GPA 22 24 42 70GPA 20 21 23 30 31 42 90GPA 30 90GPA	26 Spraye 50gpA 14 15 17 18 19 20 22 23 24 25 Spraye 60gpA 19 20 21 22 24 25 26 35 Spraye 20 21 22 24 25 26 35 35 37 47 29 20 20 21 22 24 25 26 26 27 27 28 29 20 20 20 20 20 20 20 20 20 20 20 20 20	23 r Spee 600 pp. 12 13 14 15 16 17 18 19 20 21 12 22 30 r Spee 900 pp. 15 17 18 18 20 21 12 22 23 r Spee 140 12 21 13	201 d (on 2 70 GPA 1 1 1 1 1 2 1 1 3 1 3 1 4 1 4 1 6 1 6 1 7 1 8 1 9 2 0 1 1 0 1 1 1 5 1 6 1 6 1 1 7 1 8 1 9 2 0 1 0 0 1 1 1 1 5 1 6 1 1 7 1 8 1 9 2 0 1 0 0 1 1 1 1 1 6 1 1 7 1 8 1 9 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	19 0" spa 80gpa 80gpa 10 10 11 12 12 14 15 16 0" spa 12 13 10" spa 110 110 13 14 15 16 17 17 17 17 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19	18 @ 90 grax 8 9 9 9 9 10 11 11 12 13 13 14 15 16 21 120 120 120 15 16 16 16 16 18 8 9 9	15 100 7 8 8 9 10 10 11 11 12 13 12 13 11 11 12 13 13 18 11 11 11 12 13 15 16 16 17 18 18 18 18 18 18 18 18 18 18	C ER8 UC UC VC	354 30-30 506 481 461 430 417 397 388 380 366 30-40 440 4418 398 390 466 450 445 445 445 396 450 445 445 445 445 445 445 445	15% #402 <1411 7% 8% 9% 10% 8% 9% 11% 8% 8% 9% 11% 8% 8% 8% 8%	81% 70-30 67% 69% 71% 73% 74% 75% 78% 78% 78% 79% 78% 77% 73% 74% 75% 77% 73% 74% 75% 77% 78% 77% 78% 77% 78% 77% 78% 77% 78% 77% 78% 77% 78% 70-60 60% 70% 60%	XC SR8 Classs UC XC	402 503 508 490 474 461 449 429 421 414 400 481 467 455 445 445 442 444 442 444	8% #402\<\d141 5% 6% 6% 6% 6% 7% 7% #402\<\d141 5% 6% 6% 6% 6% 6%	68% 38-30 <600 54% 57% 61% 62% 66% 66% 66% 60% 62% 66% 66% 63% 62% 63% 62% 62% 63% 62% 67%	UC MR8 Classs UC U	485 30-30 VMD 591 572 556 542 530 510 501 493 480 30-40 VMD 541 524 510 498 498 468	6% #402 <141 4% 5% 5% 5% 6% #402 <141 4% 5% 5% 6% 6%	69% 90-30 <600 55% 60% 62% 64% 67% 68% 69% 4600 61% 65% 66% 66% 69% 70%	UC UC UC UC UC UC UC UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	64% 80-31 <60 47% 51% 54% 57% 63% 65% 66%
-30 Nozzles 80 -40 Nozzles 80 -50 Nozzles	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 4.24 Flow us gpm 3.74 4.00 4.24 Flow us gpm 4.68 5.00 5.30 5.59 6.12 6.37 6.61 7.07 Flow us gpm 5.61 6.00 6.36	80 Boompsi 35 40 45 50 60 65 70 80 Boompsi 35 40 45 50 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	30 40GPA 18 19 21 22 24 25 27 28 29 32 24 25 27 29 30 20 21 90GPA 19	26 Spraye 50gpa 14 15 17 18 19 20 22 24 25 Spraye 60gpa 19 20 21 22 24 25 Spraye 80gpa 17 19 20 21 22 24 25 Spraye 20 21 22 24 25 26 35 27 29 20 21 20 21 21 22 24 25 26 27 27 27 27 27 27 27 27 27 27 27 27 27	23 r Spee 60gpa 140 122 23 r Spee 140 12 13 14 14 14 14 15 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	201 d (on 2 70GPA 11 11 12 20 26 d (on 2 21 160 10 11 11 12 16 16 17 18 19 20 16 10 10 11 11 12 16 16 17 18 19 19 20 16 10 10 10 11 11 12	19 0" spa 80grad 9 10 10 11 12 12 14 15 16 00" spa 12 13 10" spa 110 13 14 15 16 17 17 17 18 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10	18 @ 90 grax 8 9 9 9 10 11 11 12 13 13 14 15 16 21 12 13 14 15 16 16 16 16 18 18 cing) @ 2000 8 9 110	15 100 7 8 8 9 10 10 11 11 12 13 13 13 13 13 13 13 14 15 15 16 220 8 8 9	C ERR Class VC VC ERR CLASS VC VC ERR CLASS VC	354 30-30 VMD 506 481 4414 430 417 397 388 380 366 30-40 VMD 460 444 430 418 398 390 50-50 VMD 450 450 450 450 450 450 450 450	15% #402 <141 11% 8% 8% 9% 8% 9% 8% 9% 8% 9% 8% 9% 9% 9% 9% 9% 9% 9% 9% 9% 9% 9% 9% 9%	81% 70-30 67% 69% 71% 69% 774% 75% 77% 78% 78% 79% 70-40 73% 77% 77% 78% 77% 78% 79% 70-50 70% 72% 73% 74% 76% 76% 76% 77% 76% 77% 76% 77% 77% 78% 77% 78% 79% 70% 70% 71% 70% 71% 71%	XC SR8 Classs UC XC	402 503 508 490 474 461 449 429 421 414 400 481 467 455 445 445 442 444 442 444	8% #402\<\d141 5% 6% 6% 6% 6% 7% 7% #402\<\d141 5% 6% 6% 6% 6% 6%	68% 38-30 <600 54% 57% 61% 62% 66% 66% 66% 60% 62% 66% 66% 63% 62% 63% 62% 62% 63% 62% 67%	UC MR8 Classs UC U	485 30-30 VMD 591 572 556 542 530 510 501 493 480 30-40 VMD 541 524 510 498 498 468	6% #402 <141 4% 5% 5% 5% 6% #402 <141 4% 5% 5% 6% 6%	69% 90-30 <600 55% 60% 62% 64% 67% 68% 69% 4600 61% 65% 66% 66% 69% 70%	UC UC UC UC UC UC UC UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	64% 80-30 <60 47% 51% 54% 57% 63% 65% 66%
-30 Nozzles 80 -40 Nozzles 80 -50 Nozzles	3.54 Flow us gpm 2.37 2.60 2.81 3.00 3.18 3.35 3.67 4.24 Flow us gpm 3.74 4.00 4.24 4.47 4.90 5.10 5.29 7.07 Flow us gpm 4.68 5.00 5.30 6.61 6.37 6.61 7.07 Flow us gpm 5.61 6.00	80 Boom psi 35 50 60 65 70 80 Boom psi 35 40 45 50 60 65 70 80 Boom psi 35 40 45 45 50 65 70 80 Boom psi 35 40 45 45 50 60 65 70 80 Boom psi 35 40 45 45 40 45 45 40 45 45 40 80 80 80 80 80 80 80 80 80 80 80 80 80	30 40GPA 18 19 21 22 24 25 27 28 29 32 50GPA 22 24 42 70GPA 20 21 23 30 31 42 90GPA 30 90GPA	26 Spraye 50gpA 14 15 17 18 19 20 22 23 24 25 Spraye 60gpA 19 20 21 22 24 25 26 35 Spraye 20 21 22 24 25 26 35 35 37 47 29 20 20 21 22 24 25 26 26 27 27 28 29 20 20 20 20 20 20 20 20 20 20 20 20 20	23 r Spee 600 pp. 12 13 14 15 16 17 18 19 20 21 12 22 30 r Spee 900 pp. 15 17 18 18 20 21 12 22 23 r Spee 140 12 21 13	201 d (on 2 70 GPA 1 1 1 1 1 2 1 1 3 1 3 1 4 1 4 1 6 1 6 1 7 1 8 1 9 2 0 1 1 0 1 1 1 5 1 6 1 6 1 1 7 1 8 1 9 2 0 1 0 0 1 1 1 1 5 1 6 1 1 7 1 8 1 9 2 0 1 0 0 1 1 1 1 1 6 1 1 7 1 8 1 9 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	19 0" spa 80gpa 80gpa 10 10 11 12 12 14 15 16 0" spa 12 13 10" spa 110 110 13 14 15 16 17 17 17 17 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19	18 @ 90 grax 8 9 9 9 9 10 11 11 12 13 13 14 15 16 21 120 120 120 15 16 16 16 16 18 8 9 9	15 100 7 8 8 9 10 10 11 11 12 13 12 13 11 11 12 13 13 18 11 11 11 12 13 15 16 16 17 18 18 18 18 18 18 18 18 18 18	C ER8 UC UC VC	354 30-30 506 481 461 430 417 397 388 380 366 30-40 440 4418 398 390 466 450 445 445 445 396 450 445 445 445 445 445 445 445	15% #402 <141 7% 8% 8% 9% 10% 8% 8% 9% 402 11% 8% 8% 9% 9% 10% 11% 11% 11% 11% 11% 11% 11% 11% 11	81% 70-30 67% 69% 71% 73% 74% 75% 78% 78% 78% 79% 78% 77% 73% 74% 75% 77% 73% 74% 75% 77% 78% 77% 78% 77% 78% 77% 78% 77% 78% 77% 78% 77% 78% 70-60 60% 70% 60%	XC SR8 Classs UC XC	402 503 508 490 474 461 449 429 421 414 400 481 467 455 445 445 442 444 442 444	8% #402\<\d141 5% 6% 6% 6% 6% 7% 7% #402\<\d141 5% 6% 6% 6% 6% 6%	68% 38-30 <600 54% 57% 61% 62% 66% 66% 66% 60% 62% 66% 66% 63% 62% 63% 62% 62% 63% 62% 67%	UC MR8 Classs UC U	485 30-30 VMD 591 572 556 542 530 510 501 493 480 30-40 VMD 541 524 510 498 498 468	6% #402 <141 4% 5% 5% 5% 6% #402 <141 4% 5% 5% 6% 6%	69% 90-30 <600 55% 60% 62% 64% 67% 68% 69% 4600 61% 65% 66% 66% 69% 70%	UC UC UC UC UC UC UC UC	544 528 30-30 VMD 654 623 597 575 556 525 512 500	4% #402 <141 2% 3% 3% 3% 3% 3% 4%	47% 51% 54% 57% 59% 65% 66%

COMBO-JET 110° Spray Tips - Standard Sprayer Systems

Comprehensive rate & speed charts for any nozzle spacing/speed/rate is available on Tip Wizard. Try it today!

Disclaimer: These charts are published for comparative purposes to demonstrate the differences in the series of Combo-Jet® spray tips. Data used to populate this chart is extrapolated from third party testing data from a controlled conditions test with water as the testing solution. Actual spray applications with active chemical ingredients may change the spray dynamics and spray tip performance specifications. Wilger is not liable for any misuse or misrepresentation of this information, leading to (but not limited to) incorrect spray application, crop damage, or any other harm. (Not limited to human, livestock or environmental). Always verify these charts with the most recent charts found on the www.wilger.net, and ALWAYS follow chemical label nozzle requirements.

ASABE Spray Classification (ASABE S572.1 Standard)
Spray quality is categorized based on Dv0.1 and VMD droplet sizes.

Objective testing data (by 3rd party), from spray spectrum recording equipment (without wind tunnel use), has been used to classify spray quality for this chart. Extra data (e.g. VMD, etc.) can vary between testing equipment and method, and is provided as an educational resource only.

Tips sized up to 110-06 verified on Phase Doppler Particle Analyzer (POPA): tips sized over 110-06 verified on Malvern.

Ultra Coarse (UC)

VMD (Volume Median Diameter)
The median droplet (in μ) for a sprayed volume. Half of the volume is made of droplets smaller, with half made up of droplets larger.

% <141μ (% Driftable Fines) Percentage of volume which is likely to drift. As wind & boom height increase, observed spray drift will increase substantially. % <600μ (% of Small Droplets) % of volume which is made up of 'small' droplets, useful for coverage. As % of useful droplets lowers, overall coverage is reduced.

Tips sized up to 11		III IIIII DO									70150 (0																
Nozzle	Flow	DCI	1			te in U			е		FD110			fication								; %<6			roplets		Carias
Size & Angle	Rate USGPM	PSI				<u>Nozzle</u> Speed -				Class)° Serie		Class)° Serie ∠141			MR110 VMD			Class)° Serie	<600		Series VMC
7 ti igio	Flow	Boom				d (on 2			D)		10-01	#402		Ulass	VIVID	V141	<000	Uldasa	VIVID	V141	 <000	Olass	VIVID	V141	< 000	Olassi	VIVIL
	us gpm	psi	4 _{GPA}	5 _{GPA}	6 _{GPA}	7.5	8 _{GPA}		10 _{GPA}	Class	VMD	<141	<600														
	0.07	20	5.3	4.2	3.5	2.8	2.6	2.3	2.1	F	148		100%														
110	0.08	25 30	5.9 6.4	4.7 5.1	3.9 4.3	3.1	3.2	2.6	2.3	F	144 140		100% 100%														
-01	0.09	35	6.9	5.6	4.6	3.7	3.5	3.1	2.8	Ė	136		100%														
Nozzles	0.10	40	7.4	5.9	5.0	4.0	3.7	3.3	3.0	F	133		100%														
	0.11	45	7.9	6.3	5.3	4.2	3.9	3.5	3.2	F	131	58%	100%														
	0.11	50	8.3	6.6	5.5	4.4	4.2	3.7	3.3	F	128		100%														
	0.12 0.13	60 65	9.1	7.3	6.1	4.8 5.0	4.5	4.0	3.6	F	124 122		100% 100%														
	0.13	70	9.8	7.9	6.5	5.2	4.9	4.4	3.9	F	121		100%														
	0.14	80	11.0		7.0	5.6	5.3		4.2	F	118	67%															
		Boom				d (on 2					10-015		1-015						10-015								
	us gpm	psi 20	4GPA	5GPA	6GPA	7.5	8GPA		12gpa	Class	_	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600		
	0.11 0.12	25	7.9 8.8	7.0	5.3 5.9	4.2	3.9 4.4	3.2	2.6	F	153 148		100% 100%	М	225	21%	98%										
110	0.13	30	9.6	7.7	6.4	5.1	4.8	3.9	3.2	Ė	145	47%	100%		215	24%	98%	С	322	11%	94%	С	366	7%	92%		
-015	0.14	35	10.0	8.3	6.9	5.6	5.2	4.2	3.5	F	142	49%	100%	F	207	26%	98%	С	297	14%	96%	С	345	8%	93%		
Nozzles	0.15	40	11.0	8.9	7.4	5.9	5.6	4.5	3.7	F	139	52%	100%	F	199	28%	98%	C	277	16%	97%	C	328	10%	94%		
	0.16 0.17	45 50	12.0 12.0	9.5	7.9 8.3	6.6	5.9 6.2	5.0	3.9 4.2	F	137 134	55%	100% 100%	F	193 187	30% 32%	98% 98%	M	261 247	18% 20%		C C	313 301	11% 12%	95% 95%		
	0.17	60	14.0	11.0	9.1	7.3	6.8	5.5	4.5	F	131	58%	100%	F	177	34%	98%	M	225	23%			281	14%			
	0.19	65	14.0	11.0	9.5	7.6	7.1	5.7	4.7	F	129		100%	F	173	36%	98%	F	216	24%	99%		272	15%	96%		
	0.20	70	15.0	12.0	9.8	7.9	7.4	5.9	4.9	F	128		100%	F	169	37%	98%	F	208	25%			265	15%			
	0.21	80	16.0		11.0	8.4	7.9	6.3	5.3	F ED1	125 10-02		100%	F CD1	161	39%	98%	F MD1	194		100%		251	17%			
	Flow us gpm	Boom psi	5 _{GPA}	Spraye 6 _{GPA}	r Spee 7.5	d (on 2 8gpa	10gpa	cing) @ 12gpa	15 _{GPA}	Class	VMD	#4028 <141		Class	10-02 VMD	#4028 <141		Class	10-02 VMD	#4029 ~141	<600		10-02 VMD		86-02 <600		
	0.14	20	8.4	7.0	5.6	5.3	4.2	3.5	2.8	F	173		100%	Oidoo	TITLE	<u> </u>	1000	Cidoo	*******	<u> </u>	1000	Oidoo	VIVID	<u> </u>	1000		
	0.16	25	9.4	7.8	6.3	5.9	4.7	3.9	3.1	F	166	36%	100%		227	21%	99%										
110	0.17	30	10	8.6	6.9	6.4	5.1	4.3	3.4	F	160	39%	100%		219	23%	99%		315	12%	95%	VC	431	5%	82%		
-02 Nozzles	0.19 0.20	35 40	11	9.3	7.4	6.9 7.4	5.6 5.9	4.6 5.0	3.7 4.0	F	155 151	42%	100% 100%		212 206	24% 26%	99% 99%		295 279	14% 15%	96% 97%	VC VC	410 392	6% 7%	85% 87%		
14022163	0.21	45	13	11.0	8.4	7.9	6.3	5.3	4.2	F	147		100%		201	27%	99%	M	265	17%		C	376	7%	89%		
	0.22	50	13	11.0	8.9	8.3	6.6	5.5	4.4	F	144	49%	100%		196	29%	99%	M	254	19%		С	361	8%	90%		
	0.24	60	15	12.0	9.7	9.1	7.3	6.1	4.8	F	138	52%	100%	F	188	31%	99%	M	235	21%	98%	C	336	9%	92%		
	0.25	65	15	13.0	10.0	9.5	7.6	6.3	5.0	F	135	54%	100%	F	184	32%	99%	M	227	22%	98%	C	325	10%	92%		
	0.26 0.28	70 80	16 17	13.0 14.0	10.0	9.8	7.9 8.4	7.0	5.2 5.6	F	133 128		100% 100%	F	181 175	33%	99% 99%	F	220 208	23% 25%			315 297	10% 11%	93%		
	Flow	Boom				d (on 2				ER1	10-025		1-025		0-025			_	10-025		1-025		10-025		36-025	UR1	10-02
	us gpm	psi	5 _{GPA}	6gpa	7.5	8 _{GPA}	10gpa			Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	
	0.18	20	11	8.8	7.0	6.6	5.3	4.4	3.5	F	194		100%	NA	2//	100/	0.00/									#402	92-02
110	0.20	25 30	12	9.8	7.8 8.6	7.3 8.0	5.9 6.4	4.9 5.4	3.9 4.3	F	190 186	29% 29%	100% 100%		244 236	18% 20%	98% 98%	С	350	9%	91%	VC	434	5%	80%		
-025	0.23	35	14	12.0	9.3	8.7	6.9	5.8	4.6	F	183		100%		228	21%	98%	С	334	10%		VC	414	6%	83%	UC	564
Nozzles	0.25	40	15	12.0	9.9	9.3	7.4	6.2	5.0	F	181	30%	100%	M	222	23%	98%	С	320	11%	93%	VC	398	7%	86%	UC	541
	0.27	45	16	13	11.0	9.8	7.9	6.6	5.3	F	178		100%		216	24%	98%		307	12%			383	7%	88%	UC	522
	0.28 0.31	50 60	17 18	15	11.0 12.0	10.0	9.1	7.6	5.5 6.1	F	176 173		100% 100%	F	211	25% 27%	98% 98%	C	296 277	13% 15%	95% 96%	C C	370 347	8% 9%	89% 92%	UC XC	504 474
	0.31	65	19	16	13.0	12.0		7.9	6.3	F	171		100%	F	199	28%	98%	M	268	16%		C	337	9%	92%	XC	461
	0.33	70	20	16	13.0	12.0	9.8	8.2	6.5	F	170	31%	100%	F	195	29%	98%	М	261	17%	96%	С	328	10%	93%	XC	448
	0.35	80	21	18	14	13.0			7.0	F	167		100%	F	189	30%	98%	M	247	18%		C	311	11%	94%	XC	426
	Flow us gpm	Boom psi	5gpa	Spraye 6gpa	r Spee 7.5	d (on 2 8gpa			D 15gpa	ER1 Class	10-03	#4028 <141	81-03 -600		10-03 VMD		37-03 -600		10-03 VMD	#4029			10-03 VMD		86-03 <600		10-0: VMI
	0.21	20	13	11.0		7.9			4.2	F		27%		Class	VIVID	(141	<000	Class	VIVID	< 1 4 1	<000	Ciass	VIVID	<141	CUUU		vivit 292-0
	0.24	25	14	12.0	9.4	8.8	7.0	5.9	4.7	F		29%			319	9%	94%										
110	0.26	30	15	13	10.0	9.6	7.7	6.4	5.1	F		31%		C	303	11%	95%		394	6%	86%		479	4%	74%		
-03	0.28	35	17	14		10.0		6.9	5.6	F		33%			290	13%	95%		376		89%		460	4%	77%	UC	612
Nozzles	0.30	40 45	18 19	15 16		11.0		7.4	5.9 6.3	F	173 169	35% 36%			279 269	15% 16%	96% 96%		360 346		91% 92%		443 428	5% 5%	80% 82%	UC	589 570
	0.34	50	20	17	13.0		10.0		6.6	F	165	37%			260	17%	97%		333		93%		414	6%	84%	UC	552
	0.37	60	22	18	15	14.0	11.0	9.1	7.3	F	159	39%	97%	M	244	19%	97%	С	311	12%	94%	С	391	6%	86%	UC	521
	0.38	65	23	19	15		11.0		7.6	F	156	40%	97%		237	20%	97%		301		95%		381	7%	87%	UC	507
	0.40	70	24	20	16		12.0		7.9	F	153		97%		231	21%	98%	C		13%			371	7%	88%		495
	0.42	80	25	21	17	16	13.0	11.0	8.4	F	149	43%	96%	F	220	22%	98%	С	2/6	14%	96%	С	354	8%	90%	ХC	472

NOTE: 'SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. 2Shown application information is based on water @ 80°F in a controlled environment and should not be considered actual. Information is provided for comparison to other Combo-Jet@ spray tips, for educational purposes only. Repeat testing results can vary.

COMBO-JET 110° Spray Tips - Standard Sprayer Systems

Disclaimer: These charts are published for comparative purposes to demonstrate the differences in the series of Combo-Jet® spray tips. Data used to populate this chart is extrapolated from third party testing data from a controlled conditions test with water as the testing solution. Actual spray applications with active chemical ingredients may change the spray dynamics and spray tip performance specifications. Wilger is not liable for any misuse or misrepresentation of this information, leading to (but not limited to) incorrect spray application, crop damage, or any other harm. (Not limited to human, livestock or environmental). Always verify these charts with the most recent charts found on the www.wilger.net, and ALWAYS follow chemical label nozzle requirements.

ASABE Spray Classification (ASABE S572.1 Standard)

Spray quality is categorized based on Dv0.1 and VMD droplet sizes.

Objective testing data (by 3rd party), from spray spectrum recording equipment (without wind tunner use), has been used to classify spray quality for this chart. Extra data (e.g. VMD, etc.) can vary very Coarse (VC)

Extremely Coarse (XC)

VMD (Volume Median Diameter) The median droplet (in u) for a sprayed volume. Half of the volume is made of droplets smaller, with % <141 μ (% Driftable Fines) Percentage of volume which is likely to drift. As wind & boom height increase, observed spray % <600μ (% of Small Droplets) % of volume which is made up of 'small' droplets, useful for coverage As % of useful droplets lowers,

between te Tips sized up to 11	esting equipm 10-06 verified or											rse (XC) JC)	h			droplets			drift will		e substa		┚┖		l coverag		
	Flow	Boom		Spraye	r Spee	d (on 2	0" spa	cing) @)	ER1	10-04	#402	81-04	SR1	10-04	#4028	87-04	MR1	10-04	#402	91-04	DR1	10-04	#4028	86-04	UR1	10-04
	us gpm	psi	8 _{GPA}	10gpa	12.5	15gpa	20 _{GPA}	25 _{GPA}	30gpa	Class	VMD	<141	<600	Class		<141	<600	Class			<600	Class	VMD	<141	<600	Class	VMD
	0.28	20	11	8	6.7	5.6	4.2	3.4	2.8	M	240	18%	97%		000	001	000/									#402	292-04
110	0.32	25	13	10	7.5	6.3	4.7	3.8	3.1	M	232 225	20%	97%	C	330	9%	93%	VC	416	5%	84%	XC	510	3%	69%	\vdash	
110 -04	0.35	30 35	14 15	11	9	6.9 7.4	5.1	4.1	3.7	M	220	23%	97% 97%	C	314 300	11% 12%	95%	VC VC	395	6%	87%	XC	510 488	4%	73%	UC	621
Nozzles	0.40	40	16	12	10	7.9	5.9	4.8	4.0	F	215		96%	Č	288	14%	95%	C	377	7%	89%	VC	469	4%	76%	UC	601
	0.42	45	17	13	10	8	6.3	5.0	4.2	F	210	25%	96%	С	278	15%	96%	С	361	8%	91%	VC	453	5%	78%	UC	583
	0.45	50	18	13	11	9	6.6	5.3	4.4	F	206	26%	96%	M	269	16%	96%	C	346	8%	92%	VC	438	5%	80%	UC	567
	0.49	60	19	15	12	10	7.3	5.8	4.8	F	199	28%	96%	M	253	17%	96%	C	321	9%	94%	VC	412	6%	83%	UC	539
	0.51 0.53	65 70	20	15 16	12	10	8	6.1	5.0 5.2	F	196 194	29% 29%	96% 95%	M	246 239	18% 19%	97% 97%	C	310 300	10% 10%	94%	C	401 391	6% 6%	84% 85%	UC	527 516
	0.57	80	22	17	13	11	8	6.7	5.6	F	189		95%	M	228	20%	97%		282		96%	Č	372	7%	87%	UC	496
		Boom		Spraye	r Speed	d (on 2	0" spac			ER1	10-05		31-05	SR1	10-05	#4028			10-05	#402		DR1	10-05	#4028		UR1	10-05
	us gpm	psi		12.5	15gpa		20 _{GPA}			Class		<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
	0.35	20 25	11 12	9	8	5.8 6.5	5.3	4.2	3.5	M	248 237	18% 20%	95% 95%	С	377	7%	89%									#402	292-05
110	0.43	30	13	10	9	7	6.4	5.1	4.3	M	228	22%	95%	C	355	8%	91%	XC	486	3%	72%	XC	530	2%	63%	-	
-05	0.47	35	14	11	9	8	6.9	5.6	4.6	M	220	24%	95%	Č	338	10%	93%		464	4%	75%	XC	516	2%	66%	UC	638
Nozzles	0.50	40	15	12	10	8	7.4	5.9	5.0	F	214	26%	95%	C	322	11%	93%	VC	445	5%	78%	XC	503	3%	68%	UC	621
	0.53	45	16	13	11	9	8	6.3	5.3	F	208		95%	C	309	12%	94%	VC	428	5%	80%	XC	492	3%	70%	UC	605
	0.56 0.61	50 60	17 18	13 15	11	10	9	6.6 7	5.5 6.1	F	203 194	30%	95% 95%	C	296 275	13% 15%	95% 96%	VC C	412 386	6% 7%	82% 85%	XC	482 465	3% 3%	72% 74%	UC	592 570
	0.64	65	19	15	13	11	10	8	6.3	F	190	31%	95%	M	266	16%	96%	C	374	7%	86%	XC	458	4%	75%	UC	560
	0.66	70	20	16	13	11	10	8	6.5	F	187	32%	95%	M	257	16%	96%	С	364	7%	87%	VC	451	4%	76%	UC	551
	0.71	80	21	17	14	12	11	8	7	F	180	34%	95%	M	242	17%	97%	С	344	8%	88%	VC	438	4%	78%	UC	536
		Boom psi	10gpa		r Speed 15gpa		0" spac 20gpa		35gpa	ER1 Class	10-06 VMD	#402 <141	31-06 <600		10-06 VMD		87-06 <600				91-06 <600				86-06 <600	UR1	10-06 VMD
	us gpm 0.42	20	13	10	8	7	6.3	4.2	3.6	C	282	14%	94%	UldSS	VIVID	<141	<000	Uldoo	VIVID	<141	<000	UldSS	VIVID	<141	<000		292-06
	0.47	25	14	11	9	8	7.0	4.7	4.0	M	270	16%	94%														-02 00
110	0.52	30	15	12	10	9	8	5.1	4.4	М	261	18%	94%	VC	416	6%	84%										
-06	0.56	35	17	13	11	9	8	5.6	4.8	M	253	19%	94%	C	392	7%	87%	XC	490	4%	71%	XC	546	2%	61%	UC	652
Nozzles	0.60	40 45	18 19	15	12	10	10	6	5.1 5.4	M	246 240	20%	94% 95%	C	371 353	8% 9%	89% 90%	VC VC	474 461	4% 4%	74% 76%	XC	529 514	2% 3%	64% 66%	UC	633 617
	0.67	50	20	16	13	11	10	7	6	M	235	22%	95%	C	337	10%	92%	VC	448	4%	78%	XC	501	3%	68%	UC	603
	0.73	60	22	17	15	12	11	7	6	М	225	24%	95%	С	308	12%	93%	VC	427	5%	81%	XC	478	3%	71%	UC	580
	0.76	65	23	18	15	13	11	8	7	M	221	25%	95%	C	296	13%	94%	VC	418	5%	82%	XC	468	3%	72%	UC	570
	0.79	70	24	19	16	13	12	8	7	F	217	25%	95%	C	284	13%	94%	VC	409	5%	83%	XC	459	3%	74%	UC	560
	0.85 Flow	80 Boom	25	20 Spraye	17 r Speed	14 d (on 2	13 0" spac	8 ring) @		_	211 10-08	#402	95% 81-08	SR1	264 10-08	14% #4028	95% 87-08	C MR1	394	#402	85% 91-08	VC DR1	442 10-08	4% #4028	75% 86-08	UC UR1	544 10-08
	us gpm	psi		18gpa		25gpa			40 _{GPA}	Class	VMD		<600	Class			<600				<600				<600	Class	VMD
	0.57	20	11	9	8	7	6	4.8	4.2	С	327	14%	91%													#402	292-08
440	0.63	25	13	10	9	8	6	5	4.7	C	307	16%	92%	V0	450	00/	070/									\vdash	
110 -08	0.69	30 35	14 15	11	10	9	7	6	5 6	M	290 276	17% 19%	93% 94%	XC	453 429	6% 7%	67% 71%	UC	506	5%	57%	UC	590	3%	44%	UC	675
Nozzles	0.80	40	16	13	12	10	8	7	6	M	264	20%	95%	XC	408	7%	74%	UC	483	5%	61%	UC	569	4%	47%	UC	651
	0.85	45	17	14	13	10	8	7	6	М	254	21%	95%	XC	390	8%	77%	XC	464	6%	64%	UC	551	4%	49%	UC	632
	0.89	50	18	15	13	11	9	8	7	M	244	22%	95%	VC	374	9%	79%	XC	446	6%	67%	UC	534	4%	51%	UC	614
	0.98 1.02	60 65	19 20	16 17	15 15	12 12	10	8	7 8	늗	228 221	23% 24%	96% 96%	C	346 334	10% 10%	82% 83%	XC	416 403	7% 7%	70% 72%	UC	506 493	4% 5%	55% 56%	UC	585 573
	1.02	70	21	17	16	13	10	9	8	F	214	25%	97%	C	322	11%	84%	XC	391	7%	73%	UC	482	5%	57%	UC	562
	1.13	80	22	19	17	13	11	10	8	F	202	26%	97%	Č	302	11%	86%			8%	76%	XC	461	5%	60%	UC	543
	Flow			Spraye				cing) @		ER1	10-10	#402	31-10	SR1	10-10	#4028		MR1	10-10		91-10	DR1	10-10	#4028	86-10	UR1	10-10
	us gpm	psi	15gpa	18gpa	20gpa	25gpa	30gpa	40gpa	50gpa	Class	VMD	<141	<600 QQ0/-	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Ulass #402	VMD 292-10
	0.71	20 25	14 16	12	11	9	8	6	5	VC C	362 341	10% 12%	88% 89%													#402	-9Z-TU
110	0.73	30	17	14	13	10	9	6	5	С		14%	90%	XC	470	6%	62%										
	0.94	35	19	15	14	11	9	7	6	С	310	15%	91%	XC	445	7%	67%		499						57%		
	1.00	40	20	17	15	12	10	7	6	C		17%		XC	424	7%	70%			5%	59%	UC	584	5%	55%		658
	1.06 1.12	45 50	21	18 18	16 17	13	11 11	8	6 7	C M		18% 19%		XC	405 388	8% 8%	73% 75%				62% 64%	UC	574 565		53% 51%		637 620
	1.12	60	24	20	18	15	12	9	7	M		21%			358	9%	79%				67%		550		48%		590
	1.27	65	25	21	19	15	13	10	8	M		21%	94%	С		10%	80%				69%		543	6%	47%	UC	577
	1.32	70	26	22	20	16	13	10	8	М	246	22%	94%	С	333	10%	81%	XC	388	7%	70%	UC	537	6%	46%	UC	566
	1.41	80	28	23	21	17	0" 000	11	8	F		23%		C	311		83%		367		72%	UC	525	6%	43%	UC	546
	Flow us gpm	Boom psi		Spraye 25gpa	r Speei 30gpa		U" spac 40gpa		50gpa	Class	10-125 VMD	#4028 <141	600 ×	SR11 Class	0-125 VMD		7-125 <600		10-125 VMD		91-125 <600		0-125 VMD		36-125 <600		
	0.99	25	15	12	10	8 8	40GPA	43GPA 7	6	XC	421		70%	Cano	VIVID		~000	Orabb	VIVID	<1 4 1	~000	Olass	TIMID	~141			
	1.08	30	16	13	11	9	8	7	6	XC		10%		UC	501	4%	56%										
110	1.17	35	17	14	12	10	9	8	7	XC	383	10%	76%	XC	471	5%	62%	UC	618		39%		647	3%	35%		
-125	1.25	40	19	15	12	11	9	8	7	VC		11%	79%	XC	445	5%	66%		593		43%		630	4%	37%		
	1.33	45	20	16	13	11	10	9	8	VC C		11% 12%		XC	423 403	6% 6%	70% 72%		571 552		47% 49%		616 603	4% 4%	39% 40%		
Nozzles		50	ソコ					7	ıυ	U	U#U	1 1 4 /0	UZ /0	ΛU		U /0	16/0							7 /0	TU /0	(
	1.40	50 60	21	17 18	14	12	11		9	C	336	12%	83%	XC	386	7%	74%	UC_	535	5%	52%	UC_	592	4%	42%		
			23 24		15 16	13 14		10 11	9 10	C C	319	12% 13%	85%		386 355	7% 7%	74% 78%	UC	535 506	5% 5%	52% 55%	UC	592 572	4% 5%	42% 44%		
	1.40 1.53	60	23	18	15	13	11	10		C C	319 312		85% 85%	VC C		7% 8%		UC	506 493	5% 5%		UC	572 563	5% 5%			

COMBO-JET 110° Spray Tips - Standard Sprayer Systems

Comprehensive rate & speed charts for any nozzle spacing/speed/rate is available on Tip Wizard. Try it today!

Disclaimer: These charts are published for comparative purposes to demonstrate the differences in the series of Combo-Jet® spray tips. Data used to populate this chart is extrapolated from third party testing data from a controlled conditions test with water as the testing solution. Actual spray applications with active chemical ingredients may change the spray dynamics and spray tip performance specifications. Wilger is not liable for any misuse or misrepresentation of this information, leading to (but not limited to) incorrect spray application, crop damage, or any other harm. (Not limited to human, livestock or environmental). Always verify these charts with the most recent charts found on the www.wilger.net, and ALWAYS follow chemical label nozzle requirements.

ollow ch	пеппса	i iade	11102	zie re	quire	menu	5.																		
	Flow	Boom		Spraye	r Spee	d (on 2	0" spac	cing) @)	ER1	10-15	#402	81-15	SR1	10-15	#402	87-15	MR1	10-15	#402	91-15	DR1	10-15	#4028	86-15
	us gpm	psi	25 _{GPA}	30 _{GPA}	35 _{GPA}	40 _{GPA}	45 _{GPA}	50gpa	55 _{GPA}	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	1.19	25	14	12	10	9	8	7	6	XC	416	10%	68%												
	1.30	30	15	13	11	10	9	8	7	XC	398	10%	72%	UC	538	5%	51%								
110	1.40	35	17	14	12	10	9	8	8	XC	383	11%	74%	UC	515	5%	55%	UC	590	4%	43%		641	4%	43%
	1.50	40	18	15	13	11	10	9	8	VC	370	12%	76%	UC	496	6%	58%	UC	574	4%	45%	UC	624	4%	46%
Nozzles	1.59	45	19	16	14	12	11	10	9	VC	358	12%	77%	XC	478	6%	61%	UC	560	5%	47%	UC	610	4%	48%
	1.68	50	20	17	14	12	11	10	9	С	348	13%	79%	XC	463	6%	64%	UC	548	5%	49%	UC	597	4%	50%
	1.84	60	22	18	16	14	12	11	10	С	330	14%	81%	XC	436	7%	67%	UC	527	5%	52%	UC	575	4%	53%
	1.91	65	23	19	16	14	13	11	10	С	322	14%	82%	XC	424	7%	69%	UC	517	5%	53%	UC	565	4%	54%
	1.98	70	24	20	17	15	13	12	11	С	315	15%	82%	XC	413	7%	70%	UC	508	5%	54%	UC	556	4%	55%
	2.12	80	25	21	18	16	14	13	11	С		15%		XC		8%	72%	UC	493	5%	56%	UC	540	5%	58%
	Flow	Boom	-	Spraye	r Speed	d (on 2	0" spac	cing) @)	ER1	10-20	#402	81-20		10-20	#402	87-20	MR1	10-20	#4029	91-20				
	us gpm	psi	30gpa	35 _{GPA}	40 _{GPA}	45 _{GPA}	50gpa	55gpa	60gpa	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600				
	1.58	25	16	13	12	10	9	9	8	XC	473	7%	60%												
	1.73	30	17	15	13	11	10	9	9	XC		8%	64%												
110	1.87	35	19	16	14	12	11	10	9	XC	437	8%	66%		497	6%	59%	UC		5%	45%				
-20	2.00	40	20	17	15	13	12	11	10	XC	422	9%		XC	479	6%	62%		557	5%	48%				
Nozzles	2.12	45	21	18	16	14	13	11	11	XC	410	9%	70%	XC	463	7%	65%		542	5%	50%				
	2.24	50	22	19	17	15	13	12	11	XC	399	9%	72%	XC	449	7%	67%		529	6%	52%				
	2.45	60	24	21	18	16	15	13	12	XC	379	10%	74%	XC	424	8%	70%		506	6%	55%				
	2.55	65	25	22	19	17	15	14	13	VC	370	10%	75%	XC	413	8%	72%		496	6%	56%				
	2.65	70	26	22	20	17	16	14	13	VC	362	10%	76%	XC	403	8%	73%	UC	487	6%	57%				
	2.83	80	28	24	21	19	17	15	14	С		11%			385			XC	470	7%	59%]			
		Boom	25	Spraye	r Speed	d (on 2	0" spac	cing) @	70			#402													
	us gpm	psi 25					55GPA			XC		<141 7%	60%	Class	VIVID	< 141	<000								
	1.98 2.17	30	17	15 16	13	12 13	11 12	10	8	XC	453	7%	65%					ł							
110		35	18	17	14			12	9	XC		7%	68%	LIC	404	CO/	59%	ł							
110 -25	2.34	40	20	19	17	14 15	13	12	10 11	XC	437 422	7%	71%	XC	468	6%	62%	ł							
		45	21		18	16	14			XC				XC	453	6%	64%	ł							
Nozzles	2.65 2.80	50	23 24	20	18	17	14 15	13 14	11 12	XC	410 399	8%	73% 74%	XC	441	7% 7%	66%	ł							
	3.06	60	26	23	20	18	17	15	13	XC	380	8%	77%	XC	419	8%	69%	}							
	3.19	65	27	24	21	19	17	16	14	VC	371	8%	78%	XC	409	8%	70%	1							
	3.31	70	28	25	22	20	18	16	14	VC	364	8%	79%	XC	400	8%	71%	ł							
	3.54	80	30	26	23	21	19	18	15	C	350	8%	81%	XC	384	8%	73%	ł							
		Boom					0" spac					#402		۸٥	304	0 /0	13/0	J							
	us gpm						0 spai 80gpa				VMD														
	2.37	25	18	14	12	10	9	8 8			484		58%												
	2.60	30	19	15	13	11	10	9	8	XC	466	6%	61%												
110	2.81	35	21	17	14	12	10	9	8	XC	451	7%	63%												
-30	3.00	40	22	18	15	13	11	10	9	XC	437	7%	65%												
Nozzles	3.18	45	24	19	16	14	12	11	10	XC	425	8%	67%												
INUZZICS	3.35	50	25	20	17	14	12	11	10	XC		8%	68%	ł											
	3.67	60	27	22	18	16	14	12	11	XC	396	9%	70%	1											
	3.82	65	28	23	19	16	14	13	11	XC	388	9%	71%												
	3.97	70	29	24	20	17	15	13	12	XC	381	9%	72%												
	4.24	80	32	25	21	18	16	14	13	VC		9%	73%												
	7.4	_ 00	UL			10	10	17	10	70	007	1 970	10/0	J											

LERAP Drift Reduction Star Rating for COMBO-JET 110° Spray Nozzles [For UK applicators]

Local Environmental Risk Assessments for Pesticides (LERAP) certification is completed in the UK to provide applications a means to qualify a local drift reduction assessment based on the nozzles used for an application. Stay tuned for further LERAP nozzle testing for more nozzles.

LERAP RATING	Nozzle	Pressure Range
	DR110-03	1.0 - 1.5 BAR
****	DR110-05	1.0 - 1.5 BAR
90%	DR110-06	1.0 - 3.0 BAR
Drift Reduction	MR110-05	1.0 - 1.5 BAR
Dint naudulion	MR110-06	1.0 - 1.5 BAR
The A steel EDAD -	ada a ta a a accomada a	Alexa III Accade a Alexa

The 4-star LERAP rating is a new rating that illustrates the highest classification for drift reduction within the standard certification. (List updated January 2021)

	LEKAP KATING	INOZZIE	Pressure Range
]		DR110-025	1.0 - 2.5 BAR
1		DR110-03	1.6 - 3.0 BAR
1		DR110-04	1.0 - 5.0 BAR
1	***	DR110-05	1.6 - 5.0 BAR
1	75%	DR110-06	3.1 - 5.0 BAR
1	Drift Reduction	MR110-04	1.0 - 2.5 BAR
	Distribution in	MR110-05	1.6 - 5.0 BAR
		MR110-06	1.6 - 5.0 BAR
		SR110-05	1.0 - 1.5 BAR

LERAP RATING	Nozzle	Pressure Range
	DR110-025	2.6 - 3.5 BAR
**	DR110-03	3.1 - 5.0 BAR
50%	MR110-04	2.6 - 3.5 BAR
Drift Reduction	SR110-05	1.6 - 3.0 BAR
More information or	LERAP certification	, process, and the m

SR110-05 1.6 - 3.0 BAR e information on LERAP certification, process, and the most up to date listing of approved nozzles and r ratings, is available from the Health and Safety Executive (HSE), also available online @

For the updated list on COMBO-JET nozzles, visit www.wilger.net/LERAP

More information on LEHAP certification, process, and the most up to date listing of approved nozzles and their ratings, is available from the Health and Safety Executive (HSE), also available online @ https://secure.pesticides.gov.uk/SprayEquipment



COMBO-JET 80° Spray Tips - PWM Spray Systems

Fine (F)

Comprehensive rate & speed charts for any nozzle spacing/speed/rate is available on Tip Wizard. Try it today!

Disclaimer: These charts are published for comparative purposes to demonstrate the differences in the series of Combo-Jet® spray tips. Data used to populate this chart is extrapolated from third party testing data from a controlled conditions test with water as the testing solution. Actual spray applications with active chemical ingredients may change the spray dynamics and spray tip performance specifications. Wilger is not liable for any misuse or misrepresentation of this information, leading to (but not limited to) incorrect spray application, crop damage, or any other harm. (Not limited to human, livestock or environmental). Always verify these charts with the most recent charts found on the www.wilger.net, and ALWAYS follow chemical label nozzle requirements.

ASABE Spray Classification (ASABE S572.1 Standard)
Spray quality is categorized based on DV0.1 and VMD droplet sizes.

Objective testing data (by 3rd party), from spray spectrum recording equipment (without wind tunnel coarse (C)
use), has been used to classify spray quality for this chart. Extra data (e.g. VMD, etc.) can vary between testing equipment and method, and is provided as an educational resource only.

Tips sized up to 110-06 verified on Phase Doppler Particle Analyzer (PDPA); tips sized over 110-06 verified on Malvern.

VMD (Volume Median Diameter) The median droplet (in μ) for a sprayed volume. Half of the volume is made of droplets smaller, with half made up of droplets larger.

% <141µ (% Driftable Fines) Percentage of volume which is likely to drift. As wind & boom height increase, observed spray drift will increase substantially.

% <600µ (% of Small Droplets) % of volume which is made up of 'small' droplets, useful for coverage. As % of useful droplets lowers overall coverage is reduced.

Duty Cycle (Effective 'on time' of solenoid)

The duty cycle is the effective 'on time' of a PWM solenoid. Generally speed ranges are based on a 25% - 100% duty cycle. When selecting a nozzle, often a duty cycle of 60-80% is recommended at typical speeds, providing flexibility for upper speed & turning situations, as well as slower spraying speeds. It is not advised to spray below 40% duty cycle.

Calculating Duty Cycle on Printed Charts (Useful for nozzle sizing & selection) On Wilger printed charts, typically a SPEED RANGE is provided, but the duty cycle % is a dynamic factor based on the sprayers travel speed. To calculate a duty cycle at a given travel speed, divide CURRENT sprayer speed into max nozzle speed. (e.g. 15mph / 20mph max = 75% duty cycle)

upper speed &	x turning s	แนสแบกร	, as well	as slower spra	iying speeds. It i	s not advised to	spray below 4	₩ du	ıy cycle.	_ _	CURKEN	ı spr	ayer sp	eeu INTO	inax n	uzzie	speea.	(e.g. 15	mpn / 2	viiipn	max =	75% QU	ity cycle
Nozzle Size &	Flow Rate	Boom	Tip	Applio	cation Rate ir on 20" Noz	uS Gallons zle Spacing	/ Acre			Classi	ification	; VM				%<1				0μ (S		roplets) ° Series	_
Angle	USGPM	PSI	psi	@ S	Sprayer Speed		lour	Class			s <600	Clace		° Serie		Clace		° Serie		Clace			
	Flow	Boom	Tip		ayer Speed (o						70-005												
	us gpm		psi	2gpa	3gpa	4 _{GPA}	5gpa				<600												
	0.035	20	20	1.3-5.3	0.9-3.5	0.7-2.6	0.5-2.1	F	167		100%												
	0.040	25	25	1.5-5.9	1-3.9	0.7-2.9	0.6-2.3	F	157		100%					M	261	11%		С	311		100%
80	0.043	30	30	1.6-6.4	1.1-4.3	0.8-3.2	0.7-2.6	F	149		100%					M	236	17%		С	276	11%	
-005	0.047	35	35	1.7-6.9	1.2-4.6	0.9-3.5	0.7-2.8	F	142		100%					M F	217	22%		M	250	16%	
Nozzles	0.050	40 45	40 45	1.9-7.4 2-7.9	1.3-5 1.3-5.3	0.9-3.7 1-3.9	0.8-3 0.8-3.2	F	137 132		100% 100%					F	201 189	30%	96% 95%	M F	230 213	19% 23%	
	0.056	50	50	2.1-8.3	1.4-5.5	1.1-4.2	0.8-3.3	F	128		100%					F	178		94%	Ė	200	25%	
	0.061	60	60	2.3-9.1	1.5-6.1	1.1-4.5	0.9-3.6	F	121		100%					F	161		93%	F	178		100%
	0.064	65	65	2.4-9.5	1.6-6.3	1.2-4.7	1-3.8	F	118		100%					F	154		92%	F	169	33%	
	0.066	70	70	2.5-9.8	1.6-6.5	1.2-4.9	1-3.9	F	116		100%					F	148		91%	F	161		100%
	0.071	80	80	2.8-11	1.8-7	1.3-5.3	1.1-4.2	F	111		100%	000	2 2227	"4000	0.0007	F	138		90%	F	148	38%	
	Flow	Boom	Tip		ayer Speed (o)-0067		0-0067			#4028			0-0067		0-0067		0-0067	#40280	
	us gpm 0.047	psi 20	psi 20	2 _{GPA} 1.8-7	3 _{GPA} 1.2-4.7	4 _{GPA} 0.9-3.5	5gpa 0.7-2.8	F	VMD 199		<600 100%	Uldss	VMD	<141	<600	UldSS	VMD	<141	<600	UldSS	VMD	<141	<000
	0.053	25	25	2-7.9	1.3-5.2	1-3.9	0.8-3.1	F	183		100%					М	231	18%	99%	С	337	6%	100%
80	0.058	30	30	2.2-8.6	1.4-5.7	1.1-4.3	0.9-3.4	F	171		100%					F	211	24%		Č	308		100%
-0067	0.063	35	35	2.3-9.3	1.6-6.2	1.2-4.7	0.9-3.7	F	161	40%	100%					F	195	29%	97%	С	285	11%	100%
Nozzles	0.067	40	40	2.5-9.9	1.7-6.6	1.3-5	1-4	F	153		100%					F	182	33%		M	267		100%
	0.071	45	45	2.8-11	1.8-7	1.3-5.3	1.1-4.2	F	147		100%					F	171	37%		M	252		100%
	0.075	50 60	50 60	2.8-11 3-12	1.9-7.4 2-8.1	1.4-5.6 1.5-6.1	1.1-4.4 1.2-4.9	F	141 131		100% 100%					F	162 148	40%		M	239 218	20%	100%
	0.002	65	65	3.3-13	2.1-8.5	1.6-6.3	1.3-5.1	F	128		100%					F	142	49%		F	210	21%	
	0.089	70	70	3.3-13	2.2-8.8	1.7-6.6	1.3-5.3	F	124		100%					F	136		91%	F	202	22%	
	0.095	80	80	3.5-14	2.4-9.4	1.8-7	1.4-5.6	F	118		100%					F	127	55%	90%	F	189	24%	100%
	Flow	Boom	Tip		ayer Speed (o			ER8	0-01		70-01	SR	30-01	#402		MR	80-01		90-01	DR8	30-01	#4028	
	us gpm 0.07	psi	psi	2GPA	3GPA	4GPA	5GPA	Class F	VMD 176		<600	Class C	VMD	<141		Class	VMD	<141	<600	Class	VMD	<141	<600
	0.07	20 25	20 25	2.5-10 3-12	1.8-7 2-7.8	1.3-5.2 1.5-5.9	1.1-4.2 1.2-4.7	F	165		100% 100%	M	293 259	8% 15%	97% 97%								
80	0.00	30	30	3.3-13	2.2-8.6	1.6-6.4	1.3-5.1	F	156		100%	M	234	20%	97%	М	219	23%	97%	С	312	10%	94%
-01	0.09	35	35	3.5-14	2.3-9.2	1.7-6.9	1.4-5.5	F	149		100%	F	215	25%	97%	F	204	27%		Č	292	12%	
Nozzles	0.10	40	40	3.8-15	2.5-9.9	1.9-7.4	1.5-5.9	F	144		100%	F	199	29%		F	192	30%	97%	С	275	14%	
	0.11	45	45	4-16	2.5-10	2-7.9	1.6-6.3	F	139		100%	<u>_F_</u>	187	33%	97%	F	182	33%		M	261		
	0.11	50	50	4.3-17	2.8-11	2.1-8.3	1.7-6.6	F	135		100%	÷.	176	36%	98%	F	173	36%		M	249	17%	
	0.12	60 65	65	4.5-18 4.8-19	3-12 3.3-13	2.3-9.1 2.4-9.4	1.8-7.3 1.9-7.6	F	128 125		100% 100%	÷	159 152	41%	98% 98%	F	159 153	40% 42%		M	230 221	19%	99% 100%
	0.13	70	70	5-20	3.3-13	2.5-9.8	2-7.8	F	122		100%	÷	146	46%		F	148	44%		F	214	21%	
	0.14	80	80	5.3-21	3.5-14	2.5-10	2.1-8.4	F	117		100%	Ė	135	50%		F	139	48%		F	202	23%	
	Flow	Boom	Tip		yer Speed (o				0-015		70-015	SR8				MR8				DR8			
	us gpm	psi	psi	3gpa	4gpa	5gpa	6gpa		VMD		<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	0.11	20 25	20 25	2.5-10 3-12	2-7.8 2.2-8.8	1.6-6.3 1.8-7	1.3-5.2 1.5-5.8	F	200 189		100%	C	287	12%	94%								
80	0.12	30	30	3.3-13	2.4-9.6	1.9-7.7	1.6-6.4	F	180		100%	M	264	16%	95%	С	324	10%	94%	VC	419	4%	87%
-015	0.13	35	35	3.5-14	2.5-10	2.1-8.3	1.7-6.9	F	173		100%	M	245	19%	96%	C	302	12%		VC	398	5%	89%
Nozzles	0.15	40	40	3.8-15	2.8-11	2.2-8.9	1.9-7.4	F	167	34%	100%	M	231	22%	96%	Č	285	14%	96%	С	381	6%	90%
	0.16	45	45	4-16	3-12	2.4-9.4	2-7.8	F	162		100%	M	219	24%	97%	M	270	16%		C	367	6%	91%
	0.17	50	50	4.3-17	3-12	2.5-9.9	2.1-8.3	F	158		100%	F	208	26%	97%	M	257	17%	97%	С	354	7%	92%
	0.18 0.19	60 65	59 64	4.5-18 4.8-19	3.5-14 3.5-14	2.8-11 2.8-11	2.3-9.1	F	151 148		100% 100%	F	191 184	30%	97%	M	237 228	19%		C	333 325	8% 8%	94%
	0.19	70	69	5-20	3.5-14	3-12	2.4-9.4 2.5-9.8	F	148		100%	F	178	31%	97% 98%	M	228	21% 22%		C	317	9%	95%
	0.21	80	79	5.3-21	4-16	3.3-13	2.5-3.0	F	140		100%	F	168	35%	98%	F	208	23%		C	303	10%	95%
	Flow	Boom	Tip	Spra	ayer Speed (o	n 20" spacin	g) @	ER8	0-02	#402	70-02		30-02	#402	88-02		80-02	#402	90-02		30-02	#4028	80-02
	us gpm		psi	3 _{GPA}	4GPA	5 _{GPA}	6GPA	Class			<600		VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	0.14		20	3.5-14	2.5-10	2.1-8.3	1.7-6.9	F		28%	100%	C-	275	100/	0.40/							<u> </u>	\vdash
80	0.16 0.17	25 30	25 29	4-16 4.3-17	3-12 3.3-13	2.3-9.3 2.5-10	2-7.8 2.1-8.5	F	177 171		100% 100%		275 258	12% 15%		С	328	8%	94%	XC	456	3%	80%
-02	0.17	35	34	4.5-17	3.5-13	2.8-11	2.1-6.5	F	166		100%	M	245	18%		С	312	10%		VC	437	4%	82%
Nozzles	0.13	40	39	5-20	3.8-15	3-12	2.5-9.8	F	162	38%	100%	M	235	20%	96%	C	299			VC	421	4%	84%
	0.21	45	44	5.3-21	4-16	3-12	2.5-10	F	158	40%	100%	M	225	22%	97%	C C	288	12%	94%	VC	408	5%	85%
	0.22	50	49	5.5-22	4-16	3.3-13	2.8-11	F	155	42%	100%	M	217	24%	97%	С	279			VC	396	5%	86%
	0.24	60	59	6-24	4.5-18	3.5-14	3-12	F	150	44%	100%	F	204	27%	98%	M	263		95%	С	376	6%	88%
	0.25	65	64	6.3-25	4.8-19	3.8-15	3.3-13	F	148	45%	100% 100%	F	199	28% 29%		M	257 251	16%		C	368	6%	89%
	0.26 0.28	70 80	69 79	6.5-26 7-28	4.8-19 5.3-21	4-16 4.3-17	3.3-13 3.5-14	F			100%	F		32%		M	240		95% 95%	C	361 347	7% 7%	89% 90%
	0.20	, JU	13	1-20	J.U-Z1	7.0-17	0.0-14		144	T-3/0	100/0		100	JZ /0	30 /0	141	240	13/0	JJ /0	0	J+1	1 /0	30 /0

NOTE: 'SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. "Shown application information is based on water @ 80°F in a controlled environment and should not be considered actual. Information is provided for comparison to other Combo-Jet® spray tips, for educational purposes only. Repeat testing results can vary.

COMBO-JET 80° Spray Tips - PWM Spray Systems

ASABE Spray Classification (ASABE S572.1 Standard)

Spray quality is categorized based on Dv0.1 and VMD droplet sizes.

Objective testing data (by, 3rd party, from spray spectrum recording equipment (without wind tunnel use), has been used to classify spray quality for this chart. Extra data (e.g. VMD, etc.) can vary hetween testing equipment and method, and is provided as an educational resource only.

Extremely Coarse (VC)

Extremely Coarse (UC)

Ultra Coarse (UC)

 $\begin{array}{ll} \textbf{VMD} \;\; \textit{(Volume Median Diameter)} \\ \text{The median droplet (in μ) for a} \end{array}$ sprayed volume. Half of the volume is made of droplets smaller, with half made up of droplets larger.

% <141 μ (% Driftable Fines) Percentage of volume which is likely to drift. As wind & boom height increase, observed spray drift will increase substantially.

% <600µ (% of Small Droplets) % of volume which is made up of small' droplets, useful for coverage As % of useful droplets lowers. overall coverage is reduced.

Duty Cycle (Effective 'on time' of solenoid)

The duty cycle is the effective 'on time' of a PWM solenoid. Generally speed ranges are based on a 25% - 100% duty cycle. When selecting a nozzle, often a duty cycle of 60-80% is recommended at typical speeds, providing flexibility for upper speed & turning situations, as well as slower spraying speeds. It is not advised to spray below 40% duty cycle. Calculating Duty Cycle on Printed Charts (Useful for nozzle sizing & selection)
On Wilger printed charts, typically a SPEED RANGE is provided, but the duty cycle % is a dynamic factor based on the sprayers travel speed. To calculate a duty cycle at a given travel speed, divide CURRENT sprayer speed into max nozzle speed. (e.g. 15mph / 20mph max = 75% duty cycle)

Nazies 1922 1921 1922 1923 1925								spray below 40													mpn			
Total Policy Po		Flow	Room	Tin	Snra	ver Sneed (n	n 20" snacin	n) @	FR8	0-025	#4027	0-025	SR8	0-025	#4028	8-025	MR8	0-025	#4029	0-025	DR8	0-025	#4028	30-02
1.07 20 19 4.3-17 3.3-13 3.5-14 3.7-12 2.2-8.6 M 234 778 10058																								
1.02													Oldoo	VIVID		~000	Oidoo	VIVID		7000	Oldoo	VIVID		100
100 102 30 29 3.3-21 4.1-16 3.3-13 2.1-11 5.10 279 109% 0.2-29 11% 57% 10.2-29 4.5-20 4.5-10 4.5-20 4.5-10 4.1-16 3.3-14 5.1-20 2.7-10 4.5-20 4.5-10 4.5-20 4.5-10 4.1-16 3.3-14 5.1-20 2.7-10 4.5-20 4.5-10 4.1-16 3.3-14 5.1-20 4.5-10 4.1-16 3.3-14 5.1-20 4.5-10 4.1-16 3.3-14 5.1-20 4.5-10 4.1-16 3.3-14 5.1-20 4.5-10 4.1-16 3.3-14 5.1-20 4.5-10 4.1-16 3.3-14 5.1-20 4.1-10													C	210	Ω0/-	Ω10/-								
No.	00																VC	420	40/	000/	VC	460	20/	770/
Nazies Q.25 AQ 39 6-24 4.5-18 3.8-15 3.12 F 195 295 1007 M 270 195 1945 C 386 056 1945 C 495 24 5.0																								
0.26																								79%
C28 90 49 68-27 5-29 4-16 35-14 F 184 31% 100% M 250 10% 10% C 332 6% 87% V 241 5% 6% 6% 325 6% 87% V 241 5% 6% 6% 325 6% 87% V 241 6% 6% 6% 6% 6% 6% 6% 6	Nozzles																							80%
0.30 0.00 58 77.5-30 55.22 4.5-18 3.5-15 F 175 384 1007 M 235 209 598 0 3.34 988 0 3.05 698 69																								82%
O.31 66 63 78-31 58-22 48-19 4-16 6 177 39% 109% M 222 21% 99% G 324 99% 89% G 337 78 38 38 65 624 48-19 4-16 6 163 38% 190% M 222 22% 99% 78 38 39 59% G 337 78 38 38 50 31 28 39 39 39 39 39 39 30 30		0.28	50	49	6.8-27	5-20	4-16	3.5-14	F	184	31%	100%	M	250	18%	95%	C	356	8%	87%	VC	410	5%	83%
0.31 65 63 7.8-31 5.8-22 4.8-19 4-16 F 177 88 91 91 91 91 91 91 91 91 91 91 91 91 91		0.30	60	58	7.5-30	5.5-22	4.5-18	3.8-15	F	175	34%	100%	M	235	20%	96%	С	333	9%	88%	С	393	6%	84%
0.33 70 68 8.32 6.24 4.8-19 4.16 F 162 38% 99% F 213 24% 97% 30 315 19% 99% C 379 7% 887 F 100 325		0.31	65	63			4.8-19		F	171			М	228				324	9%			386	6%	85%
Flow Down Ty																	C							86%
September Sept					8 8-35												Ċ				Č			87%
Signature Sign																								
0.21 20 19 3.8-15 3.12 2.5-10 19-77 M 23 17% 98%																								
0 0 25 25 24 4.3-17 3.3-14 3.12 2.2-8.6 M 224 20% 99% 03 373 7% 88% 0 0 0 25 30 29 4.3-17 3.3-15 2.4-8-16 0 25 35 34 5-20 4.3-16 3.5-14 2.5-10 1 25 10													Uldas	VIVID	\141	~000	Ulass	VIVID	\141	\000	Ulass	VIVID	\141	\00
80 0.26 30 20 4.8-19 3.8-15 3.3-13 2.4-9.5 F 20 22% 99% 0.3 49% 89% 00 437 4% 80% 02 438 39% 03 438 39% 03 438 39% 03 438 39% 03 438 39% 03 438 39% 03 438 39% 03 438 39% 03 438 39% 03 438 39% 03 438 39% 03 438 39% 03 438 39% 03 438 39% 03 438 39% 03 438 39% 03 438 39% 03 438 39% 03 438 39% 03 438 438 39% 03 438 4													0	070	70/	000/								-
Nozice Col. Associated Col. Associat																	140	40=	40/	000/		105	001	740
Nozeles Q.29 40 39 5.5.22 4.3-17 3.8-15 2.8-11 F 193 29% 99% C 314 12% 91% C 376 7% 89% C 3																								71%
0.31 45 43 5.8-23 48-19 3.8-15 3-12 F 198 27% 99% 07 300 13% 99% 07 364 8% 87% 07 426 59% 87 30 0.38 60 58 6.8-27 5.3-21 4.5-18 3.3-13 F 186 31% 99% M 270 16% 99% 07 341 180 180 180 180 180 180 180 180 180 18	-03		35				3.5-14																	74%
0.33 50 48 6-24 5-20 4-16 3-12 5 193 29% 99% 0 289 19% 92% 0 344 86 87% 10 426 59% 88 0.38 65 63 7-28 5-5-22 4.8-19 3.5-14 F 183 32% 99% M 202 17% 99% 0 332 10% 90% 0 398 70% 398 69% 30 399 77 7-8-31 6.3-25 5-3-21 3.8-15 F 175 30% 99% M 202 17% 99% 0 303 11% 90% 0 391 7% 88 60% 83 65 63 7-22 5-3-23 3.8-15 F 175 30% 99% M 202 17% 99% 0 303 11% 90% 0 391 7% 88 89% 0 303 11% 90% 0 391 7% 88 89% 0 303 11% 90% 0 391 7% 88 90% 0 304 30 28 6.3-25 5-5-20 3.3-13 2.5-10 M 231 20% 99% 0 3.65 60% 80% 60%	Nozzles	0.29	40	39	5.5-22	4.3-17	3.8-15	2.8-11	F	203	26%	99%	С	314	12%	91%	VC	395	6%	85%	VC	451	4%	76%
0.33 50 48 6-24 5-20 4-16 3-12 5F 193 29% 99% 0 299 14% 92% 0 344 8% 67% 0 426 65% 8 8 0 36 65 63 7-28 5-522 4.8-19 3.5-14 F 183 32% 99% M 26 20 17% 99% 0 332 10% 90% 0 398 68 83 0 399 M 20 68 7-325 5-8-23 4.8-19 3.5-14 F 180 32% 99% M 26 21 7% 99% 0 332 10% 90% 0 391 7% 8 8 9 8 9 8 9 9 9 9 9 9 9 9 9 9 9 9 9		0.31	45	43	5.8-23	4.8-19	3.8-15	3-12	F	198	27%	99%	С	300	13%	91%	С	378	7%	86%	VC	437	5%	78%
0.36 60 58 8 6.8-27 5.3-21 4.5-18 3.3-13 F 186 31%, 99% M 270 18%, 99% C 331 9%, 99% M 20 30 30 8 6 56 37 -228 5.5-22 4.8-19 3.5-14 F 180 33%, 99% M 251 18%, 99% C 332 10%, 99% C 391 17%, 384 0.42 80 77 7.8-33 6.3-25 5.3-21 3.8-15 F 175 33%, 99% M 251 18%, 99% C 332 10%, 99% D 391 17%, 384 0.42 18%			50						F															80%
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0.39 70 68 73-29 58-23 48-19 35-14 F 190 33% 99% M 250 18% 93% C 323 10% 99% C 391 7% 7% 18 78 78 18 78 78 18 78 7																	С							83%
1.42 20																								
Flow Boom Tip Sprayer Speed (or 20' Spaeling)															10%	94%	C	308			C			85%
						ver Speed (o											MR	20-04						
0.27 20 19 5-20 4-16 2.8-11 2-8-11 M 264 16% 99% C 377 5% 85% C 428 5% 79% XC 551 286 40 40 36 35 35 36 86-27 55-22 3.5-14 2.8-11 M 291 23% 99% C 376 6% 86% C 428 5% 79% XC 551 2% 66 6% 86% C 428 5% 79% XC 551 2% 66 6% 86% C 428 5% 79% XC 551 2% 66 6% 86% C 428 5% 79% XC 551 2% 66 6% 86% C 428 5% 79% XC 551 2% 66 6% 86% C 428 5% 79% XC 551 2% 66 6% 86% C 428 5% 79% XC 551 2% 66 6% 86% C 428 5% 79% XC 551 2% 66 6% 86% C 428 5% 79% XC 551 2% 66 6% 86% C 428 5% 79% XC 551 2% 66 6% 86% C 428 5% 79% XC 551 2% 66 6% 86% C 428 5% 79% XC 551 2% 66 6% 86% C 428 5% 79% XC 551 3% 67 6% 6% 6% 6% 86% C 428 5% 79% XC 551 3% 67 6% 6% 6% 6% 6% 86% C 428 5% 79% XC 551 3% 67 6% 6% 6% 6% 6% 6% 6								9) ♥ 10cm																
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Provided Heat Provided He			50	45	6.5-26	5-20	4-16			241	21%	95%	С											68%
Flow		0.58	50 60	45 54	6.5-26 7.3-29	5-20 5.5-22	4-16 4.3-17	3.5-14	M	241 230	21% 23%	95% 95%	C C	309	13%	88%	VC	428	5%	78%	XC	503	3%	68%
Flow Boom Tip Sprayer Speed (on 20" spacing)		0.58 0.61	50 60 65	45 54 59	6.5-26 7.3-29 7.5-30	5-20 5.5-22 5.8-23	4-16 4.3-17 4.5-18	3.5-14 3.8-15	M	241 230 225	21% 23% 24%	95% 95% 95%	C C	309 299	13% 13%	88% 89%	VC VC	428 419	5% 6%	78% 79%	XC	503 494	3% 3%	69%
Nozzles Us gpm		0.58 0.61 0.63	50 60 65 70	45 54 59 63	6.5-26 7.3-29 7.5-30 7.8-31	5-20 5.5-22 5.8-23 5.8-23	4-16 4.3-17 4.5-18 4.8-19	3.5-14 3.8-15 4-16	M M M	241 230 225 221	21% 23% 24% 25%	95% 95% 95% 95%	CCCC	309 299 289	13% 13% 14%	88% 89% 89%	VC VC C	428 419 410	5% 6% 6%	78% 79% 80%	XC XC	503 494 486	3% 3% 4%	69% 71%
0.40 20 17 4-16 3-12 2.5-9.8 2-7.8 C 331 11% 92% XC 456 3% 76% XC 48-19 3.5-14 3.12 2.2-8.8 C 316 339 92% XC 456 3% 76% XC 544 2% 61% XC 613 1% 48 48 48 48 48 48 48 4		0.58 0.61 0.63 0.67	50 60 65 70 80	45 54 59 63 72	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33	5-20 5.5-22 5.8-23 5.8-23 6.3-25	4-16 4.3-17 4.5-18 4.8-19 5-20	3.5-14 3.8-15 4-16 4.3-17	M M M F	241 230 225 221 214	21% 23% 24% 25% 27%	95% 95% 95% 95% 95%	C C C C	309 299 289 271	13% 13% 14% 15%	88% 89% 89% 90%	VC VC C	428 419 410 396	5% 6% 6% 7%	78% 79% 80% 82%	XC XC XC VC	503 494 486 471	3% 3% 4% 4%	69% 71% 73%
80		0.58 0.61 0.63 0.67 Flow	50 60 65 70 80 Boom	45 54 59 63 72 Tip	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra	5-20 5.5-22 5.8-23 5.8-23 6.3-25 yer Speed (o	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin	3.5-14 3.8-15 4-16 4.3-17 g) @	M M M F ER8	241 230 225 221 214 30-06	21% 23% 24% 25% 27% #402	95% 95% 95% 95% 95% 70-06	C C C C SR8	309 299 289 271 30-06	13% 13% 14% 15% #4028	88% 89% 89% 90% 88-06	VC VC C C MR8	428 419 410 396 80-06	5% 6% 6% 7% #4029	78% 79% 80% 82% 90-06	XC XC XC VC DR8	503 494 486 471 30-06	3% 3% 4% 4% #4028	69% 71% 73% 80-06
80		0.58 0.61 0.63 0.67 Flow us gpm	50 60 65 70 80 Boom psi	45 54 59 63 72 Tip psi	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5	5-20 5.5-22 5.8-23 5.8-23 6.3-25 yer Speed (o 10gpa	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gpa	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa	M M F ER8	241 230 225 221 214 80-06 VMD	21% 23% 24% 25% 27% #402 <141	95% 95% 95% 95% 95% 70-06 <600	C C C C SR8	309 299 289 271 30-06	13% 13% 14% 15% #4028	88% 89% 89% 90% 88-06	VC VC C C MR8	428 419 410 396 80-06	5% 6% 6% 7% #4029	78% 79% 80% 82% 90-06	XC XC XC VC DR8	503 494 486 471 30-06	3% 3% 4% 4% #4028	69% 71% 73% 80-06
Nozzles Noz		0.58 0.61 0.63 0.67 Flow us gpm 0.40	50 60 65 70 80 Boom psi 20	45 54 59 63 72 Tip psi 17	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16	5-20 5.5-22 5.8-23 5.8-23 6.3-25 yer Speed (o 10gpa 3-12	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gpa 2.5-9.8	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8	M M F ER8 Class	241 230 225 221 214 80-06 VMD 331	21% 23% 24% 25% 27% #4027 <141 11%	95% 95% 95% 95% 95% 70-06 <600 92%	C C C C SR8	309 299 289 271 30-06 VMD	13% 13% 14% 15% #4028 <141	88% 89% 89% 90% 88-06 <600	VC VC C C MR8	428 419 410 396 80-06	5% 6% 6% 7% #4029	78% 79% 80% 82% 90-06	XC XC XC VC DR8	503 494 486 471 30-06	3% 3% 4% 4% #4028	69% 71% 73% 80-06
Nozzles	00-	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44	50 60 65 70 80 Boom psi 20 25	45 54 59 63 72 Tip psi 17 22	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18	5-20 5.5-22 5.8-23 5.8-23 6.3-25 yer Speed (or 10gpa 3-12 3.3-13	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gpa 2.5-9.8 2.8-11	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8 2.2-8.8	M M F ER8 Class C	241 230 225 221 214 80-06 VMD 331 316	21% 23% 24% 25% 27% #402 <141 11% 13%	95% 95% 95% 95% 95% 70-06 <600 92% 92%	C C C C SR8 Class	309 299 289 271 30-06 VMD 456	13% 13% 14% 15% #4028 <141	88% 89% 89% 90% 88-06 <600	VC VC C C MR8	428 419 410 396 80-06 VMD	5% 6% 6% 7% #4029 <141	78% 79% 80% 82% 90-06 <600	XC XC XC VC DR8 Class	503 494 486 471 30-06 VMD	3% 4% 4% #4028 <141	69% 71% 73% 80-06 <60
0.59 45 39 6-24 4.5-18 3.8-15 3-12 C 281 19% 91% C 382 7% 84% XC 483 4% 71% XC 555 2% 58 58 50 43 6.3-25 4.8-19 3.8-15 3-12 C 275 21% 91% C 382 7% 845% XC 483 4% 71% XC 555 2% 58 48 48 48 74% XC 545 58 48 48 74% XC 545 58 48 48 48 74% XC 545 58 48 48 74% XC 545 58 58 58 58 58 58 5		0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48	50 60 65 70 80 Boom psi 20 25 30	45 54 59 63 72 Tip psi 17 22 26	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19	5-20 5.5-22 5.8-23 5.8-23 6.3-25 yer Speed (o 10gPA 3-12 3.3-13 3.5-14	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gpa 2.5-9.8 2.8-11 3-12	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8 2.2-8.8 2.4-9.6	M M F ER8 Class C	241 230 225 221 214 80-06 VMD 331 316 305	21% 23% 24% 25% 27% #402 <141 11% 13% 15%	95% 95% 95% 95% 70-06 <600 92% 92%	C C C C SR8 Class	309 299 289 271 30-06 VMD 456 435	13% 13% 14% 15% #4028 <141 3% 4%	88% 89% 89% 90% 88-06 <600 76% 79%	VC VC C C MR8 Class	428 419 410 396 30-06 VMD	5% 6% 6% 7% #4029 <141	78% 79% 80% 82% 90-06 <600	XC XC XC VC DR8 Class	503 494 486 471 30-06 VMD	3% 3% 4% 4% #4028 <141	69% 71% 73% 80-06 <600
0.59 45 39 6-24 4.5-18 3.8-15 3-12 C 281 19% 91% C 382 7% 84% XC 483 4% 71% XC 555 2% 58 58 50 43 6.3-25 4.8-19 3.8-15 3-12 C 275 21% 91% C 382 7% 845% XC 483 4% 71% XC 555 2% 58 48 48 48 74% XC 545 58 48 48 74% XC 545 58 48 48 48 74% XC 545 58 48 48 74% XC 545 58 58 58 58 58 58 5	-06	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52	50 60 65 70 80 Boom psi 20 25 30	45 54 59 63 72 Tip psi 17 22 26 30	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21	5-20 5.5-22 5.8-23 5.8-23 6.3-25 yer Speed (o 10 _{GPA} 3-12 3.3-13 3.5-14 4-16	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gPA 2.5-9.8 2.8-11 3-12 3.3-13	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8 2.2-8.8 2.4-9.6 2.5-10	M M F ER8 Class C C C	241 230 225 221 214 30-06 VMD 331 316 305 295	21% 23% 24% 25% 27% #402 <141 11% 13% 15%	95% 95% 95% 95% 95% 70-06 <600 92% 92% 91%	C C C C SR8	309 299 289 271 30-06 VMD 456 435 418	13% 14% 15% #4028 <141 3% 4% 5%	88% 89% 90% 38-06 <600 76% 79%	VC VC C C MR8 Class	428 419 410 396 30-06 VMD 544 524	5% 6% 6% 7% #4029 <141 2% 3%	78% 79% 80% 82% 90-06 <600 61% 64%	XC XC VC DR8 Class XC XC	503 494 486 471 30-06 VMD 613 595	3% 4% 4% #4028 <141 1%	69% 71% 73% 80-06 <60 48% 52%
0.69 60 52 6.8-27 5-20 4.3-17 3.5-14 M 265 23% 90% C 364 8% 87% VC 463 4% 74% VC 535 3% 61 61 65 57 7-28 5.3-21 4.5-18 3.5-14 M 265 23% 90% C 357 9% 87% VC 454 5% 75% XC 527 3% 65 65 65 65 65 65 65 6	-06	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52 0.56	50 60 65 70 80 Boom psi 20 25 30 35 40	45 54 59 63 72 Tip psi 17 22 26 30 35	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22	5-20 5.5-22 5.8-23 5.8-23 6.3-25 yer Speed (o 10gPA 3-12 3.3-13 3.5-14 4-16 4.3-17	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gPA 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8 2.2-8.8 2.4-9.6 2.5-10 2.8-11	M M F ER8 Class C C C C	241 230 225 221 214 30-06 VMD 331 316 305 295 287	21% 23% 24% 25% 27% #402 <141 11% 13% 15% 17%	95% 95% 95% 95% 95% 70-06 <600 92% 91% 91%	C C C C SRECCIASS	309 299 289 271 30-06 VMD 456 435 418 404	13% 13% 14% 15% #4028 <141 3% 4% 5% 6%	88% 89% 90% 38-06 <600 76% 79% 81% 82%	VC VC C C MR8 Class XC XC	428 419 410 396 30-06 VMD 544 524 509	5% 6% 6% 7% #4029 <141 2% 3% 3%	78% 79% 80% 82% 90-06 <600 61% 64% 67%	XC XC VC DR8 Class XC XC	503 494 486 471 30-06 VMD 613 595 579	3% 4% 4% #4028 <141 1% 1% 2%	69% 71% 73% 80-06 <60 48% 52% 54%
0.69 60 52 6.8-27 5-20 4.3-17 3.5-14 M 265 23% 90% C 364 8% 87% VC 463 4% 74% VC 535 3% 61 0.71 65 57 7-28 5.3-21 4.5-18 3.5-14 M 265 23% 90% C 357 9% 87% VC 454 5% 75% XC 527 3% 65 0.74 70 61 7.3-29 5.5-22 4.5-18 3.8-15 M 256 24% 90% C 350 9% 88% VC 447 5% 76% XC 527 3% 65 0.79 80 70 7.8-31 6-24 5-20 4-16 M 249 26% 90% C 338 10% 89% VC 447 5% 76% XC 506 3% 66 0.79 80 70 7.8-31 6-24 5-20 4-16 M 249 26% 90% C 338 10% 89% VC 443 5% 78% XC 506 3% 66 40 40 40 40 40 40 40	-06	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52 0.56 0.59	50 60 65 70 80 Boom psi 20 25 30 35 40	45 54 59 63 72 Tip psi 17 22 26 30 35 39	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24	5-20 5.5-22 5.8-23 5.8-23 6.3-25 yer Speed (o 10gPA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gpA 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14 3.8-15	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8 2.2-8.8 2.4-9.6 2.5-10 2.8-11 3-12	M M F ER8 Class C C C C	241 230 225 221 214 30-06 VMD 331 316 305 295 287 281	21% 23% 24% 25% 27% #402 <141 11% 13% 15% 17% 18%	95% 95% 95% 95% 95% 70-06 <600 92% 91% 91% 91%	C C C C SR8 Class XC VC VC VC C C	309 299 289 271 80-06 VMD 456 435 418 404 392	13% 13% 14% 15% #4028 <141 3% 4% 5% 6% 7%	88% 89% 90% 38-06 <600 76% 79% 81% 82% 84%	VC VC C C Class Class XC XC XC	428 419 410 396 30-06 VMD 544 524 509 495	5% 6% 6% 7% #4029 <141 2% 3% 3% 3%	78% 79% 80% 82% 90-06 <600 61% 64% 67% 69%	XC XC VC DR8 Class XC XC XC	503 494 486 471 80-06 VMD 613 595 579 566	3% 3% 4% 4% #4028 <141 1% 1% 2% 2%	69% 71% 73% 80-06 <60 48% 52% 54% 56%
Note	-06	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52 0.56 0.59 0.63	50 60 65 70 80 Boom psi 20 25 30 35 40	45 54 59 63 72 Tip psi 17 22 26 30 35 39 43	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25	5-20 5.5-22 5.8-23 6.3-25 yer Speed (o 10ePA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gPA 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14 3.8-15	3.5-14 3.8-15 4-16 4.3-17 9) @ 15gpa 2-7.8 2.2-8.8 2.4-9.6 2.5-10 2.8-11 3-12 3-12	M M F ER8 Class C C C C	241 230 225 221 214 30-06 VMD 331 316 305 295 287 281 275	21% 23% 24% 25% 27% *#402 <141 11% 13% 15% 17% 18% 19% 21%	95% 95% 95% 95% 95% 70-06 <600 92% 92% 91% 91% 91% 91%	C C C C SR8 Class VC VC VC VC C C C	309 299 289 271 30-06 VMD 456 435 418 404 392 382	13% 13% 14% 15% #4028 <141 3% 4% 5% 6% 7% 7%	88% 89% 90% 38-06 <600 76% 79% 81% 82% 84% 85%	VC VC C C C MR8 Class XC XC XC XC XC	428 419 410 396 80-06 VMD 544 524 509 495 483	5% 6% 6% 7% #4029 <141 2% 3% 3% 3% 4%	78% 79% 80% 82% 90-06 <600 61% 64% 67% 69% 71%	XC XC VC DR8 Class XC XC XC	503 494 486 471 80-06 VMD 613 595 579 566	3% 3% 4% 4% #4028 <141 1% 1% 2% 2% 2%	69% 71% 73% 80-06 <60 48% 52% 54%
Note	-06	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52 0.56 0.59 0.63	50 60 65 70 80 Boom psi 20 25 30 35 40 45 50	45 54 59 63 72 Tip psi 17 22 26 30 35 39 43	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25	5-20 5.5-22 5.8-23 6.3-25 yer Speed (o 10ePA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gPA 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14 3.8-15	3.5-14 3.8-15 4-16 4.3-17 g) @ 15GPA 2-7.8 2.2-8.8 2.4-9.6 2.5-10 2.8-11 3-12 3.5-14	M M F ER8 Class C C C C C	241 230 225 221 214 30-06 VMD 331 316 305 295 287 281 275 265	21% 23% 24% 25% 27% #402 <141 11% 13% 15% 17% 18% 19% 21% 23%	95% 95% 95% 95% 95% 70-06 <600 92% 91% 91% 91% 91% 91% 91%	C C C C C SR8 XC VC VC VC C C C C C C C C C C C C C C	309 299 289 271 30-06 VMD 456 435 418 404 392 382	13% 13% 14% 15% #4028 <141 3% 4% 5% 6% 7% 7%	88% 89% 90% 38-06 <600 76% 79% 81% 82% 84% 85%	VC VC C C C MR8 Class XC XC XC XC XC	428 419 410 396 80-06 VMD 544 524 509 495 483	5% 6% 6% 7% #4029 <141 2% 3% 3% 3% 4%	78% 79% 80% 82% 90-06 <600 61% 64% 67% 69% 71%	XC XC VC DR8 Class XC XC XC XC	503 494 486 471 30-06 VMD 613 595 579 566 555	3% 3% 4% 4% #4028 <141 1% 1% 2% 2% 2%	69% 71% 73% 80-06 <60 48% 52% 54% 56%
Nozzles 1.00	-06	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52 0.56 0.59 0.63	50 60 65 70 80 Boom psi 20 25 30 35 40 45 50 60	45 54 59 63 72 Tip psi 17 22 26 30 35 39 43 52	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25 6.8-27	5-20 5.5-22 5.8-23 6.3-25 yer Speed (o 10gPA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19 5-20	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gPA 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14 3.8-15 3.8-15 4.3-17	3.5-14 3.8-15 4-16 4.3-17 g) @ 15GPA 2-7.8 2.2-8.8 2.4-9.6 2.5-10 2.8-11 3-12 3.5-14	M M F ER8 Class C C C C C C	241 230 225 221 214 30-06 VMD 331 316 305 295 287 281 275 265	21% 23% 24% 25% 27% #402 <141 11% 13% 15% 17% 18% 19% 21% 23%	95% 95% 95% 95% 95% 70-06 <600 92% 91% 91% 91% 91% 91% 91%	C C C C C SR8 XC VC VC VC C C C C C C C C C C C C C C	309 299 289 271 30-06 VMD 456 435 418 404 392 382 364	13% 13% 14% 15% *#4028 <141 3% 4% 5% 6% 7% 7% 8%	88% 89% 89% 90% 38-06 <600 76% 81% 82% 84% 85% 87%	VC VC C C MR8 Class XC XC XC XC XC XC XC	428 419 410 396 30-06 VMD 544 524 509 495 483 463	5% 6% 6% 7% #4029 <141 2% 3% 3% 3% 4% 4%	78% 79% 80% 82% 90-06 <600 61% 64% 67% 69% 71%	XC XC VC DR8 Class XC XC XC XC XC	503 494 486 471 30-06 VMD 613 595 579 566 555 535	3% 3% 4% 4% *#4028 <141 1% 2% 2% 2% 2% 3%	69% 71% 73% 80-06 <600 48% 52% 56% 61%
Flow Boom Us gpm psi Ds Ds Ds Ds Ds Ds Ds	-06	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52 0.56 0.59 0.63 0.69	50 60 65 70 80 Boom psi 20 25 30 35 40 45 50 60	45 54 59 63 72 Tip psi 17 22 26 30 35 39 43 52 57	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25 6.8-27 7-28	5-20 5.5-22 5.8-23 6.3-25 yer Speed (o 10gPA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19 5-20 5.3-21	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gPA 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14 3.8-15 3.8-15 4.3-17 4.5-18	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8 2.2-8.8 2.4-9.6 2.5-10 2.8-11 3-12 3.5-14	M M M F ER8 Class C C C C C C	241 230 225 221 214 30-06 VMD 331 316 305 295 287 281 275 265 260	21% 23% 24% 25% 27% #402 <141 11% 13% 15% 17% 18% 21% 23% 23%	95% 95% 95% 95% 95% 70-06 <600 92% 91% 91% 91% 91% 90%	C C C C SR8	309 299 289 271 30-06 VMD 456 435 418 404 392 382 364 357	13% 14% 15% #4028 <141 3% 4% 5% 6% 7% 7% 8% 9%	88% 89% 89% 90% 38-06 <600 76% 81% 82% 84% 85% 87%	VC VC C C MR8 Class XC XC XC XC VC VC	428 419 410 396 30-06 VMD 544 524 509 495 483 463 454	5% 6% 6% 7% #4029 <141 2% 3% 3% 4% 4% 5%	78% 79% 80% 82% 90-06 <600 61% 64% 67% 69% 71% 74%	XC XC VC DR8 Classs XC XC XC XC XC XC	503 494 486 471 30-06 VMD 613 595 579 566 555 535 527	3% 3% 4% 4% #4028 <141 1% 2% 2% 2% 2% 3% 3%	69% 71% 73% 80-06 <600 48% 52% 54% 56% 61% 63%
Nozzles Us gpm	-06	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52 0.56 0.59 0.69 0.71 0.74	50 60 65 70 80 Boom psi 20 25 30 35 40 45 50 60 65 70	45 54 59 63 72 Tip psi 17 22 26 30 35 39 43 52 57 61	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25 6.8-27 7-28 7.3-29	5-20 5.5-22 5.8-23 5.8-23 6.3-25 yer Speed (o 10gPA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19 5-20 5.3-21 5.5-22	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12GPA 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14 3.8-15 4.3-17 4.5-18	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7-8 2.2-8.8 2.4-9.6 2.5-10 2.8-11 3-12 3-12 3.5-14 3.8-15	M M M F ER8 Class C C C C C C C	241 230 225 221 214 30-06 VMD 331 316 305 295 287 281 275 265 260 256	21% 23% 24% 25% 27% #402 <141 11% 13% 15% 17% 18% 21% 23% 23% 24%	95% 95% 95% 95% 900 90% 91% 91% 91% 91% 90% 90%	C C C C C SR8 SVC VC VC C C C C C C C C C C C C C C C C	309 299 289 271 30-06 VMD 456 435 418 404 392 382 364 357 350	13% 14% 15% #4023 <141 3% 4% 5% 6% 7% 7% 8% 9%	88% 89% 89% 90% 38-06 <600 76% 81% 82% 84% 85% 87% 87%	VC VC C C MR8 Class XC XC XC XC VC VC VC	428 419 410 396 30-06 VMD 544 524 509 495 483 463 454 447	5% 6% 6% 7% #4029 <141 2% 3% 3% 4% 4% 5% 5%	78% 79% 80% 82% 90-06 <600 61% 64% 67% 69% 71% 74% 75%	XC XC VC DR8 Class XC	503 494 486 471 30-06 VMD 613 595 579 566 555 535 527 519	3% 3% 4% 4% #4023 <141 1% 2% 2% 2% 3% 3% 3%	69% 71% 73% 80-06 <600 48% 52% 56% 61% 63% 64%
80 0.56 25 20 3.5-14 2.8-11 2.3-9.3 2.1-8.3 VC 368 12% 86%	-06	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52 0.56 0.59 0.69 0.71 0.74 0.79	50 60 65 70 80 Boom psi 20 25 30 35 40 45 50 60 65 70 80	45 54 59 63 72 Tip psi 17 22 26 30 35 39 43 52 57 61 70	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25 6.8-27 7-28 7.3-29 7.8-31	5-20 5.5-22 5.8-23 5.8-23 6.3-25 yer Speed (or 10@PA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19 5-20 5.3-21 5.5-22 6-24	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20° spacin 12gpa 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14 3.8-15 4.3-17 4.5-18 4.5-18	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8 2.2-8.8 2.4-9.6 2.5-10 2.8-11 3-12 3-12 3.5-14 3.8-15 4-16	M M M F ER8 Class C C C C C C C C M M M	241 230 225 221 214 80-06 VMD 331 316 305 295 287 281 275 265 260 256 249	21% 23% 24% 25% 27% #402 <141 11% 13% 15% 17% 88 19% 21% 23% 23% 24% 26%	95% 95% 95% 95% 70-06 <600 92% 91% 91% 91% 91% 90% 90% 90%	C C C C SR8 XC VC VC VC C C C C C C C C C C C C C C	309 299 289 271 30-06 VMD 456 435 418 404 392 382 364 357 350 338	13% 13% 14% 15% #4020 <141 3% 6% 7% 6% 7% 8% 9% 9% 10%	88% 89% 89% 90% 38-06 <600 76% 81% 82% 84% 85% 87% 87% 88%	VC VC C C C MR8 Class XC XC XC XC VC VC VC VC	428 419 410 396 30-06 VMD 544 524 509 495 483 463 454 447 433	5% 6% 6% 7% #4029 <141 2% 3% 3% 4% 4% 5% 5%	78% 79% 80% 82% 90-06 <600 61% 64% 67% 69% 71% 74% 75% 76% 78%	XC XC XC DR8 Class XC	503 494 486 471 30-06 VMD 613 595 579 566 555 535 527 519 506	3% 3% 4% 4% #4023 <141 1% 2% 2% 2% 3% 3% 3% 3%	69% 71% 73% 80-06 <600 48% 52% 56% 61% 63% 64% 66%
80	-06	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52 0.56 0.59 0.63 0.69 0.71 0.74 0.79	50 60 65 70 80 Boom psi 20 25 30 35 40 45 50 66 70 80 Boom	45 54 59 63 72 Tip psi 17 22 26 30 35 39 43 52 57 61 70 Tip	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25 6.8-27 7-28 7.3-29 7.8-31 Spra	5-20 5.5-22 5.8-23 5.8-23 6.3-25 yer Speed (o 10geA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19 5-20 5.3-21 5.5-22 6-24 yer Speed (o	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14 3.8-15 4.3-17 4.5-18 4.5-18 5-20 n 20" spacin	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8 2.2-8.8 2.4-9.6 2.5-10 2.8-11 3-12 3.5-14 3.8-15 4-16 g) @	M M M F ER8 Class C C C C C C C C M M M M M ER8	241 230 225 221 214 30-06 VMD 331 316 305 295 287 281 275 265 260 256 249	21% 23% 24% 25% 27% *402 <141 11% 15% 17% 18% 21% 23% 23% 24% 26% #402	95% 95% 95% 95% 95% 70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 70-08	C C C C SR8 XC VC VC C C C C C C C C C C SR8	309 299 289 271 30-06 VMD 456 435 418 404 392 382 364 357 350 338 30-08	13% 13% 14% 15% #4028 <141 3% 6% 6% 7% 7% 8% 9% 9% 10% #4028	88% 89% 90% 38-06 <600 76% 79% 81% 82% 84% 85% 87% 88% 88% 88%	VC VC C C C MR8 Class XC XC XC XC VC VC VC WC MR8	428 419 410 396 30-06 VMD 544 524 509 495 483 463 454 447 433 30-08	5% 6% 6% 7% #4029 <141 2% 3% 3% 4% 4% 5% 5% 5% #4029	78% 79% 80% 82% 90-06 <600 61% 64% 67% 71% 74% 75% 76% 78% 90-08	XC XC VC DR8 Classs XC XC XC XC XC XC XC XC DR8	503 494 486 471 30-06 VMD 613 595 579 566 555 527 519 506 80-08	3% 3% 4% 4% 4402 <141 1% 2% 2% 2% 3% 3% 3% 4402	69% 71% 73% 80-06 <600 48% 52% 56% 61% 63% 64% 66% 80-08
-08 Nozzles	-06	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.52 0.56 0.59 0.63 0.69 0.71 0.74 0.79 Flow us gpm 0.40 0.40 0.40 0.40 0.40 0.40 0.40 0.52 0.56 0.59 0.63 0.63 0.63 0.63 0.63 0.63 0.63 0.63 0.63 0.63 0.63 0.63 0.63 0.64 0.65 0.65 0.65 0.65 0.65 0.65 0.75 0.	50 60 65 70 80 Boom psi 20 25 30 35 40 45 50 60 65 70 80 Boom	45 54 59 63 72 Tip psi 17 22 26 30 35 39 43 52 57 61 70 Tip psi	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25 6.8-27 7-28 7.3-29 7.8-31 Spra	5-20 5.5-22 5.8-23 6.3-25 yer Speed (o 10gPA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19 5-20 5.3-21 5.5-22 4-24 yer Speed (o 15gPA	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gpa 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14 3.8-15 3.8-15 4.3-17 4.5-18 4.5-18 4.5-18 0 0 20" spacin 18gpa	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8 2.2-8.8 2.4-9.6 2.5-10 2.8-11 3-12 3-12 3-5-14 3.5-14 3.8-15 4-16 g) @ 20gpa	M M M F ER8 Class C C C C C C C C C C C C C C C C C C	241 230 225 221 214 30-06 VMD 331 316 305 295 287 281 275 260 256 249 30-08 VMD	21% 23% 24% 25% 27% #402 <141 11% 13% 15% 17% 18% 19% 21% 23% 24% 24% 26% #402 <141	95% 95% 95% 95% 70-06 <600 92% 91% 91% 91% 91% 90% 90% 90% 70-08 <600	C C C C SR8 XC VC VC C C C C C C C C C C C C C C C C	309 299 289 271 30-06 VMD 456 435 418 404 392 382 364 357 350 338 30-08	13% 13% 14% 15% #4028 <141 3% 6% 6% 7% 7% 8% 9% 9% 10% #4028	88% 89% 90% 38-06 <600 76% 79% 81% 82% 84% 85% 87% 88% 88% 88%	VC VC C C C MR8 Class XC XC XC XC VC VC VC WC MR8	428 419 410 396 30-06 VMD 544 524 509 495 483 463 454 447 433 30-08	5% 6% 6% 7% #4029 <141 2% 3% 3% 4% 4% 5% 5% 5% #4029	78% 79% 80% 82% 90-06 <600 61% 64% 67% 71% 74% 75% 76% 78% 90-08	XC XC VC DR8 Classs XC XC XC XC XC XC XC XC DR8	503 494 486 471 30-06 VMD 613 595 579 566 555 527 519 506 80-08	3% 3% 4% 4% 4402 <141 1% 2% 2% 2% 3% 3% 3% 4402	69% 71% 73% 80-06 <600 48% 52% 56% 61% 63% 64% 66% 80-08
Nozzles 0.71 40 32 4.5-18 3.5-14 3-12 2.8-11 C 311 18% 91% UC 482 8% 60% UC 532 7% 65% UC 613 3% 53 0.75 45 36 4.8-19 3.8-15 3-12 2.8-11 M 298 19% 92% XC 466 8% 63% UC 516 7% 67% UC 599 4% 55 0.79 50 39 5-20 4-16 3.3-13 3-12 M 287 20% 92% XC 450 9% 66% UC 501 8% 69% UC 565 4% 61 0.91 65 51 5.5-22 4.3-17 3.5-14 3.3-13 M 269 23% 94% XC 424 10% 70% XC 477 9% 72% UC 565 4% 61 0.91 65 51 5.5-22 4.5-18 3.8-15 3.3-13 F 261 24% 94% XC 413 10% 71% XC 467 9% 74% UC 556 5% 62 0.94 70 55 5.8-23 4.8-19 4-16 3.5-14 F 254 25% 94% XC 402 11% 73% XC 458 10% 75% UC 548 5% 63	-06 Nozzles	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.48 0.52 0.56 0.59 0.69 0.71 0.74 0.79 Flow us gpm 0.40 0.48 0.52 0.56 0.59 0.69 0.71 0.79 0.79 0.79	50 60 65 70 80 80 80 20 25 30 35 40 45 50 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	45 54 59 63 72 Tip psi 17 22 26 30 35 39 43 52 57 61 70 Tip psi 20 20 20 20 20 20 20 20 20 20	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25 6.8-27 7-28 7.3-29 7.8-31 Spra 3.5-14	5-20 5.5-22 5.8-23 6.3-25 yer Speed (o 10gPA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19 5-20 5.3-21 5.5-22 6-24 yer Speed (o 15gPA 2.8-11	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gPA 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14 3.8-15 3.8-15 4.3-17 4.5-18 4.5-18 5-20 n 20" spacin 18gPA 2.3-9.3	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8 2.2-8.8 2.4-9.6 2.5-10 2.8-11 3-12 3-12 3-5-14 3.8-15 4-16 g) @ 20gpa 2.1-8.3	M M M F ER8 Class C C C C C C C C C C C C C C C C C C	241 230 225 221 214 30-06 VMD 331 316 305 295 287 281 275 265 260 256 249 80-08 VMD	21% 23% 24% 25% 27% <141 11% 13% 15% 17% 18% 21% 23% 24% 26% #402 <141 12%	95% 95% 95% 95% 95% 95% 95% 92% 91% 91% 91% 91% 90% 90% 90% 70-08 86%	C C C C SR8	309 299 289 271 30-06 VMD 456 435 418 404 392 382 364 357 350 338 0-08 VMD	13% 13% 14% 15% #4028 <141 3% 4% 5% 6% 7% 7% 8% 9% 9% 90 410% <141	88% 89% 89% 90% 38-06 <600 76% 81% 82% 84% 85% 87% 88% 88% 88% 38-08	VC VC C C C MR8 Class XC XC XC XC VC VC VC WC MR8	428 419 410 396 30-06 VMD 544 524 509 495 483 463 454 447 433 30-08	5% 6% 6% 7% #4029 <141 2% 3% 3% 4% 4% 5% 5% 5% #4029	78% 79% 80% 82% 90-06 <600 61% 64% 67% 71% 74% 75% 76% 78% 90-08	XC XC VC DR8 Classs XC XC XC XC XC XC XC XC DR8	503 494 486 471 30-06 VMD 613 595 579 566 555 527 519 506 80-08	3% 3% 4% 4% 4402 <141 1% 2% 2% 2% 3% 3% 3% 4402	69% 71% 73% 80-06 <600 48% 52% 56% 61% 63% 64% 66% 80-08
0.75 45 36 4.8-19 3.8-15 3-12 2.8-11 M 298 19% 92% XC 466 8% 63% UC 516 7% 67% UC 599 4% 55 0.79 50 39 5-20 4-16 3.3-13 3-12 M 287 20% 92% XC 450 9% 66% UC 501 8% 69% UC 586 4% 57 0.87 60 47 5.5-22 4.3-17 3.5-14 3.3-13 M 269 23% 94% XC 424 10% 70% XC 477 9% 72% UC 565 4% 61 0.91 65 51 5.5-22 4.5-18 3.8-15 3.3-13 F 261 24% 94% XC 413 10% 71% XC 467 9% 72% UC 556 5% 62 0.94	-06 Nozzles	0.58 0.61 0.63 0.67 Flow us qpm 0.40 0.44 0.48 0.52 0.56 0.69 0.71 0.74 0.79 Flow us qpm 0.40 0.55 0.69 0.71 0.74 0.79 0.63 0.69 0.71 0.79 0.69 0.74 0.79 0.69 0.79 0.69 0.79	50 60 65 70 80 Boom psi 20 25 30 35 50 60 65 70 80 Boom psi 22 53 30 35 50 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	45 54 59 63 72 Tip psi 17 22 26 30 35 52 57 61 70 Tip psi 22 26 20 20 20 20 20 20 20 20 20 20	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25 6.8-27 7-28 7.3-29 7.8-31 Spra 12@PA 3.5-14 3.8-15	5-20 5.5-22 5.8-23 5.8-23 6.3-25 yer Speed (o 10gea 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19 5-20 5.3-21 5.5-22 6-24 yer Speed (o 15gea 2.8-11 3-12	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gra 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14 3.8-15 4.3-17 4.5-18 5-20 n 20" spacin 18gra 2.3-9.3 2.5-10	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8 2.2-8.8 2.4-9.6 2.5-10 2.8-11 3-12 3.5-14 3.5-14 3.8-15 4-16 g) @ 20gpa 2.1-8.3 2.3-9.1	M M M F ER8 Class C C C C C C C C C C C C C C C C C C	241 230 225 221 214 00-06 VMD 331 316 305 295 287 281 275 265 260 256 249 00-08 VMD 331 316 305 295 295 295 295 295 295 295 295 295 29	21% 23% 24% 25% 27% *#402 <141 11% 15% 17% 21% 23% 24% 24% 24% 4402 4402 444 12%	95% 95% 95% 95% 95% 70-06 <600 92% 91% 91% 91% 90% 90% 90% 0-08 600 86% 88%	C C C C C SR8 VC VC VC C C C C C C C C C C C C C C C	309 299 289 271 30-06 456 435 418 404 392 382 364 357 350 350 0-08 VMD	13% 13% 14% 15% #4023 <141 3% 4% 5% 6% 7% 7% 8% 9% 90 10% #4023 <141	88% 89% 90% 90% -<600 76% 79% 81% 82% 82% 87% 87% 88% 88-08 -<600 	VC VC C C C MR8 Class XC XC XC XC VC VC VC WC MR8	428 419 410 396 30-06 VMD 544 524 509 495 483 463 454 447 433 30-08	5% 6% 6% 7% #4029 <141 2% 3% 3% 4% 4% 5% 5% 5% #4029	78% 79% 80% 82% 90-06 <600 61% 64% 67% 71% 74% 75% 76% 78% 90-08	XC XC VC DR8 Classs XC XC XC XC XC XC XC XC DR8	503 494 486 471 30-06 VMD 613 595 579 566 555 527 519 506 80-08	3% 3% 4% 4% 4402 <141 1% 2% 2% 2% 3% 3% 3% 4402	69% 71% 73% 80-06 <60 48% 52% 54% 56% 61% 63% 64% 66% 80-08
0.79	-06 Nozzles 80 -08	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52 0.56 0.59 0.63 0.69 0.71 0.74 0.79 Flow us gpm 0.63 0.69 0.71 0.79 0.63 0.69 0.79 0.63	50 60 65 70 80 Boom psi 20 25 30 35 40 45 50 60 65 70 80 Boom psi 20 25 30 33 40 45 30 30 30 30 30 30 30 30 30 30 30 30 30	45 54 59 63 72 Tip psi 17 22 26 30 35 39 43 52 57 61 70 Tip psi 20 24 28	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25 6.8-27 7-28 7.3-29 7.8-31 Spra 12GPA 3.5-14 3.8-15 4-16	5-20 5.5-22 5.8-23 5.8-23 6.3-25 yer Speed (o 10gPA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19 5-20 5.3-21 5.5-22 6-24 yer Speed (o 15gPA 2.8-11 3.3-13	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gpA 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14 3.8-15 3.8-15 4.3-17 4.5-18 4.5-18 5-20 n 20" spacin 18gpA 2.3-9.3 2.5-10 2.8-11	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8 2.2-8.8 2.4-9.6 2.5-10 2.8-11 3-12 3-12 3-5-14 3.5-14 3.8-15 4-16 g) @ 20gpa 2.1-8.3 2.3-9.1 2.5-9.9	M M M F ER8 Class C C C C C C C C C C C C C C C C C C	241 230 225 221 214 30-06 VMD 331 316 295 287 281 275 265 260 256 249 00-08 VMD 305 295 287 281 275 265 249 368 368 378 378 378 378 378 378 378 378 378 37	21% 23% 24% 25% 25% **402 <141 11% 13% 15% 17% 21% 23% 24% 26% **402 <141 12% 144 16%	95% 95% 95% 95% 70-06 <600 92% 91% 91% 91% 90% 90% 90% 600 86% 90%	C C C C C SR8 VC VC VC C C C C C SR8 Class UC UC	309 299 289 271 60-06 60 WMD 456 435 418 404 392 364 357 350 338 00-08 WMD 524 502	13% 13% 14% 15% *#4028 -141 3% 4% 5% 6% 7% 9% 99% 10% *#4028 -141 6% 7%	88% 89% 90% 90% <600 76% 81% 82% 84% 87% 88% 87% 88% 38-08 <600 552%	VC VC C C C MR8 Class XC XC XC VC VC VC VC MR8 Class	428 419 410 396 80-06 VMD 544 524 509 495 483 463 454 447 433 80-08 VMD	5% 6% 6% 7% <141 2% 3% 3% 4% 4% 5% 5% 5% 44029 <141	78% 79% 80% 82% <600 61% 64% 67% 75% 75% 76% 78% 30-08 <600	XC XC VC DR8 Class XC	503 494 486 471 30-06 VMD 613 595 579 566 555 535 527 519 506 80-08 VMD	3% 3% 4% 4% 44024 <141 1% 2% 2% 3% 3% 3% 3% 44024 <141	69% 71% 73% 80-00 <600 <48% 52% 54% 56% 61% 66% 80-00 <600
0.79	-06 Nozzles 80 -08	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52 0.59 0.63 0.69 0.71 0.74 0.79 Flow us gpm 0.63 0.69 0.71 0.74 0.79 0.662 0.62 0.67	50 60 65 70 80 Boom psi 20 25 30 35 40 45 50 60 80 Boom psi 20 25 70 33 40 45 30 30 30 30 30 30 40 40 40 40 40 40 40 40 40 40 40 40 40	45 54 59 63 72 Tip psi 17 22 26 30 35 39 43 52 57 61 70 Tip psi 20 22 24 24 28 32	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25 6.8-27 7-28 7.3-29 7.8-31 Spra 12GPA 3.5-14 3.8-15 4-16 4.5-18	5-20 5.5-22 5.8-23 6.3-25 yer Speed (o 10gPA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19 5-20 5.3-21 5.5-22 yer Speed (o 15gPA 2.8-11 3-12 3.3-13 3.5-14	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gpa 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14 3.8-15 3.8-15 4.3-17 4.5-18 4.5-18 4.5-18 4.5-18 5-20 n 20" spacin 18gpa 2.3-9.3 2.5-10 2.8-11 3-12	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8 2.2-8.8 2.4-9.6 2.5-10 2.8-11 3-12 3-5-14 3.5-14 3.8-15 4-16 g) @ 20gpa 2.1-8.3 2.3-9.1 2.5-9.9 2.8-11	M M M F ER8 Class C C C C C C C C C C C C C C C C C C	241 230 225 221 214 30-06 VMD 331 316 305 287 281 275 265 260 260 260 260 270 280 280 280 280 280 280 280 280 280 28	21% 23% 24% 25% #402 <141 11% 15% 18% 23% 24% 26% #402 <141 12% 66% 16% 18%	95% 95% 95% 95% 70-06 <600 92% 91% 91% 91% 90% 90% 600 86% 80% 90%	C C C C SRE	309 299 289 271 30-06 456 435 418 404 492 392 364 357 350 338 30-08 VMD 524 502 482	13% 13% 14% 15% #4021 <141 3% 6% 7% 8% 9% 99% 10% #4021 <141 6% 7% 8%	88% 89% 89% 90% 90%	VC VC C C C MR8 Class XC XC XC VC VC VC MR8 Class	428 419 410 396 50-06 504 524 529 495 483 463 454 447 433 30-08 VMD	5% 6% 6% 7% #4025 <141 2% 3% 3% 4% 4% 5% 5% #4025 <141	78% 79% 80% 82% 82% 61% 64% 67% 69% 71% 75% 75% 8090-08 <600	XC XC XC VC DR8 Class XC	503 494 486 471 30-06 VMD 613 595 579 566 555 535 527 519 506 80-08 VMD	3% 3% 4% 4% 4% 4402 <141 1% 2% 2% 2% 3% 3% 4402 <141 3%	69% 71% 73% 80-06 <60 48% 52% 54% 66% 63% 64% 66% 80-08 53%
0.87 60 47 5.5-22 4.3-17 3.5-14 3.3-13 M 269 23% 94% XC 424 10% 70% XC 477 9% 72% UC 565 4% 61 0.91 65 51 5.5-22 4.5-18 3.8-15 3.3-13 F 261 24% 94% XC 413 10% 71% XC 467 9% 74% UC 556 5% 62 0.94 70 55 5.8-23 4.8-19 4-16 3.5-14 F 254 25% 94% XC 402 11% 73% XC 458 10% 75% UC 548 5% 63	-06 Nozzles 80 -08	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52 0.56 0.59 0.63 0.69 0.71 0.74 0.79 Flow us gpm 0.56 0.62 0.67 0.62	50 60 65 70 80 Boom psi 20 25 30 35 40 60 65 70 80 Boom psi 25 30 35 40 45 40 45 40 40 40 40 40 40 40 40 40 40 40 40 40	45 54 59 63 72 Tip psi 17 22 26 30 35 52 57 61 70 Tip psi 20 22 22 26 30 35 22 22 23 24 25 26 27 27 28 29 20 20 20 20 20 20 20 20 20 20	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25 6.8-27 7-28 7.3-29 7.8-31 Spra 12GPA 3.5-14 3.8-15 4-16 4.5-18 4.8-19	5-20 5.5-22 5.8-23 5.8-23 6.3-25 yer Speed (or 10geA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19 5-20 5.3-21 5.5-22 6-24 yer Speed (or 15geA 2.8-11 3-12 3.3-13 3.5-14 3.8-15	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 3-12 3.3-13 3.5-14 3.8-15 3.8-15 4.3-17 4.5-18 5-20 n 20" spacin 18GPA 2.3-9.3 2.5-10 2.8-11 3-12	3.5-14 3.8-15 4-16 4.3-17 g) @ 156PA 2-7.8 2.2-8.8 2.4-9.6 2.5-10 3-12 3-12 3-5-14 3.8-15 4-16 g) @ 20GPA 2.1-8.3 2.3-9.1 2.5-9.9 2.8-11 2.8-11	M M M F ER8 Class C C C C C C C C C C C C C C C C C C	241 230 225 221 214 00-06 WMD 331 3316 305 295 287 281 265 260 256 249 WMD 368 345 326 328 345 328	21% 23% 24% 27% #402 <141 11% 15% 17% 18% 23% 24% 24% 24% 24% 24% 26% 24% 141 12% 146% 16% 18%	95% 95% 95% 95% 95% 95% 95% 95% 91% 91% 91% 90% 90% 90% 86% 88% 90% 90% 90%	C C C C SRE VC VC VC C C C C C C C C C C C C C C C	309 299 289 271 30-06 456 435 418 404 392 382 364 357 350 338 VMD 524 466	13% 13% 14% 14% #402! <141 3% 6% 7% 8% 99% 99% 90% 10% 402! <141 6% 7% 88%	88% 89% 89% 90% 76% <81% 81% 82% 84% 85% 87% 88% 88% 85% 600 52% 52% 60% 63%	VC VC C C C MR8 Class XC XC XC VC VC VC VC VC UC UC UC	428 419 410 396 30-06 VMD 544 524 452 483 463 454 447 447 433 30-08 VMD	5% 6% 6% 7% #4025 <141 2% 3% 3% 4% 5% 5% 5% 5% -141	78% 79% 80% 80% 82% 90-06 61% 64% 67% 69% 75% 76% 78% 90-08	XC XC XC VC DR8 Class XC	503 494 486 471 30-06 VMD 613 595 579 566 555 535 527 519 506 80-08 VMD	3% 3% 4% 4% 44021 1% 2% 2% 2% 3% 3% 44021 <141 3% 4%	69% 71% 73% 80-06 <600 48% 55% 56% 61% 63% 64% 80-08 <600 53% 55% 55%
0.91 65 51 5.5-22 4.5-18 3.8-15 3.3-13 F 261 24% 94% XC 413 10% 71% XC 467 9% 74% UC 556 5% 62 0.94 70 55 5.8-23 4.8-19 4-16 3.5-14 F 254 25% 94% XC 402 11% 73% XC 458 10% 75% UC 548 5% 63	-06 Nozzles 80 -08	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52 0.56 0.59 0.63 0.69 0.71 0.74 0.79 Flow us gpm 0.56 0.62 0.67 0.62	50 60 65 70 80 Boom psi 20 25 30 35 40 60 65 70 80 Boom psi 25 30 35 40 45 40 45 40 40 40 40 40 40 40 40 40 40 40 40 40	45 54 59 63 72 Tip psi 17 22 26 30 35 52 57 61 70 Tip psi 20 22 22 26 30 35 22 22 23 24 25 26 27 27 28 29 20 20 20 20 20 20 20 20 20 20	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25 6.8-27 7-28 7.3-29 7.8-31 Spra 12GPA 3.5-14 3.8-15 4-16 4.5-18 4.8-19	5-20 5.5-22 5.8-23 5.8-23 6.3-25 yer Speed (or 10geA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19 5-20 5.3-21 5.5-22 6-24 yer Speed (or 15geA 2.8-11 3-12 3.3-13 3.5-14 3.8-15	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 3-12 3.3-13 3.5-14 3.8-15 3.8-15 4.3-17 4.5-18 5-20 n 20" spacin 18GPA 2.3-9.3 2.5-10 2.8-11 3-12	3.5-14 3.8-15 4-16 4.3-17 g) @ 156PA 2-7.8 2.2-8.8 2.4-9.6 2.5-10 3-12 3-12 3-5-14 3.8-15 4-16 g) @ 20GPA 2.1-8.3 2.3-9.1 2.5-9.9 2.8-11 2.8-11	M M M F ER8 Class C C C C C C C C C C C C C C C C C C	241 230 225 221 214 00-06 WMD 331 3316 305 295 287 281 265 260 256 249 WMD 368 345 326 328 345 328	21% 23% 24% 27% #402 <141 11% 15% 17% 18% 23% 24% 24% 24% 24% 24% 26% 24% 141 12% 146% 16% 18%	95% 95% 95% 95% 95% 95% 95% 95% 91% 91% 91% 90% 90% 90% 86% 88% 90% 90% 90%	C C C C SRE VC VC VC C C C C C C C C C C C C C C C	309 299 289 271 30-06 456 435 418 404 392 382 364 357 350 338 VMD 524 466	13% 13% 14% 14% #402! <141 3% 6% 7% 8% 99% 99% 90% 10% 402! <141 6% 7% 88%	88% 89% 89% 90% 76% <81% 81% 82% 84% 85% 87% 88% 88% 85% 600 52% 52% 60% 63%	VC VC C C C MR8 Class XC XC XC VC VC VC VC VC UC UC UC	428 419 410 396 30-06 VMD 544 524 452 483 463 454 447 447 433 30-08 VMD	5% 6% 6% 7% #4025 <141 2% 3% 3% 3% 5% 5% 5% 54025 <141 7% 7% 8%	78% 79% 80% 82% 90-06 61% 64% 67% 69% 75% 76% 78% <600	XC XC XC VC DR8 Class XC	503 494 486 471 30-06 VMD 613 595 579 566 555 535 527 519 506 80-08 VMD	3% 3% 4% 4% 44021 1% 2% 2% 2% 3% 3% 44021 <141 3% 4%	69% 71% 73% 80-06 <600 48% 55% 56% 61% 63% 64% 80-08 <600 53% 55% 55%
0.94 70 55 5.8-23 4.8-19 4-16 3.5-14 F 254 25% 94% XC 402 11% 73% XC 458 10% 75% UC 548 5% 63	-06 Nozzles 80 -08	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52 0.56 0.59 0.69 0.71 0.74 0.79	50 60 65 70 80 Boom psi 20 25 30 35 50 60 80 Boom psi 20 25 30 35 50 60 80 80 80 80 80 80 80 80 80 80 80 80 80	45 54 59 63 72 Tip psi 17 22 26 30 35 39 43 52 57 61 70 Tip psi 20 24 28 32 33 33 35 39 39 30 30 30 30 30 30 30 30 30 30 30 30 30	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25 6.8-27 7-28 7.3-29 7.8-31 Spra 126PA 3.5-14 3.8-15 4-16 4.5-18 4.8-19 5-20	5-20 5.5-22 5.8-23 5.8-23 6.3-25 yer Speed (0 10geA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19 5-20 5.3-21 5.5-22 6-24 yer Speed (0 15geA 2.8-11 3-12 3.3-13 3.5-14 3.8-15 4-16	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14 3.8-15 4.3-17 4.5-18 5-20 n 20" spacin 18@PA 2.3-9.3 2.5-10 2.8-11 3-12 3.3-13	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8 2.2-8.8 2.4-9.6 2.5-10 2.8-11 3-12 3.5-14 3.8-15 4-16 g) @ 20gpa 2.1-8.3 2.3-9.1 2.5-9.9 2.8-11 3.5-12	M M M F ER8 Class VC C C C C C C C C C C C C C C C C C	241 230 225 221 214 30-06 305 295 287 287 287 280 260 249 90-08 345 326 311 298 328 328 328 328 328 328 328 328 328 32	21% 23% 24% 27% #402 <111 11% 13% 15% 17% 21% 23% 24% 26% #402 <141 12% 14% 16% 18% 18% 20%	95% 95% 95% 95% 95% 95% 91% 92% 91% 91% 91% 90% 90% 4600 88% 90% 88% 90% 90% 88%	C C C C SR8 XC VC VC C C C C C C C C C C C C C C C C	309 299 289 271 30-06 VMD 456 435 418 404 392 382 382 364 357 350 0-08 50 50 50 50 50 50 50 50 50 50 50 50 50	13% 13% 14% 14% #402! <141 3% 6% 7% 9% 9% 10% #402! <141 6% 8% 8% 9%	88% 89% 89% 90% 38-06 <600 76% 81% 82% 84% 85% 87% 88% 88-08 600 57% 60% 60%	VC VC C C C MR8 Class XC XC XC VC VC VC VC UC UC UC UC	428 419 410 396 30-06 VMD 544 524 455 483 463 454 447 447 532 516 501	5% 6% 6% 77% #4028 <141 2% 3% 4% 4% 5% 5% #4028 <141 7% 8% 8%	78% 79% 80% 80% 82% 600 61% 64% 67% 69% 71% 75% 66% 67% 6600	XC XC XC VC DR8 Class XC	503 494 486 4771 30-06 VMD 613 595 579 566 555 527 519 506 30-08 VMD	3% 3% 4% 44021 11% 2% 2% 2% 3% 3% 34021 34141 344021 4446 446	69% 71% 73% 80-06 <600 48% 55% 56% 61% 63% 64% 80-08 <600 53% 55% 55%
1.01 80 63 63.25 5.20 43.17 3.8.15 F 242 2664 0764 YC 283 1144 7564 YC 442 1004 7704 112 524 536 556	-06 Nozzles 80 -08	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52 0.56 0.59 0.63 0.69 0.71 0.74 0.79 0.62 0.67 0.71 0.75 0.67 0.71	50 60 65 70 80 Boom psi 20 25 30 35 40 45 50 60 80 Boom psi 20 25 30 35 50 60 65 70 80 80 80 80 80 80 80 80 80 80 80 80 80	45 54 59 63 72 Tip psi 17 22 26 30 35 52 57 Tip psi 22 26 30 22 43 52 57 70 Tip psi 39 43 52 52 57 61 70 70 70 70 70 70 70 70 70 70	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25 6.8-27 7-28 7.3-29 7.8-31 Spra 12GPA 3.5-14 3.8-15 4-16 4.5-18 4.8-19 5-20 5.5-22	5-20 5.5-22 5.8-23 6.3-25 yer Speed (o 10gPA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19 5-20 5.3-21 5.5-22 6-24 yer Speed (o 15gPA 2.8-11 3-12 3.3-13 3.5-14 4.3-17	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14 3.8-15 4.3-17 4.5-18 4.5-18 5-20 n 20" spacin 18GPA 2.3-9.3 2.5-10 2.8-11 3-12 3-12 3-13 3.5-14	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8 2.2-8.8 2.4-9.6 2.5-10 2.8-11 3-12 3-12 3.5-14 3.5-14 3.8-15 4-16 g) @ 20gpa 2.1-8.3 2.3-9.1 2.5-9.9 2.8-11 2.8-11 2.8-11 3.3-12 3.3-13	M M M F ER8 Class C C C C C C C C C C C C C C C C C C	241 230 225 221 214 0-06 WMD 331 305 295 287 281 275 265 249 0-08 WMD 368 345 326 311 298 328 345 326	21% 23% 24% 27% #4022 <141 11% 13% 15% 17% 23% 23% 24% 26% #402 <141 124 16% 18% 19% 60% 18% 23% 24% 23% 24% 23% 24% 23% 24% 23% 24% 24% 24% 24% 24% 25% 24% 24% 25% 26% 26% 26% 26% 26% 26% 26% 26% 26% 26	95% 95% 95% 95% 95% 95% 92% 92% 91% 91% 91% 90% 90% 600 88% 90% 90% 90% 90% 90% 90% 90% 90% 90%	C C C C SR8 Class XC VC VC C C C C C C C C C C C C C C C C	309 299 289 271 30-06 VMD 456 435 418 404 392 382 364 357 350 338 VMD 524 466 450 424	13% 13% 14% 14% #402! <141 3% 4% 5% 6% 7% 8% 9% 10% 8402! <141 6% 7% 88 88 99% 10%	88% 89% 89% 38-06 <600 76% 81% 82% 84% 85% 85% 88% 88% 6000 57% 60% 60% 63% 60% 70%	VC VC C C C MR8 Class XC XC XC XC VC VC VC VC VC UC MR8 Class	428 419 410 396 30-06 VMD 524 509 495 483 463 454 447 433 80-08 VMD	5% 6% 6% 77% #4028 <141 2% 3% 4% 4% 5% 5% #4028 <141 7% 8% 8%	78% 79% 80% 80% 82% 600 61% 64% 67% 69% 71% 75% 66% 67% 6600	XC XC XC VC DR8 Class XC	503 494 486 471 30-06 VMD 613 595 579 566 555 535 527 500 80-08 VMD	3% 4% 4% #4021 11% 2% 2% 2% 3% 3% 3% 44021 441	69% 71% 73% 80-06 <600 48% 52% 54% 56% 63% 66% 80-08 <55% 55% 66% 66% 66% 66% 66% 66% 66% 66%
	-06 Nozzles 80 -08	0.58 0.61 0.63 0.67 Flow us gpm 0.40 0.44 0.48 0.52 0.59 0.63 0.69 0.71 0.74 0.79 Flow us gpm 0.56 0.62 0.62 0.67 0.71 0.75 0.79 0.87 0.91	50 60 65 70 80 Boom psi 20 25 30 45 50 66 65 70 80 Boom psi 25 30 44 45 50 60 65 40 45 60 60 65 60 60 60 60 60 60 60 60 60 60 60 60 60	45 59 63 72 Tip psi 17 22 26 30 35 39 43 20 24 20 24 32 36 39 39 43 20 24 47 51	6.5-26 7.3-29 7.5-30 7.8-31 8.3-33 Spra 7.5 4-16 4.5-18 4.8-19 5.3-21 5.5-22 6-24 6.3-25 6.8-27 7-28 7.3-29 7.8-31 Spra 12gpa 3.5-14 3.8-15 4-16 4.5-18 4.8-19 5-20 5.5-22 5.5-22	5-20 5.5-22 5.8-23 6.3-25 yer Speed (o 10gPA 3-12 3.3-13 3.5-14 4-16 4.3-17 4.5-18 4.8-19 5-20 5.3-21 5.5-22 6-24 yer Speed (o 15gPA 2.8-11 3-12 3.3-13 3.5-14 3.8-15 4-16 4.3-17 4.5-18	4-16 4.3-17 4.5-18 4.8-19 5-20 n 20" spacin 12gpa 2.5-9.8 2.8-11 3-12 3.3-13 3.5-14 3.8-15 3.8-15 4.3-17 4.5-18 4.5-18 4.5-18 4.5-18 5-20 n 20" spacin 18gpa 2.3-9.3 2.5-10 2.8-11 3-12 3-12 3-12 3-12 3.5-14 3.8-15	3.5-14 3.8-15 4-16 4.3-17 g) @ 15gpa 2-7.8 2.2-8.8 2.4-9.6 2.5-10 2.8-11 3-12 3-5-14 3.5-14 3.8-15 4-16 g) @ 20gpa 2.1-8.3 2.3-9.1 2.5-9.9 2.8-11 3.3-12 3.3-13 3.3-13	M M M M F ER8 Class C C C C C C C C C C C C C C C C C C	241 230 225 221 214 316 305 295 287 281 275 265 260 256 249 9 VMD 368 345 326 326 326 326 295 295 295 265 295 265 295 265 265 265 265 265 265 265 265 265 26	21% 23% 24% 25% 27% #4022 <141 11% 13% 15% 19% 23% 24% 23% 24% 141 12% 14% 16% 18% 19% 20% 20% 23% 24%	95% 95% 95% 95% 95% 95% 92% 91% 91% 91% 90% 90% 86% 88% <600 90% 90% 90% 90% 90% 90% 90% 90% 90% 9	C C C C C C C C C C C C C C C C C C C	309 299 289 271 30-06 VMD 456 435 418 404 492 362 362 363 37 350 338 30-08 VMD 524 466 450 466 450 466 450 466 450 466 466 474 474 474 474	13% 13% 13% 14% 14% 15% #4024 <141 3% 4% 5% 6% 7% 9% 10% 84024 141 141 88 88 88 96 10% 10%	88% 89% 89% 90% 38-06 <600 79% 81% 82% 84% 85% 87% 88% 889 <600 57% 60% 63% 66% 70% 71%	VC VC C C C MR8 Class XC XC XC XC VC VC VC VC VC UC MR8 Class	428 419 410 396 30-06 VMD 544 524 509 495 483 463 454 447 80-08 VMD	5% 6% 7% #4025 <141 3% 3% 4% 5% 5% 5% 7% 7% 8% 9%	78% 79% 80% 82% 6600 61% 64% 69% 74% 75% 800-08 <600 65% 67% 78% 78%	XC XC XC VC OC OCC OCC OCC OCC OCC OCC OCC OCC	503 494 486 4771 30-06 VMD 613 595 579 566 555 535 527 519 VMD 613 599 WMD	3% 4% 44% #402! <141 1% 2% 2% 3% 3% 3% #402! <141 3% 4% 4% 5%	69% 71% 73% 80-06 <600 48% 552% 564% 663% 664% 666% 80-08 <553% 555% 57%

NOTE: 'SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. *Shown application information is based on water @ 80°F in a controlled environment and should not be considered actual. Information is provided for comparison to other Combo-Jet® spray tips, for educational purposes only. Repeat testing results can vary.



COMBO-JET 80° Spray Tips - PWM Spray Systems

Comprehensive rate & speed charts for any nozzle spacing/speed/rate is available on Tip Wizard. Try it today!

Disclaimer: These charts are published for comparative purposes to demonstrate the differences in the series of Combo-Jet® spray tips. Data used to populate this chart is extrapolated from third party testing data from a controlled conditions test with water as the testing solution. Actual spray applications with active chemical ingredients may change the spray dynamics and spray tip performance specifications. Wilger is not liable for any misuse or misrepresentation of this information, leading to (but not limited to) incorrect spray application, crop damage, or any other harm. (Not limited to human, livestock or environmental). Always verify these charts with the most recent charts found on the www.wilger.net, and ALWAYS follow chemical label nozzle requirements.

ASABE Spray Classification (ASABE S572.1 Standard)

ASABE Spray Classification (ASABE S5/2.1 Standard)

Spray quality is categorized based on Dv.0.1 and VMD droplet sizes.

Objective testing data (by 3rd party), from paray spectrum recording equipment (without wind tunner use), has been used to classify spray quality for this chart. Extra data (e.g. VMD, etc.), can vary between testing equipment and method, and is provided as an educational resource only.

Extremely Coarse (XC)

Ultra Coarse (UC)

Ultra Coarse (UC)

Fine (F)

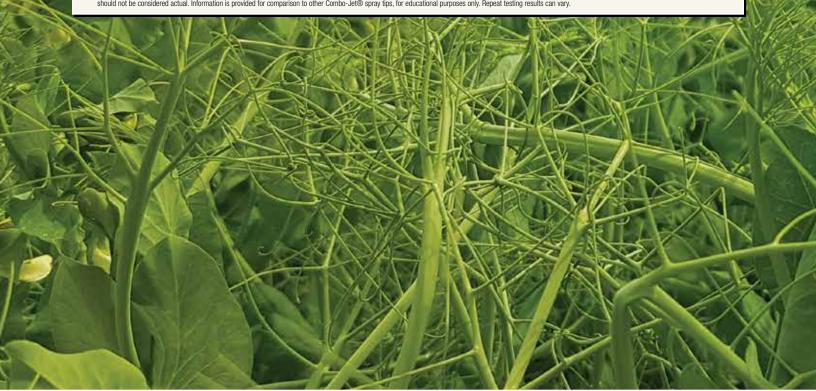
VMD (Volume Median Diameter) sprayed volume. Half of the volume is made of droplets smaller, with half made up of droplets larger.

% <141μ (% Driftable Fines) Percentage of volume which is likely to drift. As wind & boom height increase, observed spray drift will increase substantially

% <600 μ (% of Small Droplets) % of volume which is made up of 'small' droplets, useful for coverage As % of useful droplets lowers, overall coverage is reduced

	Flow	Boom	Tip	Spra	yer Speed (o	n 20" spacin	ıg) @	ER80-	-10 #4	40270-	-10	SR8	0-10	#4028	88-10	MR8	0-10	#402	90-10	DR8	30-10	#402	80-10
	us gpm	psi	psi	15gpa	18gpa	20gpa	25gpa	Class V			600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	0.73	30	21	3.5-14	3-12	2.8-11	2.2-8.6	XC 4	150 9	% 78	8%												
	0.79	35	25	4-16	3.3-13	3-12	2.3-9.3	XC 4	129 10	0% 80	0%	UC	538	6%	49%								
	0.84	40	28	4.3-17	3.5-14	3-12	2.5-10	XC 4	112 11	1% 8	1%	UC	520	6%	54%								
	0.89	45	32	4.5-18	3.8-15	3.3-13	2.8-11		398 12	2% 8	2%	UC	504	7%	57%	UC	539	5%	63%	UC	605	5%	53%
	0.94	50	35	4.8-19	4-16	3.5-14	2.8-11	VC 3	385 13	3% 8	3%	UC	489	7%	60%	UC	527	6%	65%	UC	595	5%	55%
	1.03	60	42	5-20	4.3-17	3.8-15	3-12	C 3	364 15	5% 8		XC	464	8%	64%	UC	507	6%	68%	UC	577	5%	58%
	1.07	65	46	5.3-21	4.5-18	4-16	3.3-13		356 15	5% 8		XC	453	8%	66%	UC	498	7%	69%	UC	569	6%	59%
	1.11	70	49	5.5-22	4.5-18	4.3-17	3.3-13	C 3	348 16			XC	442	9%	67%	UC	490	7%	70%	UC	562	6%	60%
	1.19	80	56	6-24	5-20	4.5-18	3.5-14	M 3	334 17	7% 8	7%	XC	424	9%	70%	XC	476	7%	72%	UC	550	6%	62%
	Flow	Boom	Tip	Spra	yer Speed (o	n 20" spacin	ıg) @	ER80-	125 #4	0270-	125	SR80	0-125	#4028	8-125	MR8	0-125	#4029	0-125	DR8	0-125	#4028	0-12
	us gpm	psi	psi	15gpa	18gpa	20gpa	25gpa			141 <		Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<60
	0.91	35	21	4.5-18	3.8-15	3.5-14	2.8-11		151 9	% 7	7%												
80	0.97	40	24	4.8-19	4-16	3.5-14	3-12				8%		535	6%	50%								
-125	1.03	45	27	5-20	4.3-17	3.8-15	3-12					UC	520	6%	53%								
Nozzles	1.09	50	30	5.5-22	4.5-18	4-16	3.3-13					UC	508	7%	55%								
	1.19	60	36	6-24	5-20	4.5-18	3.5-14					UC	486	8%	59%		566	6%	59%		605	4%	53%
	1.24	65	39	6.3-25	5-20	4.5-18	3.8-15	VC 3	385 13	3% 8	3%	XC	476	8%	61%	UC	558	6%	60%	UC	597	5%	54%
	1.29	70	42	6.3-25	5.3-21	4.8-19	3.8-15			3% 8		XC	467	8%	62%		551	6%	61%		589	5%	55%
	1.38	80	48	6.8-27	5.8-23	5-20	4-16	C 3	364 14	4% 8	5%	XC	451	9%	64%	UC	538	7%	63%	UC	577	5%	57%
	Flow	Boom	Tip	Spra	yer Speed (o	n 20" spacin	ıg) @	ER80-		40270-		SR8	0-15	#4028	88-15	MR8	0-15	#402	90-15	DR8	30-15	#4028	80-1
	us gpm	psi	psi	18gpa	20gpa	25gpa	30gpa				600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<60
	1.08	40	21	4.5-18	4-16	3.3-13	2.8-11				6%												
	1.14	45	23	4.8-19	4.3-17	3.5-14	2.8-11				7%												
	1.20	50	26	5-20	4.5-18	3.5-14	3-12					UC	572	5%	44%								
	1.32	60	31	5.5-22	5-20	4-16	3.3-13					UC	550	6%	48%								
	1.37	65	34	5.8-23	5-20	4-16	3.5-14					UC	540	6%	50%			8%	68%	UC	625	3%	50%
	1.43	70	36	6-24	5.3-21	4.3-17	3.5-14					UC	531	6%	51%	UC	491	8%	69%	UC	616	3%	51%
	1.52	80	41	6.3-25	5.8-23	4.5-18	3.8-15			3% 8			515	6%	54%	XC	476	9%	71%	UC		3%	54%
	Flow	Boom	Tip		yer Speed (o			ER80-		40270-			0-20	#4028			0-20		90-20		30-20	#4028	
	us gpm		psi	15gpa	20gpa	30gpa	40gpa			141 <	600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<60
80	1.37	50	19	6.8-27	5-20	3.5-14	2.5-10	UC 5			6%												
-20	1.50	60	23	7.5-30	5.5-22	3.8-15	2.8-11						587	5%	41%								
Nozzles	1.56	65	24	7.8-31	5.8-23	3.8-15	3-12					UC	577	5%	43%								
	1.62	70	26	8-32	6-24	4-16	3-12					UC	568	5%	45%								
	1.73	80	30	8.5-34	6.5-26	4.3-17	3.3-13	XC 4	160 9	% 7:	3%	UC	551	5%	48%	UC	564	5%	58%	UC	628	3%	50%

NOTE: 'SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. 'Shown application information is based on water @ 80°F in a controlled environment and should not be considered actual. Information is provided for comparison to other Combo-Jet® spray tips, for educational purposes only. Repeat testing results can vary.



COMBO-JET 110° Spray Tips - PWM Spray Systems

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ASABE Spray Classification (ASABE S572.1 Standard)
Spray quality is categorized based on Dv0.1 and VMD droplet sizes.

Objective testing data (by 3rd partly, from spray spectrum recording equipment (without wind tunnel use), has been used to classify spray quality for this chart. Extra data (e.g. VMD, etc.) can vary between testing equipment and method, and is provided as an educational resource only.

Tips sized up to 110-06 verified on Phase Doppler Particle Analyzer (PDPA); tips sized over 110-06 verified on Malwern.

M)
Se (VC)
COarse (XC)
The median droplet (in µ) for a sprayed volume. Half of the volume is made of droplets smaller, with half made up of droplets larger.

% <141μ (% Driftable Fines) Percentage of volume which is likely to drift. As wind & boom height increase, observed spray drift will increase substantially. % <600μ (% of Small Droplets) % of volume which is made up of 'small' droplets, useful for coverage. As % of useful droplets lowers, overall coverage is reduced.

Tips sized up to	110-06 verifie	d on Phase	Doppler Par	ticle Analyzer (PDPA); tips sized over 11	10-06 verified on Ma	alvem. 🗖 Ultra	a Coai	rse (UC)	IIdii	maue	up oi ui	opiets ia	ıı yeı.	ui	IIL WIII III	LIEdSE S	udstanti	ally.		JVEI dii U	overage	is redu	Jeu.
Nozzle	Flow	D	T '.	Applica	tion Rate ir	n US Gallon	s / Acre			Sprav	Classi	ficatio	n: VM	D (Drog	olet Size	e in u): %<1	41u (D	rift %):	%<6	300u (S	mall D	roplets))	
Size &	Rate	Boom	Tip			zle Spacing			ER110)° Serie				o° Serie)° Serie		70 10	DR110				Series
Angle	USGPM	PSI	psi			d in Miles		Class							<600					Class					VMD
	Flow	Boom	Tip			n 20" spac			10-01		81-01														
	us gpm	psi	psi	2 _{GPA}	3 _{GPA}	4 _{GPA}	5 _{GPA}	Class	VMD	<141	<600														
	0.07	20	20	2.5-10	1.8-7	1.3-5.2	1.1-4.2	F	149	45%	100%														
	0.08	25	25	3-12	2-7.8	1.5-5.9	1.2-4.7	F	144	48%															
110	0.09	30	30	3.3-13	2.2-8.6	1.6-6.4	1.3-5.1	F	140		100%														
-01	0.09	35	35	3.5-14	2.3-9.2	1.7-6.9	1.4-5.5	F	136	53%															
Nozzles	0.10	40	40	3.8-15	2.5-9.9	1.9-7.4	1.5-5.9	F	133	56%															
	0.11	45	45	4-16	2.5-10	2-7.9	1.6-6.3	F	131	58%				_											
	0.11	50	50	4.3-17	2.8-11	2.1-8.3	1.7-6.6	ᆫ	128	59%															
S.	0.12	60	60	4.5-18	3-12	2.3-9.1	1.8-7.3	F	124	62%															
	0.13 0.13	65 70	65 70	4.8-19 5-20	3.3-13 3.3-13	2.4-9.4 2.5-9.8	1.9-7.6 2-7.8	F	123 121	63% 65%															
	0.13	80	80	5.3-21	3.5-14	2.5-3.0	2.1-8.4	F	118		100%														
	Flow	Boom	Tip			n 20" spac		_	10-015		31-015		10-015	#4028	37-015	MR11	0-015	#4020	1-015	DR11	10-015	#4028	86-015		
	us gpm	psi	psi	3gpa	4 _{GPA}	5GPA	6gpa	Class		<141	<600			_	<600										
	0.11	20	20	2.5-10	2.5-10	1.6-6.3	1.3-5.2	F	153	40%			VIVID		1000	Oidoo	VIVID		7000	Olabo	71110		1000		
\$	0.12	25	25	3-12	2.2-8.8	1.8-7	1.5-5.8	F	148	44%			226	21%	98%										
110	0.13	30	30	3.3-13	2.4-9.6	1.9-7.7	1.6-6.4	F	145	47%	100%		216	24%		С	323	11%	94%	С	368	7%	92%		
-015	0.14	35	35	3.5-14	2.5-10	2.1-8.3	1.7-6.9	F	142	49%	100%		207	26%		Č	298	14%	96%	С	346	8%	93%		
Nozzles	0.15	40	40	3.8-15	2.8-11	2.2-8.9	1.9-7.4	F	139	51%	100%		200	28%	98%	С	279	16%	97%	С	329	10%	94%		
	0.16	45	45	4-16	3-12	2.4-9.4	2-7.8	F	137	53%	100%		194	30%		M	262	18%	98%	С	315	11%	95%		
	0.17	50	50	4.3-17	3-12	2.5-9.9	2.1-8.3	F	135	55%	100%		188	32%		M	248	20%	98%	С	302	12%	95%		
	0.18	60	59	4.5-18	3.5-14	2.8-11	2.3-9.1	F	131	58%	100%		178	34%		M	226	23%	99%	С	282	14%	96%		
	0.19	65	64	4.8-19	3.5-14	2.8-11	2.4-9.4	F	129	59%	100%		173	36%		F	217	24%	99%	С	273	15%	96%		
	0.20	70	69	5-20	3.8-15	3-12	2.5-9.8	F	128	61%			169	37%		F	209	25%	99%	M	265	15%	97%		
	0.21	80	79	5.3-21	4-16	3.3-13	2.5-10	F	125	63%	100%		162	39%		F AD1	195	27%	100%	M	252	17%			
5	Flow	Boom	Tip			n 20" spac		Class	10-02	#402			10-02		87-02 <600		10-02		91-02		10-02	#402			
5	us gpm	psi 20	psi	3GPA	4GPA	5GPA	6GPA	F	VMD	<141	<600 100%		VMD	<141	<000	Class	VMD	<141	<600	Ulass	VMD	<141	<600		
	0.14 0.16	25	20 25	3.5-14 4-16	2.5-10 3-12	2.1-8.3	1.7-6.9 2-7.8	F	173 166	32% 36%	100%		228	20%	99%										
110	0.17	30	29	4.3-17	3.3-13	2.5-10	2.1-8.5	F	160	39%	100%		220	22%		С	317	11%	95%	VC	433	5%	82%		
-02	0.19	35	34	4.5-18	3.5-14	2.8-11	2.3-9.2	Ė	155	42%	100%		213	24%		Č	297	13%	96%	VC	412	6%	85%		
Nozzles	0.20	40	39	5-20	3.8-15	3-12	2.5-9.8	Ė	151	45%	100%		207	26%		Č	281	15%	97%		394	6%	87%		
N .	0.21	45	44	5.3-21	4-16	3-12	2.5-10	F	147	47%			202	27%		М	267	17%	97%	С	378	7%	88%		
	0.22	50	49	5.5-22	4-16	3.3-13	2.8-11	F	144	49%	100%		197	28%		M	256	18%	97%	С	364	8%	90%		
	0.24	60	59	6-24	4.5-18	3.5-14	3-12	F	138	52%	100%	F	189	31%	99%	M	237	21%	98%	С	339	9%	91%		
	0.25	65	64	6.3-25	4.8-19	3.8-15	3.3-13	F	136	54%	100%	F	185	32%	99%	M	229	22%	98%	С	328	10%	92%		
	0.26	70	69	6.5-26	4.8-19	4-16	3.3-13	F	133	55%	100%		182	32%		M	222	23%	98%	С	318	10%	93%		
6	0.28	80	79	7-28	5.3-21	4.3-17	3.5-14	F	129	58%			176	34%		F	210	25%	99%	С	299	11%	94%		
	Flow	Boom	Tip			n 20" spac			10-025		31-025		10-025		37-025						10-025		36-025		0-025
	us gpm	psi	psi	3gpa	4GPA	5gpa	6gpa	Class		<141	<600		VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
	0.17	20	19	4.3-17	3.3-13	2.5-10	2.2-8.6	F	194	28%			246	170/	000/									#402	92-025
110	0.20 0.21	25 30	24 29	4.8-19 5.3-21	3.5-14	3-12	2.4-9.7	F	190 187	29%	100%		246 237	17% 19%		С	353	8%	90%	VC	437	5%	79%		
110 -025	0.21	35	34	5.8-23	4-16 4.3-17	3.3-13 3.5-14	2.8-11	E	184	29% 29%	100%		230	21%		C	337	10%	92%	VC	418	6%	83%	UC	568
Nozzles	0.25	40	39	6-24	4.5-18	3.8-15	3-12	F	181	30%	100%		223	22%		C	322	11%	93%	VC	401	6%	86%	UC	546
A TOLLIOS	0.26	45	44	6.5-26	4.8-19	4-16	3.3-13	Ė	179	30%	100%		218	24%		Č	310	12%	94%	C	386	7%	88%	UC	526
	0.28	50	49	6.8-27	5-20	4-16	3.5-14	F	177	30%	100%		213	25%	98%	Č	299	13%	95%	Č	373	8%	89%	UC	509
P	0.30	60	58	7.5-30	5.5-22	4.5-18	3.8-15	F	173	31%			204	27%	98%	Č	280	15%	96%	Č	350	9%	91%	XC	478
	0.31	65	63	7.8-31	5.8-23	4.8-19	4-16	F	172	31%			200	28%	98%	С	271	16%	96%	С	340	9%	92%	XC	465
4	0.33	70	68	8-32	6-24	4.8-19	4-16	F	170	31%			196	28%	98%	M	263	16%	96%	С	331	10%	93%	XC	453
	0.35	80	78	8.8-35	6.5-26	5.3-21	4.3-17	F	168	31%	100%		190	30%		M	249	18%	97%	С	314	10%	94%	XC	431
	Flow	Boom	Tip			n 20" spac			10-03		81-03							#402			10-03	#402			10-03
	us gpm	psi	psi	4 _{GPA}	5gpa	6.0gpa	8gpa		VMD				VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600		
	0.21	20	19	3.8-15	3-12	2.5-10		F	199	26%	99%	0	000	001	000/									#402	292-03
140	0.23	25	24	4.3-17	3.5-14	3-12	2.2-8.6	F		29%				9%		VC	200	CO/	000/		-				
110	0.26	30	29	4.8-19	3.8-15	3.3-13	2.4-9.5			31%					95%		399	6%	86%	٧c	101	40/	770/	ШС	610
-03	0.28	35	34	5-20	4-16	3.5-14	2.5-10	F	179				293		95%	C	380	7%	88%		464	4%	77%	UC	618
Nozzles	0.29 0.31	40 45	39 43	5.5-22 5.8-23	4.3-17 4.8-19	3.8-15 3.8-15	2.8-11 3-12	F	175 170	34%			282 272		96% 96%	C	364 350	8% 9%	90% 91%		447 432	5% 5%	79% 82%	UC	596 576
	0.33	50	48	6-24	5-20	4-16	3-12	E	167	37%			263		97%	C	337	10%	93%	VC	419	6%		UC	558
	0.36	60	58	6.8-27	5.3-21	4.5-18	3.3-13	F	160	39%			247		97%	C		11%			396	6%	86%	UC	527
1	0.38	65	63	7-28	5.5-22	4.8-19	3.5-13	F	157	40%			240		97%	C			95%		385	7%	87%	UC	514
l	0.39	70	68	7.3-29	5.8-23	4.8-19	3.5-14	Ė	155	41%			234		97%	C	297				376	7%	88%		501
	0.42	80	77	7.8-31	6.3-25	5.3-21	3.8-15	F	150		97%				98%				96%	Č	359		89%		478
NOTE 100	MD DD I	ID.			() 5			. In case on						- 201		Alam In	J .				0005:-	, _			

NOTE: 'SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. *Shown application information is based on water @ 80°F in a controlled environment and should not be considered actual. Information is provided for comparison to other Combo-Jet® spray tips, for educational purposes only. Repeat testing results can vary.



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Duty Cycle (Effective 'on time' of solenoid)

The duty cycle is the effective 'on time' of a PVM solenoid. Generally speed ranges are based on a 25% - 100% duty cycle. When selecting a nozzle, often a duty cycle of 60-80% is recommended at typical speeds, providing flexibility for upper speed & turning situations, as well as slower spraying speeds. It is not advised to spray below 40% duty cycle.

Calculating Duty Cycle on Printed Charts (Useful for nozzle sizing & selection)
On Wilger printed charts, typically a SPEED RANGE is provided, but the duty cycle % is a dynamic factor based on the sprayers travel speed. To calculate a duty cycle at a given travel speed, divide CURRENT sprayer speed into max nozzle speed. (e.g. 15mph / 20mph max = 75% duty cycle)

иррсі з	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		5				ocus. It is not		,		, ,			IIILIAI (
	Flo	w	Boom	Tip	Spray	er Speed (d	on 20" spac	ing) @	ER1	10-04	#4028	81-04	SR1	10-04	#4028	87-04	MR1	10-04	#4029	91-04	DR1	10-04	#402	86-04	UR11	0-04
	us q		psi	psi	4 _{GPA}	5gpa	7.5	10gpa	Class		<141	<600		VMD		<600		VMD				VMD		<600	Class	VMD
	0.2		20	19	5-20	4-16	2.8-11	2-8.1	M	243	18%	97%	Oldoo	VIIID	\	2000	Oldoo	VIVID	7111	1000	Oidoo	VIIID	VI.I.	4000	#4029	
									_				0	005	00/	000/									#402	JZ-04
	0.3		25	23	5.8-23	4.5-18	3-12	2.3-9.1	M	235	20%	97%		335	9%	92%										
110	0.3	34	30	28	6.3-25	5-20	3.3-13	2.5-10	M	228	21%	97%		319	10%	93%	VC	425	4%	83%	XC	519	3%	67%		
-04	0.3	86	35	33	6.8-27	5.5-22	3.5-14	2.8-11	M	222	23%	97%	C	306	12%	94%	VC	404	5%	86%	XC	497	3%	71%	UC	631
Nozzles			40	37	7.3-29	5.8-23	3.8-15	3-12	М	217	24%	97%		294	13%	95%	С	386	6%	88%		478	4%	74%	UC	611
11022100	0.4		45	42	7.5-30	6-24	4-16	3-12	F	213	25%	96%		284	14%	95%	Č	370	7%	90%	VC	462	4%	77%	UC	593
									_																	
	0.4		50	47	8-32	6.5-26	4.3-17	3.3-13	F	209	26%	96%	С	275	15%	96%	С	355	8%	91%	VC	447	5%	79%	UC	577
	0.4	7	60	56	8.8-35	7-28	4.8-19	3.5-14	F	202	27%	96%	M	259	17%	96%	С	330	9%	93%	VC	421	6%	82%	UC	549
	0.4	19	65	61	9.3-37	7.3-29	5-20	3.8-15	l F	199	28%	96%	M	252	18%	97%	С	319	9%	94%	VC	410	6%	83%	UC	537
	0.5		70	66	9.5-38	7.5-30	5-20	3.8-15	F	196	29%	96%	М	245	18%	97%	С	309	10%	95%	С	400	6%	84%	UC	526
	0.5		80	75	10-41	8.3-33	5.5-22	4-16	F	191	30%	95%	M	233	19%	97%	Č	291	11%	95%	Č	381	7%	86%	ÜC	505
									_																	
	Flo		Boom	Tip		/er Speed (d				10-05	#4028			10-05	#4028			10-05	#4029			10-05	#402		UR11	
	us g		psi	psi	6gpa	8gpa	10gpa	12gpa	Class		<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	
	0.3	34	20	18	4.3-17	3-12	2.5-10	2.1-8.3	M	253	17%	95%													#4029	92-05
	0.3	88	25	23	4.8-19	3.5-14	2.8-11	2.3-9.3	M	242	19%	95%	С	388	6%	88%										
110	0.4		30	27	5-20	3.8-15	3-12	2.5-10	М	233	21%	95%		367	7%	90%	XC	501	3%	69%						
				32					M	225	23%	95%		349	9%			478	4%		XC	525	20/	64%	UC	652
-05	0.4		35		5.5-22	4.3-17	3.3-13	2.8-11			2370					92%	XC			73%			2%		_	
Nozzles			40	36	6-24	4.5-18	3.5-14	3-12	M	219	25%	95%		334	10%	93%	VC	459	4%	76%	XC	513	3%	66%	UC	634
	0.5	0	45	41	6.3-25	4.8-19	3.8-15	3-12	F	213	26%	95%		320	11%	94%	VC	442	5%	78%	XC	502	3%	68%	UC	618
	0.5	3	50	45	6.5-26	5-20	4-16	3.3-13	F	208	27%	95%	C	308	12%	94%	VC	427	5%	80%	XC	492	3%	70%	UC	604
	0.5		60	54	7.3-29	5.5-22	4.3-17	3.5-14	F	199	29%	95%		287	14%	95%	С	400	6%	83%	XC	475	3%	73%	UC	582
	0.6		65	59	7.5-30	5.8-23	4.5-18	3.8-15	F	195	30%	95%		277	15%	96%	Č	389	6%	84%	XC	467	3%	74%	ÜC	572
									F				M				C	378				460			UC	
	0.6		70	63	7.8-31	5.8-23	4.8-19	4-16	_	191	31%	95%		269	15%	96%			7%	85%	XC		4%	75%	_	563
	0.6		80	72	8.3-33	6.3-25	5-20	4.3-17	F	185	32%	95%	M	253	17%	97%	С	359	7%	87%	VC	448	4%	77%	UC	547
	Flo	W	Boom	Tip		<u>/er Speed (d</u>				10-06		31-06			#4028		MR1	10-06		91-06			#402		UR11	
	us g	pm	psi	psi	7.5	10gpa	12gpa	15gpa	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
	0.4		25	22	4.5-18	3.3-13	2.8-11	2.2-8.8	С	278	15%	94%													#4029	
110	0.4		30	26	4.8-19	3.5-14	3-12	2.4-9.6	M	268	16%	94%	VC	438	5%	81%										
									M								VC	EUC	20/	600/	VC	E60	20/	500/		
-06 Namelan	0.5		35	30	5.3-21	4-16	3.3-13	2.5-10		260	18%	94%		414	6%	84%	XC	506	3%	68%	XC	563	2%	58%	110	050
Nozzles			40	35	5.5-22	4.3-17	3.5-14	2.8-11	M	253	19%	94%		393	7%	87%	XC	490	3%	71%	XC	547	2%	61%	UC _	653
	0.5		45	39	6-24	4.5-18	3.8-15	3-12	M	247	20%	94%		375	8%	88%	XC	477	4%	74%	XC	532	2%	63%	UC	636
	0.6	3	50	43	6.3-25	4.8-19	3.8-15	3-12	M	242	21%	95%	C	358	9%	90%	XC	465	4%	76%	XC	519	3%	65%	UC	622
	0.6		60	52	6.8-27	5-20	4.3-17	3.5-14	М	233	23%	95%		330	11%	92%	VC	443	5%	79%	XC	496	3%	69%	UC	597
	0.7		65	57	7-28	5.3-21	4.5-18	3.5-14	M	228	23%	95%		318	11%	93%	VC	434	5%	80%	XC	486	3%	70%	ÜC	587
	0.7		70	61	7.3-29	5.5-22	4.5-18	3.8-15	M	225	24%	95%		306	12%	93%	VC	426	5%	81%	XC	476	3%	71%	UC	578
	0.7		80	70	7.8-31	6-24	5-20	4-16	F	218	25%	95%		285	13%	94%	VC	410	5%	83%	XC	460	3%	73%	UC	561
4	Flo	w	Boom	Tip	Spray	er Speed (d	on 20" spac	ing) @	ER1	10-08	#4028	31-08	SR1	10-08	#4028	37-08	MR1	10-08	#4029	91-08	DR1	10-08	#402	86-08	UR11	0-08
J. Company	us g	mg	psi	psi	12gpa	15gpa	18gpa	20gpa	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
8	0.5		25	20	3.5-14	2.8-11	2.3-9.3	2.1-8.3	С	328	14%	90%													#4029	
110	0.6		30	24	3.8-15	3-12	2.5-10	2.3-9.1	Č	312	15%	92%	IIC	190	4%	59%									# 10Z	JL 00
																							_		\vdash	_
-08	0.6		35	28	4-16	3.3-13	2.8-11	2.5-9.9	C	298	17%	93%		465	5%	64%										
Nozzles			40	32	4.5-18	3.5-14	3-12	2.8-11	С	286	18%	93%		445	6%	68%	UC	522	4%	54%		606	3%	42%		
	0.7	75	45	36	4.8-19	3.8-15	3-12	2.8-11	M	275	19%	94%	XC	427	7%	71%	UC	503	5%	58%	UC	588	3%	44%	UC	672
	0.7	9	50	39	5-20	4-16	3.3-13	3-12	M	266	20%	95%	XC	410	7%	74%	UC	486	5%	61%	UC	571	4%	47%	UC	654
	0.8		60	47	5.5-22	4.3-17	3.5-14	3.3-13	М	249	21%	95%		382	8%	78%	XC	455	6%	65%	UC	543	4%	50%	UC	623
	0.9		65	51	5.5-22	4.5-18	3.8-15		M	242	22%			370	9%	79%		442	6%	67%	UC	530	4%	52%	UC	610
								3.3-13				96%					XC									
	0.9		70	55	5.8-23	4.8-19	4-16	3.5-14	M	235	23%	96%		359	9%	80%	XC	430	6%	69%	UC	519	4%	53%	UC	598
	1.0)1	80	63	6.3-25	5-20	4.3-17	3.8-15	F	223	24%	96%	С	338	10%	83%	XC	408	7%	71%	UC	498	4%	56%	UC	578
	Flo	w	Boom		Spray	/er Speed (d	on 20" spac	ing) @	ER1	10-10	#4028	81-10	SR1	10-10	#4028	87-10	MR1	10-10	#4029	91-10	DR1	10-10	#402	86-10	UR11	0-10
	us a	pm			15gpa	18gpa	20gpa	25gpa	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
110	0.7		30	21	3.5-14	3-12	2.8-11	2.2-8.6	VC	357	11%	88%	Cicco				Olaco				Oladoo				#4029	
	0.7		35	25	4-16		3-12	2.3-9.3	C	343	12%	89%	LIC	EOO	5%	EC0/									π402.	JZ-10
-10 No10						3.3-13										56%	шо	500	40/	F10/						
Nozzles			40	28	4.3-17	3.5-14	3-12	2.5-10	C	330	13%	90%	UC	480	6%	60%	UC	533	4%	51%		004	=0/	500/		
	0.8		45	32	4.5-18	3.8-15	3.3-13	2.8-11	С	319	15%	91%		461	6%	64%	UC	514	4%	54%		604	5%	58%		
	0.9	14	50	35	4.8-19	4-16	3.5-14	2.8-11	С	310	16%	91%	XC	444	7%	67%	UC	497	5%	57%	UC	595	5%	56%	UC	680
	1.0)3	60	42	5-20	4.3-17	3.8-15	3-12	С	293	17%	92%	XC	414	8%	72%	XC	468	5%	61%	UC	580	5%	54%	UC	648
	1.0		65	46	5.3-21	4.5-18	4-16	3.3-13	С	285	18%			401	8%	73%			5%	62%			5%	53%		634
	1.1		70	49	5.5-22	4.5-18	4.3-17	3.3-13	Č	278		93%			8%	75%			6%	64%			5%			621
N .																700/	VC	423	6%							
	1.1		80 Poom	56	6-24	5-20	4.5-18	3.5-14	M ED1			93%			9%	78%				1.125			6% #4029	49%	UU	599
	Flo		Boom	Tip		er Speed (d			_	10-125		1-125				7-125		10-125		1-125		10-125	#4028			
	us g		psi	psi	15gpa	18gpa	20gpa	25gpa	Class				Class	VMD	<141	<600	Class	VIVID	<141	<600	Class	VMD	<141	<600		
	0.8	34_	30	18	4.3-17	3.5-14	3.3-13	2.5-10	XC	447	8%	64%														
110	0.9	1_	35	21	4.5-18	3.8-15	3.5-14	2.8-11	XC	430	8%	68%			∟ _	<u> </u>		L_]	<u> </u>	╚		L_			
-125	0.9		40	24	4.8-19	4-16	3.5-14	3-12	XC	416	9%	71%	UC	529	4%	50%										
Nozzles			45	27	5-20	4.3-17	3.8-15	3-12	XC	403	9%	73%		506	4%											
NOZZICS	1.0		50	30	5.5-22	4.5-17	4-16	3.3-13	XC	392	10%	75%			5%	59%	IIC	633	4%	37%						
																	UC				ШО	CAC	201	250/	1	
	1.1		60	36	6-24	5-20	4.5-18	3.5-14	XC	383	10%	77%			5%	62%	UC	616	4%	40%			3%	35%		
	1.2		65	39	6.3-25	5-20	4.5-18	3.8-15	VC	366	11%	79%			6%	67%		587	4%	44%	UC	626	4%	37%		
	1.2	9	70	42	6.3-25	5.3-21	4.8-19	3.8-15	VC	358	11%	80%	XC	425	6%	69%		574	4%	46%	UC	618	4%	39%		
	1.3	18 T	80	48	6.8-27	5.8-23	5-20	4-16	С	351	12%				6%	71%			5%	48%			4%	40%		
	Flo		Boom	Tip		er Speed (d				10-15		31-15						10-15		91-15				86-15		
	us g		psi	psi	18gpa	20gpa	25gpa	30gpa	Class	VMD	<141	<600		VMD	<141	<600	Clace	VMD	<141	<600	Clace	VMD	<141	<600		
									VO				UICOS	VIVID	<u> 141</u>	COOO	Glass	VIVID	\141	COOO	UIASS.	AIMID	<141	C000		
	1.0		40	21	4.5-18	4-16	3.3-13	2.8-11	XC	434	9%	65%														
110	1.1		45	23	4.8-19	4.3-17	3.5-14	2.8-11	XC	423	9%	67%														
-15	1.2	20	50	26	5-20	4.5-18	3.5-14	3-12	XC	413	10%	69%	UC	561	4%	46%										
Nozzles			60	31	5.5-22	5-20	4-16	3.3-13	XC	395	11%	72%	UC	534	5%	52%	UC	604	4%	41%						
	1.3		65	34	5.8-23	5-20	4-16	3.5-14	XC	387		73%			5%	54%	UC	595	4%	42%	IIC	646	4%	42%		
	1.4		70	36	6-24	5.3-21	4.3-17	3.5-14	XC	380		74%			5%	56%		586	4%	44%			4%	43%		
																	UC	570								
	1.5		80	41	6.3-25	5.8-23	4.5-18	3.8-15	VC			76%			6%	59%		570	5%	46%	UC	620	4%	46%		
	Flo		Boom	Tip		er Speed (d				10-20		31-20				87-20				91-20						
	us g	pm	psi	psi	15gpa	20gpa	30gpa	40gpa	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600						
110	1.3		50	19	6.8-27	5-20	3.5-14	2.5-10		504	6%	54%														
-20	1.5		60	23	7.5-30	5.5-22	3.8-15	2.8-11	UC		7%	58%		557	5%	46%										
Nozzles			65	24	7.8-31	5.8-23	3.8-15	3-12	XC	476	7%	60%			5%	48%										
INUZZIES																										
	1.6		70	26	8-32	6-24	4-16	3-12	XC	468	7%	61%			5%		110	F60	401	4007						
	1.7	3	80	30	8.5-34	6.5-26	4.3-17	3.3-13	XC	453	8%	64%	UC	518	6%	55%	UC	593	4%	42%						

COMBO-JET_® Metering Orifices & Fertilizer Streamer Caps

COMBO-JET_® Fertilizer Streamer Caps

Color-coded 3-hole streamer nozzles designed for streaming liquid fertilizer on consistent spacing to minimize leaf burn.



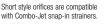
Operating Pressure	10-60 psi
O-rings	FKM (viton avail.)
Material	Glass-reinforced Polypropylene



COMBO-JET_® Metering Orifices

Metering orifice snap into any Combo-Jet or Radialock caps to meter fertilizer or chemical flow rates.







40285-04 40285-15 as they do not require strainers

UR series Orifices

If you are looking for replacement two-piece pre-orifices for Combo-Jet UR series spray tips, visit the UR series spray tip page for part numbers.



~6.7"		lleriai	Polypropyl	ene S	treamer Ca	p 🌉	/ I		snap-in stra orifices have	e long stem		-04 402 lo not requi					402	92-27
			Гіен	10" O	utlet Sp	acing		utlet Sr			utlet Sp			utlet Sp	acing	30" O	utlet Sp	nacing
Combo-Jet Streamer Nozzle	Metering Orifice	Pres.	Flow Rate		ion Rates			tion Rate	_		tion Rate	_	1	tion Rates	_		tion Rate	
Size	Size	(PSI)	(us gpm)	4.5 мрн	5.0 мрн	6.5 мрн	4.5 мрн	5.0 мрн	6.5 мрн	4.5 мрн	5.0 мрн	6.5 мрн	7.5 мрн	10 мрн	15 мрн	4.5 мрн	5.0 мрн	6.5 мрн
		15	0.03	4.0	3.6	2.8	3.3	3.0	2.3	2.7	2.4	1.9	1.4	1	0.7	1.3	1.2	0.9
Using	-005	20	0.04	4.6	4.2	3.2	3.9	3.5	2.7	3.1	2.8	2.1	1.6	1.2	0.8	1.5	1.4	1.1
Tip Wizard	COMBO-JET	25 30	0.04	5.2 5.7	4.7 5.1	3.6 3.9	4.3	3.9 4.3	3.0	3.5 3.8	3.1	2.4	1.7 1.8	1.3	0.9	1.7 1.9	1.6 1.7	1.2
makes	Metering Orifice	35	0.04	6.1	5.5	4.2	5.1	4.6	3.5	4.1	3.4	2.8	2	1.5	1	2.0	1.7	1.4
selecting	40285-005	40	0.05	6.6	5.9	4.5	5.5	4.9	3.8	4.4	3.9	3.0	2.1	1.6	1	2.2	2.0	1.5
metering		45	0.05	7.0	6.3	4.8	5.8	5.2	4.0	4.6	4.2	3.2	2.2	1.6	1.1	2.3	2.1	1.6
orifices & streamer caps		15	0.04	5.4	4.9	3.7	4.5	4.1	3.1	3.6	3.2	2.5	1.9	1.4	0.9	1.8	1.6	1.2
easy!	-0067	20	0.05	6.3	5.6	4.3	5.2	4.7	3.6	4.2	3.8	2.9	2.1	1.6	1	2.1	1.9	1.4
	COMBO-JET	25	0.05	7.0	6.3	4.8	5.8	5.2	4.0	4.7	4.2	3.2	2.3	1.7	1.1	2.3	2.1	1.6
	Metering Orifice	30 35	0.06	7.7 8.3	6.9	5.3 5.7	6.4	5.7 6.2	4.4	5.1 5.5	4.6	3.5	2.5 2.7	1.9 2	1.2	2.6	2.3	1.8
WILGER	40285-007	40	0.06	8.8	7.4 8.0	6.1	6.9 7.4	6.6	4.8 5.1	5.9	5.0 5.3	4.1	2.7	2.1	1.3	2.8 2.9	2.5	1.9 2.0
		45	0.07	9.4	8.4	6.5	7.8	7.0	5.4	6.3	5.6	4.3	3	2.2	1.5	3.1	2.8	2.2
TIP WIZARD		15	0.06	8.1	7.3	5.6	6.8	6.1	4.7	5.4	4.9	3.7	2.8	2.1	1.4	2.7	2.4	1.9
TRY IT FREE AT	-01	20	0.07	9.4	8.4	6.5	7.8	7.0	5.4	6.3	5.6	4.3	3.1	2.4	1.6	3.1	2.8	2.2
WWW.WILGER-NET	COMBO-JET	25	0.08	10	9.4	7.3	8.7	7.9	6.0	7.0	6.3	4.8	3.4	2.6	1.7	3.5	3.1	2.4
App Store	Metering Orifice	30	0.09	11	10	8	10	8.6	6.6	7.7	6.9	5.3	3.7	2.8	1.9	3.8	3.4	2.7
GETITON Georgia Play	40285-01	35	0.09	12	11	9	10	9.3	7.2	8.3	7.4	5.7	4	3	2	4.1	3.7	2.9
Google Play		40 45	0.10	13 14	12 13	9 10	11 12	10 11	7.7 8.1	8.8 9.4	8.0 8.4	6.1 6.5	4.2 4.4	3.2	2.1	4.4	4.0	3.1
		45 15	0.11	12	11	8.4	10	9.1	7.0	9.4 8.1	7.3	5.6	4.4	3.3	2.2	4.7	3.6	2.8
	045	20	0.03	14	13	10	12	11	8.1	9.3	8.4	6.5	4.7	3.5	2.3	4.7	4.2	3.2
	-015 COMBO-JET	25	0.12	16	14	11	13	12	9.0	10	9.4	7.2	5.1	3.9	2.6	5.2	4.7	3.6
	Metering	30	0.13	17	15	12	14	13	10	11	10	7.9	5.6	4.2	2.8	5.7	5.1	4.0
	Orifice 40285-015	35	0.14	19	17	13	15	14	11	12	11	8.6	5.9	4.5	3	6.2	5.6	4.3
40443-015	.0200 0.0	40	0.15	20	18	14	17	15	11	13	12	9.1	6.3	4.7	3.2	6.6	5.9	4.6
40440 010		45 15	0.16 0.12	21 16	19 15	15 11	18 13	16 12	12 9.3	14 11	13 10	10 7.4	6.6 5.6	5 4.2	3.3 2.8	7.0 5.4	6.3 4.8	4.8 3.7
		20	0.12	19	17	13	16	14	11	12	11	8.6	6.2	4.7	3.1	6.2	5.6	4.3
	-02 COMBO-JET	25	0.16	21	19	14	17	16	12	14	12	10	6.8	5.1	3.4	6.9	6.2	4.8
	Metering	30	0.17	23	21	16	19	17	13	15	14	11	7.4	5.5	3.7	7.6	6.8	5.3
	Orifice 40285-02	35	0.19	25	22	17	21	18	14	16	15	11	7.9	5.9	4	8.2	7.4	5.7
40443-02	40200 02	40	0.20	26	24	18	22	20	15	18	16	12	8.4	6.3	4.2	8.8	7.9	6.1
40443-02		45 15	0.21	28 20	25 18	19 14	23 17	21 15	16 12	19 13	17 12	13 9.3	8.8 7	6.6 5.2	4.4 3.5	9.3 6.7	8.4 6.1	6.4 4.7
		20	0.15	23	21	16	19	17	13	16	14	9.3	7.8	5.2	3.9	7.8	7.0	5.4
	-025	25	0.10	26	23	18	22	20	15	17	16	12	8.6	6.4	4.3	8.7	7.8	6.0
\sim	COMBO-JET Metering	30	0.22	29	26	20	24	21	16	19	17	13	9.2	6.9	4.6	10	8.6	6.6
	Orifice	35	0.23	31	28	21	26	23	18	21	18	14	9.9	7.4	4.9	10	9.2	7.1
40443-005	40285-025	40	0.25	33	30	23	27	25	19	22	20	15	10	7.9	5.2	11	10	7.6
40443-025		45	0.26	35	31	24	29	26	20	23	21	16	11	8.3	5.5	12	10	8.1
		15	0.18	24 28	22 25	17 19	20	18 21	14 16	16 19	15 17	11	8.4 9.4	6.3 7	4.2	8.1 9.3	7.3 8.4	5.6 6.5
	-03	20 25	0.21	31	25	19 22	23 26	23	16	19 21	17	13	9.4	7.7	5.1	9.3	9.4	7.2
7	COMBO-JET Metering	30	0.24	34	31	24	29	26	20	23	21	16	11	8.3	5.6	11	10	7.9
	Orifice	35	0.28	37	33	26	31	28	21	25	22	17	12	8.9	5.9	12	11	8.6
	40285-03	40	0.30	40	36	27	33	30	23	26	24	18	13	9.5	6.3	13	12	9.1
40443-03		45	0.32	42	38	29	35	32	24	28	25	19	13	10	6.6	14	13	10
		15	0.24	32	29	22	27	24	19	22	19	15	11	8.4	5.6	11	10	7.5
	-04	20 25	0.28	37 42	34 38	26 29	31 35	28 31	22 24	25 28	22 25	17 19	13 14	9.4	6.3	12 14	11	8.6 10
\leq	COMBO-JET Metering	30	0.32	46	41	32	38	34	26	30	25	21	15	11	7.4	15	14	11
727	Orifice	35	0.37	49	44	34	41	37	28	33	30	23	16	12	7.9	16	15	11
	40285-04	40	0.40	53	47	37	44	40	30	35	32	24	17	13	8.4	18	16	12
40443-04		45	0.42	56	50	39	47	42	32	37	34	26	18	13	8.8	19	17	13
		15	0.31	40	36	28	34	30	23	27	24	19	12	9.1	6.1	13	12	9.3
	-05	20	0.35	47	42	32	39	35	27	31	28	22	14	11	7	16	14	11
4 2	COMBO-JET	25	0.40	52 57	47 51	36	43	39 43	30 33	35 38	31	24 26	16 17	12	7.8	17	16 17	12
200	Metering Orifice	30 35	0.43	62	51 56	40 43	48 51	43	36	41	34 37	28	17	13 14	8.6 9.3	19 21	19	13 14
	40285-05	40	0.50	66	59	46	55	49	38	44	40	30	20	15	9.9	22	20	15
40443-05		45	0.53	70	63	48	58	53	40	47	42	32	21	16	11	23	21	16

COMBO-JET_® Metering Orifices (cont'd)

Common Liquid Weight, Specific Gravity, and Conversion Factor for Flow Rate:

Required Flow Rate x Conversion Factor = Flow Rate adjusted for density

[WATER] 8.34 lbs/gal Specific Gravity 1.0 Conversion Factor: 1.00 [28-0-0] 10.67 lbs/gal Specific Gravity 1.28 Conversion Factor: 1.13 [10-34-0] 11.65 lbs/gal Specific Gravity 1.28 Conversion Factor: 1.18

Critica		Metering	Pres.	Flow		utlet Sp			utlet Sp	_		utlet Sp	_		utlet Sp	-		utlet Sp	-
15		Orifice Size		Rate (us gpm)		_													
Casis-July Section Company Casis Company Casis C				_	49	44	34	40	36	28	32	29	22	15	11	7.3	16	15	11
Ministration 10 10 10 10 10 10 10 1				_		_													
				_		_		_	_										_
CASHAD-SH	"332"			_		_													
15	40443-06			_		_		_											_
Short		-08		0.49	65		45	54					30	_	15		22		15
Control Cont						_													
		Orifice]		_							_				_				
4484-0 4486-0 45 0.08 112 101 78 0.08 61 47 54 49 57 22 119 12 27 24 19		[Long		_									_						
College 17 20 0.71 94 84 84 65 78 70 54 63 58 63 28 21 14 31 28 22	40443-08								_									_	
				_		_		_							_				
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10 10 10 10 10 10 10 10		Orifice]				_		_	_										
	w	[Long		_		_		_							_				
Combourt 15	40443-10			_		_													
Chemport	П	-125		0.76	101	91	70	84	76	58	67	60	47	30	23	15	34	30	23
1																			
Composition	4 2	Orifice]																	
4044-125 4028-125 405 15	#	[Long												_					
15	40443-125										_								
Color Colo																			
Combo_let Class Sign				_		_													
4043-15 40 1.50 198 178 137 165 149 114 132 119 91 59 45 30 66 59 46 30 68 69 46 133 15 145 112 136 121 199 11 59 45 59 45 30 66 59 46 148 159 156 149 114 132 159 114 139 114 132 159 114 132 159 114 132 159 114 132 159 114 132 159 114 132 159 114 132 159 114 132 159 114 132 159 114 132 159 114 134 134 134 134 134 134 134 134 134				_		_		_		_									
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15	40443-15			•		_		_											
COMBOLIST Long of the late			15		161	145	112	135	121	93		97	75	48		24		48	37
40285-20 40 2.00 264 237 183 220 198 152 176 158 122 79 59 40 88 79 61 45 2.12 280 252 194 233 210 161 186 168 129 84 63 42 93 84 65 157 151 1.53 202 182 140 168 152 177 135 156 140 108 70 53 35 78 70 54 157 151 151 153 202 182 140 168 152 177 135 156 140 108 70 53 35 78 70 54 157 151 151 153 202 182 140 168 152 177 135 156 140 108 70 53 35 78 70 54 151 151 151 151 151 151 151 151 151		[Long		•															
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45 2.65 350 315 242 292 263 202 233 210 162 105 79 53 117 105 81 15 1.84 243 218 168 202 182 140 162 146 112 73 55 36 81 73 56 20 2.12 280 252 194 234 210 162 187 168 129 84 63 42 93 84 65 COMBO-JET 25 2.37 313 282 217 261 235 181 209 188 145 94 70 47 104 94 72 Long 30 2.60 343 309 238 286 257 198 229 206 158 103 77 51 114 103 79 Orificel 40285-30 40 3.00 396 357 274 330 297 229 264 238 183 119 89 59 132 119 91 45 3.18 420 378 291 350 315 242 280 252 194 126 95 63 140 126 97 COMBO-JET 25 3.16 417 375 289 347 313 241 278 250 192 125 94 63 139 125 96 COMBO-JET 25 3.16 417 375 289 347 313 241 278 250 192 125 94 63 139 125 96 Orificel 35 3.74 493 444 342 411 370 285 329 296 228 148 111 74 164 148 114 Orificel 36 3.74 493 444 342 411 370 285 329 296 228 148 111 74 103 199 107 116 116 116 116 116 116 116 116 116 11				1		•													-
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COMBO-JET® Narrow-Angle Nozzles for Specialty/Spot Spraying

A full selection of narrow angle spray nozzles for use in specialty applications that require a narrow, but thick pattern. These nozzles are fully compatible with PWM spray systems, and other optical spray systems. Contact factory for availability.

COMBO-JET® ER & DX Series of 20°, 40° & 60° Spray Nozzles for Optical & Spot Spraying

A new series of DX drift reduction, narrow angle nozzles. Application Rate in Gallons/Acre

Size &	Rate	PSI		on 10	ncn No	ozzie Sį	oacing				
Angle	us gpm	FOI		@ Spr	ayer S	peed i	n mph		20° Nozzles	40° Nozzles	60° Nozzles
As spot-s			s conti	nue to	develo	p, Wilge	er expe	ects to l	ieties, please co nave a variety of e effectiveness.	ontact Wilger. f nozzles develo	ped to support
	Flow us gpm	Boom PSI		er Spe 8gpa				ng) @ 18gpa	Drift Reduction	Drift Reduction	Drift Reduction
	0.130	30	15	10	8	5.9	5.1	4.3	DX20-015	DX40-015	DX60-015
-015	0.150	40	18	11	9	7	5.9	5.0	#42220-015	#42240-015	#42260-015
Nozzles	0.168	50	20	12	10	8	7	5.5	Fine Spray	Fine Spray	Fine Spray
	0.184	60	22	14	11	8	7	6.1	ER20-015	ER40-015	ER60-015
	0.198	70	24	15	12	9	8	7	#42120-015	#42140-015	#42160-015
	Flow	Boom	Sp	rayer S	speed (10in sp	acing)	@	Drift	Drift	Drift
	us gpm	PSI	8gpa	10gpa	13gpa	15gpa	18gpa	20gpa	Reduction	Reduction	Reduction
	0.173	30	13	10	8	7	5.7	5.1	DX20-02	DX40-02	DX60-02

	Flow	Boom					ı spacii		Drift	Drift	Drift
	us gpm	PSI	5gpa				15gpa		Reduction	Reduction	Reduction
	0.130	30	15	10	8	5.9	5.1	4.3	DX20-015	DX40-015	DX60-015
-015	0.150	40	18	11	9	7	5.9	5.0	#42220-015	#42240-015	#42260-015
Nozzles	0.168	50	20	12	10	8	7	5.5	Fine Spray	Fine Spray	Fine Spray
	0.184	60	22	14	11	8	7	6.1	ER20-015	ER40-015	ER60-015
	0.198	70	24	15	12	9	8	7	#42120-015	#42140-015	#42160-015
	Flow	Boom PSI		rayer S			pacing)		Drift	Drift	Drift
	us gpm						18gpa		Reduction	Reduction DX40-02	Reduction DX60-02
-02	0.173	30 40	13 15	10 12	8	7 8	5.7 7	5.1 6	DX20-02 #42220-02	#42240-02	#42260-02
Nozzles	0.224	50	17	13	10	9	7	7	Fine Spray	Fine Spray	Fine Spray
INUZZIES	0.245	60	18	15	11	10	8	7	ER20-02	ER40-02	ER60-02
	0.265	70	20	16	12	10	9	8	#42120-02	#42140-02	#42160-02
	Flow	Boom					spacino		Drift	Drift	Drift
	us gpm	PSI					20qpa		Reduction	Reduction	Reduction
	0.217	30	13	11	9	7	6	5.6	DX20-025	DX40-025	DX60-025
-025	0.250	40	15	12	10	8	7	7	#42220-025	#42240-025	#42260-025
Nozzles	0.280	50	17	14	11	9	8	7	Fine Spray	Fine Spray	Fine Spray
	0.306	60	18	15	12	10	9	8	ER20-025	ER40-025	ER60-025
	0.331	70	20	16	13	11	10	9	#42120-025	#42140-025	#42160-025
	Flow	Boom					spacin		Drift	Drift	Drift
	us gpm	PSI	13gpa						Reduction	Reduction	Reduction
	0.260	30	12	10	9	8	7	6	DX20-03	DX40-03	DX60-03
-03	0.300	40	14	12	10	9	8	7	#42220-03	#42240-03	#42260-03
Nozzles	0.335	50	15	13	11	10	9	8	Fine Spray	Fine Spray	Fine Spray
	0.367	60	17 18	15 16	12 13	11 12	10	9	ER20-03 #42120-03	ER40-03 #42140-03	ER60-03 #42160-03
	0.397 Flow	70 Boom					spacino				
	us gpm	PSI					30gpa		Drift Reduction	Drift Reduction	Drift Reduction
	0.346	30	14	200pa 10	20 <u>00</u> 0	7 7	7	6	DX20-04	DX40-04	DX60-04
-04	0.400	40	16	12	10	9	8	7	#42220-04	#42240-04	#42260-04
Nozzles	0.447	50	18	13	11	10	9	8	Fine Spray	Fine Spray	Fine Spray
	0.490	60	19	15	12	10	10	9	ER20-04	ER40-04	ER60-04
	0.529	70	21	16	13	11	10	10	#42120-04	#42140-04	#42160-04
	Flow	Boom					spacing		Drift	Drift	Drift
	us gpm	PSI	18gpa	20gpa			35gpa		Reduction	Reduction	Reduction
	0.43	30	14	13	10	9	7	7	DX20-05	DX40-05	DX60-05
-05	0.50	40	17	15	12	10	9	8	#42220-05	#42240-05	DX60-05 #42260-05
-05 Nozzles	0.50 0.56	40 50	17 18	15 17	12 13	10 11	9 10	8	#42220-05 Fine Spray	#42240-05 Fine Spray	DX60-05 #42260-05 Fine Spray
	0.50 0.56 0.61	40 50 60	17 18 20	15 17 18	12 13 15	10 11 12	9 10 10	8 9 10	#42220-05 Fine Spray ER20-05	#42240-05 Fine Spray ER40-05	DX60-05 #42260-05 Fine Spray ER60-05
	0.50 0.56 0.61 0.66	40 50 60 70	17 18 20 22	15 17 18 20	12 13 15 16	10 11 12 13	9 10 10 11	8 9 10 10	#42220-05 Fine Spray ER20-05 #42120-05	#42240-05 Fine Spray ER40-05 #42140-05	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05
	0.50 0.56 0.61 0.66 Flow	40 50 60 70 Boom	17 18 20 22 Spra	15 17 18 20 yer Sp	12 13 15 16 eed (or	10 11 12 13 10in	9 10 10 11 spacing	8 9 10 10 9) @	#42220-05 Fine Spray ER20-05 #42120-05 Drift	#42240-05 Fine Spray ER40-05 #42140-05 Drift	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift
	0.50 0.56 0.61 0.66 Flow us gpm	40 50 60 70 Boom PSI	17 18 20 22 Spra 20gpa	15 17 18 20 yer Sp 25gpa	12 13 15 16 eed (or 30gpa	10 11 12 13 10in:	9 10 10 11 spacing 40gpa	8 9 10 10 0) @ 45gpa	#42220-05 Fine Spray ER20-05 #42120-05 Drift Reduction	#42240-05 Fine Spray ER40-05 #42140-05 Drift Reduction	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction
Nozzles	0.50 0.56 0.61 0.66 Flow us gpm 0.52	40 50 60 70 Boom PSI 30	17 18 20 22 Spra 20gpa 15	15 17 18 20 yer Sp 25gpa 12	12 13 15 16 eed (or 30gpa 10	10 11 12 13 10in: 35gpa 9	9 10 10 11 spacing 40gpa 8	8 9 10 10 0) @ 45gpa 7	#42220-05 Fine Spray ER20-05 #42120-05 Drift	#42240-05 Fine Spray ER40-05 #42140-05 Drift	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06
	0.50 0.56 0.61 0.66 Flow us gpm	40 50 60 70 Boom PSI	17 18 20 22 Spra 20gpa	15 17 18 20 yer Sp 25gpa	12 13 15 16 eed (or 30gpa	10 11 12 13 10in:	9 10 10 11 spacing 40gpa	8 9 10 10 0) @ 45gpa	#42220-05 Fine Spray ER20-05 #42120-05 Drift Reduction DX20-06 #42220-06	#42240-05 Fine Spray ER40-05 #42140-05 Drift Reduction DX40-06 #42240-06	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06 #42260-06
Nozzles -06	0.50 0.56 0.61 0.66 Flow us gpm 0.52 0.60 0.67	40 50 60 70 Boom PSI 30 40	17 18 20 22 Spra 20gpa 15 18	15 17 18 20 yer Sp 25gpa 12 14	12 13 15 16 eed (or 30gpa 10 12 13	10 11 12 13 10in: 35gpa 9	9 10 10 11 spacing 40gpa 8 9	8 9 10 10 10 2) @ 45gpa 7 8 9	#4222-05 Fine Spray ER20-05 #42120-05 Drift Reduction DX20-06 #42220-06 Fine Spray	#42240-05 Fine Spray ER40-05 #42140-05 Drift Reduction DX40-06 #42240-06 Fine Spray	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06 #42260-06 Fine Spray
Nozzles -06	0.50 0.56 0.61 0.66 Flow us gpm 0.52 0.60	40 50 60 70 Boom PSI 30 40 50	17 18 20 22 Spra 20gpa 15 18 20	15 17 18 20 ayer Sp 25gpa 12 14 16	12 13 15 16 eed (or 30gpa 10 12	10 11 12 13 10in: 35gpa 9 10	9 10 10 11 spacing 40gpa 8 9	8 9 10 10 0) @ 45gpa 7 8	#42220-05 Fine Spray ER20-05 #42120-05 Drift Reduction DX20-06 #42220-06	#42240-05 Fine Spray ER40-05 #42140-05 Drift Reduction DX40-06 #42240-06	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06 #42260-06
Nozzles -06	0.50 0.56 0.61 0.66 Flow us gpm 0.52 0.60 0.67 0.73	40 50 60 70 Boom PSI 30 40 50 60 70	17 18 20 22 Spra 20gpa 15 18 20 22 24 Spra	15 17 18 20 19er Sp 25gpa 12 14 16 17 19	12 13 15 16 eed (or 30gpa 10 12 13 15 16 eed (or	10 11 12 13 10in: 35gpa 9 10 11 12 13	9 10 10 11 spacing 40gpa 8 9 10 11 12 spacing	8 9 10 10 10 45gpa 7 8 9 10 10	#42220-05 Fine Spray ER20-05 #42120-05 Drift Reduction DX20-06 #42220-06 Fine Spray ER20-06	#42240-05 Fine Spray ER40-05 #42140-05 Drift Reduction DX40-06 #42240-06 Fine Spray ER40-06	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06 #42260-06
Nozzles -06	0.50 0.56 0.61 0.66 Flow us gpm 0.52 0.60 0.67 0.73	40 50 60 70 Boom PSI 30 40 50 60	17 18 20 22 Spra 20gpa 15 18 20 22 24 Spra	15 17 18 20 19er Sp 25gpa 12 14 16 17 19	12 13 15 16 eed (or 30gpa 10 12 13 15 16 eed (or	10 11 12 13 10in: 35gpa 9 10 11 12 13	9 10 10 11 spacing 40gpa 8 9 10 11	8 9 10 10 10 45gpa 7 8 9 10 10	#42220-05 Fine Spray ER20-05 #42120-05 Drift Reduction DX20-06 #42220-06 Fine Spray ER20-06 #42120-06	#42240-05 Fine Spray ER40-05 #42140-05 Drift Reduction DX40-06 #42240-06 Fine Spray ER40-06 #42140-06	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06 #42260-06 Fine Spray ER60-06 #42160-06
Nozzles -06 Nozzles	0.50 0.56 0.61 0.66 Flow us gpm 0.52 0.60 0.67 0.73 0.79 Flow us gpm 0.69	40 50 60 70 Boom PSI 30 40 50 60 70 Boom PSI	17 18 20 22 Spra 20gpa 15 18 20 22 24 Spra 30gpa 14	15 17 18 20 25gpa 12 14 16 17 19 19er Sp 35gpa 12	12 13 15 16 eed (or 30gpa 10 12 13 15 16 eed (or 40gpa 10	10 11 12 13 10in: 35gpa 9 10 11 12 13 10in: 45gpa 9	9 10 10 11 spacing 40gpa 8 9 10 11 12 spacing 50gpa 8	8 9 10 10 45gpa 7 8 9 10 10 10 g) @ 55gpa 8	#42220-05 Fine Spray ER20-05 #42120-05 Drift Reduction DX20-06 #42220-06 #42220-06 Drift Reduction DX20-06	#42240-05 Fine Spray ER40-05 #42140-05 Drift Reduction DX40-06 #42240-06 #42240-06 #42140-06 Drift Reduction DX40-08	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06 #42260-06 Fine Spray ER60-06 #42160-06 Drift Reduction DX60-08
-06 Nozzles	0.50 0.56 0.61 0.66 Flow us gpm 0.52 0.60 0.67 0.73 0.79 Flow us gpm 0.69 0.80	40 50 60 70 Boom PSI 30 40 50 60 70 Boom PSI 30	17 18 20 22 Spra 20gpa 15 18 20 22 24 Spra 30gpa 14	15 17 18 20 25gpa 12 14 16 17 19 19er Sp 35gpa 12	12 13 15 16 eed (or 30gpa 10 12 13 15 16 eed (or 40gpa 10	10 11 12 13 10in: 35gpa 9 10 11 12 13 10in: 45gpa 9	9 10 10 11 spacing 40gpa 8 9 10 11 12 spacing 50gpa 8	8 9 10 10 10 45gpa 7 8 9 10 10 10 2) @ 55gpa 8	#42220-05 Fine Spray ER20-05 #42120-05 Drift Reduction DX20-06 #42220-06 Fine Spray ER20-06 #42120-06 Drift Reduction DX20-08 #42220-08	#42240-05 Fine Spray ER40-05 #42140-05 Drift Reduction DX40-06 #42240-06 Fine Spray ER40-06 #42140-06 Drift Reduction DX40-08 #42240-08	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06 #42260-06 Fine Spray ER60-06 #42160-06 Drift Reduction DX60-08 #42260-08
Nozzles -06 Nozzles	0.50 0.56 0.61 0.66 Flow us gpm 0.52 0.60 0.67 0.73 0.79 Flow us gpm 0.69 0.80 0.89	40 50 60 70 Boom PSI 30 40 50 60 70 Boom PSI 30 40 50	17 18 20 22 Spra 20gpa 15 18 20 22 24 Spra 30gpa 14 16 18	15 17 18 20 25gpa 12 14 16 17 19 2yer Sp 35gpa 12 14 15	12 13 15 16 eed (or 30gpa 10 12 13 15 16 eed (or 40gpa 10 12	10 11 12 13 10in: 35gpa 9 10 11 12 13 10in: 45gpa 9	9 10 10 11 spacing 40gpa 8 9 10 11 12 spacing 50gpa 8 10	8 9 10 10 10 45gpa 7 8 9 10 10 2) @ 55gpa 8 9	#42220-05 Fine Spray ER20-05 #42120-05 Drift Reduction DX20-06 #42220-06 Fine Spray ER20-06 #42120-06 Drift Reduction DX20-08 #42220-08 Fine Spray	#42240-05 Fine Spray ER40-05 #42140-05 Drift Reduction DX40-06 #42240-06 Fine Spray ER40-06 #42140-06 Drift Reduction DX40-08 #42240-08	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06 #42260-06 Fine Spray ER60-06 #42160-06 Drift Reduction BX60-08 #42260-08
-06 Nozzles	0.50 0.56 0.61 0.66 Flow us gpm 0.52 0.60 0.67 0.73 0.79 Flow us gpm 0.69 0.80 0.89 0.98	40 50 60 70 Boom PSI 30 40 50 60 70 Boom PSI 30 40 50 60 60	17 18 20 22 Spra 20gpa 15 18 20 22 24 Spra 30gpa 14 16 18	15 17 18 20 25gpa 12 14 16 17 19 2yer Sp 35gpa 12 14 15	12 13 15 16 eed (or 30gpa 10 12 13 15 16 eed (or 40gpa 10 12	10 11 12 13 10in: 35gpa 9 10 11 12 13 10in: 45gpa 9 11 12	9 10 10 11 spacing 40gpa 8 9 10 11 12 spacing 50gpa 8 10 11	8 9 10 10 10 3) @ 45gpa 7 8 9 10 10 10 3) @ 55gpa 8 9 10	#42220-05 Fine Spray ER20-05 #42120-05 #42120-05 Drift Reduction DX20-06 #42220-06 Fine Spray ER20-06 #42120-06 Drift Reduction DX20-08 #42220-08 Fine Spray ER20-08	#42240-05 Fine Spray ER40-05 #42140-05 Drift Reduction DX40-06 #42240-06 Fine Spray ER40-06 #42140-06 Drift Reduction DX40-08 #42240-08	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06 #42260-06 #42160-06 Drift Reduction DX60-08 #42260-08 #42260-08
-06 Nozzles	0.50 0.56 0.61 0.66 Flow us gpm 0.52 0.60 0.67 0.73 0.79 Flow us gpm 0.69 0.80 0.80 0.89 0.98	40 50 60 70 Boom PSI 30 40 50 60 70 Boom PSI 30 40 50 60 70	17 18 20 22 Spra 20gpa 15 18 20 22 24 Spra 30gpa 14 16 18 19 21	15 17 18 20 yer Sp 25gpa 12 14 16 17 19 yer Sp 35gpa 12 14 15 17	12 13 15 16 eed (or 30gpa 10 12 13 15 16 eed (or 40gpa 10 12 13 15 16	10 11 12 13 10in : 35gpa 9 10 11 12 13 10in : 45gpa 9 11 12 13 14	9 10 10 11 spacing 40gpa 8 9 10 11 12 spacing 50gpa 8 10 11	8 9 10 10 10 3) @ 45gpa 7 8 9 10 10 10 55gpa 8 9 10	#42220-05 Fine Spray ER20-05 #42120-05 Drift Reduction DX20-06 #42220-06 Fine Spray ER20-06 #42120-06 Drift Reduction DX20-08 #42220-08 Fine Spray ER20-08 #42120-08	#42240-05 Fine Spray ER40-05 #42140-05 Drift Reduction DX40-06 #42240-06 Fine Spray ER40-06 #42140-06 Drift Reduction DX40-08 #42240-08	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06 #42260-06 Fine Spray ER60-06 #42160-08 #42260-08 Fine Spray ER60-08 #42160-08
-06 Nozzles	0.50 0.56 0.61 0.66 Flow us gpm 0.52 0.60 0.67 0.73 0.79 Flow us gpm 0.69 0.80 0.80 0.98 1.06 Flow	40 50 60 70 Boom PSI 30 40 50 60 70 Boom PSI 30 40 50 60 70 Boom PSI 30 80 80 80 80 80 80 80 80 80 80 80 80 80	17 18 20 22 Spra 20gpa 15 18 20 22 24 Spra 30gpa 14 16 18 19 21 Spra	15 17 18 20 25gpa 12 14 16 17 19 19er Sp 35gpa 12 14 15 17 18	12 13 15 16 eed (or 30gpa 10 12 13 15 16 eed (or 40gpa 10 12 13 15 16 eed (or 40gpa 10 12 13 15 16 eed (or 10 10 10 10 10 10 10 10 10 10 10 10 10	10 11 12 13 10in : 35gpa 9 10 11 12 13 10in : 45gpa 9 11 12 13 14	9 10 10 11 spacing 40gpa 8 9 10 11 12 spacing 50gpa 8 10 11 11 12 13	8 9 10 10 10 45gpa 7 8 9 10 10 55gpa 8 9 10 11 11 11 11 11 11 11 11 11 11 11 11	#42220-05 Fine Spray ER20-05 #42120-05 Drift Reduction DX20-06 #42220-06 Fine Spray ER20-06 #42120-06 Drift Reduction DX20-08 #42120-08 Fine Spray ER20-08 Fine Spray ER20-08 Fine Spray ER20-08 Fine Spray ER20-08	#42240-05 Fine Spray ER40-05 #42140-05 Drift Reduction DX40-06 #42240-06 Fine Spray ER40-06 #42140-06 Drift Reduction DX40-08 #42140-08 Fine Spray ER40-08 #42140-08	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06 #42260-06 Drift Reduction DX60-08 #42160-06 Fine Spray ER60-08 #42260-08
-06 Nozzles	0.50 0.56 0.61 0.66 Flow us gpm 0.52 0.60 0.67 0.73 0.79 Flow us gpm 0.69 0.80 0.89 0.98 1.06	40 50 60 70 Boom PSI 30 40 50 60 70 Boom PSI 30 40 50 60 70 Boom PSI 30 40 50 60 70 80 80 80 80 80 80 80 80 80 80 80 80 80	17 18 20 22 Spra 20gpa 15 18 20 22 24 Spra 30gpa 14 16 18 19 21 Spra 40gpa	15 17 18 20 yyer Sp 25gpa 12 14 16 17 19 yyer Sp 35gpa 12 14 15 17 18 yyer Sp 45gpa	12 13 15 16 eed (or 30gpa 10 12 13 15 16 eed (or 40gpa 10 12 13 15 16 eed (or 50gpa	10 11 12 13 10in: 35gpa 9 10 11 12 13 10in: 45gpa 9 11 12 13 14 10in: 60gpa	9 10 10 11 spacing 40gpa 8 9 10 11 12 spacing 50gpa 8 10 11 12 13 spacing 65gpa	8 9 10 10 10 45gpa 7 8 9 10 10 55gpa 8 9 10 11 11 11	#42220-05 Fine Spray ER20-05 #42120-05 Drift Reduction DX20-06 #42220-06 Fine Spray ER20-06 #42120-06 Drift Reduction DX20-08 #42120-08 Fine Spray ER20-08 Fine Spray ER20-08 Fine Spray ER20-08 #42120-08	#42240-05 Fine Spray ER40-05 #42140-05 Drift Reduction DX40-06 #42240-06 Fine Spray ER40-06 #42140-06 Orift Reduction DX40-08 #42240-08 Drift Reduction DX40-08 #620-08	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06 #42260-06 Drift Reduction DX60-08 #42160-08 #42160-08 Fine Spray ER60-08 #42160-08
-06 Nozzles -08 Nozzles	0.50 0.56 0.61 0.66 Flow us gpm 0.52 0.60 0.67 0.73 0.79 Flow us gpm 0.69 0.89 0.98 1.06 Flow us gpm 0.52 0.67 0.73 0.79	40 50 60 70 Boom PSI 30 40 50 Boom PSI 30 40 50 60 70 Boom PSI 30 40 50 60 70 80 80 80 80 80 80 80 80 80 80 80 80 80	17 18 20 22 Spra 20gpa 15 18 20 22 4 Spra 30gpa 14 16 18 19 21 Spra 40gpa 13	15 17 18 20 syer Sp 25gpa 12 14 16 17 19 syer Sp 35gpa 12 14 15 17 18 syer Sp 345gpa 11	12 13 15 16 eed (or 30gpa 10 12 13 15 16 eed (or 40gpa 10 12 13 15 16 eed (or 40gpa 10 10 10 10 10 10 10 10 10 10 10 10 10	10 11 12 13 10in 1 35gpa 9 10 11 12 13 10in 1 45gpa 9 11 12 13 14 10in 1 60gpa 9	9 10 10 11 11 spacini 40gpa 8 9 10 11 12 50gpa 8 10 11 12 13 13 13 85pacini 65gpa 8	8 9 10 10 10 2) @ 45gpa 7 8 9 10 10 55gpa 8 9 10 11 11 11 11 11 11 11 11 11 11 11 11	#42220-05 Fine Spray ER20-05 #42120-05 Drift Reduction DX20-06 #42220-06 Fine Spray ER20-06 #42120-06 Drift Reduction DX20-08 #42220-08 Fine Spray ER20-08 #42120-08 Drift Reduction DX20-18 Reduction DX20-18	#42240-05 Fine Spray ER40-05 #42140-05 Drift Reduction DX40-06 #42240-06 Fine Spray ER40-06 #42140-06 Drift Reduction DX40-08 #42240-08 Drift Reduction DX40-08 Brine Spray ER40-08 #42140-08 Drift Reduction DX40-10	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06 #42260-06 Fine Spray ER60-06 #42160-08 #42260-08 Fine Spray ER60-08 #42160-08 Fine Spray ER60-08
-06 Nozzles	0.50 0.56 0.61 0.66 Flow us gpm 0.52 0.60 0.67 0.73 0.79 Flow us gpm 0.69 0.80 0.89 1.06 Flow us gpm 0.98 1.06	40 50 60 70 Boom PSI 30 40 50 60 70 Boom PSI 30 40 50 60 70 80 80 80 80 80 80 80 80 80 80 80 80 80	17 18 20 22 Spraz 20gpa 15 18 20 22 24 Spra 14 16 18 19 21 Spra 14 16 18 19 21 15 16 18 19 21 15 16 16 16 16 16 16 16 16 16 16 16 16 16	15 17 18 20 25gpa 12 14 16 17 19 35gpa 12 14 15 17 18 19 45gpa 11 13	12 13 15 16 eed (ott) 30gpa 10 12 13 15 16 eed (ott) 40gpa 10 12 13 15 16 eed (ott) 10 12 13 15 16 10 10 10 10 10 10 10 10 10 10 10 10 10	10 11 12 13 35gpa 9 10 11 12 13 145gpa 9 11 12 13 140in; 45gpa 9 11 12 13 14 10in; 60gpa 9 10	9 10 10 11 11 spacini 40gpa 8 9 10 11 12 50gpa 8 10 11 11 12 13 13 50spacini 65gpacini 65gpacini 8	8 9 10 10 10 2) @ 45gpa 7 8 9 10 10 10 2) @ 555gpa 8 9 10 11 11 11 11 11 17	#42220-05 Fine Spray ER20-05 #42120-05 #42120-05 Drift Reduction DX20-06 #42220-06 Fine Spray ER20-06 Brift Reduction DX20-08 #42120-08 Fine Spray ER20-08 Fine Spray ER20-08 Fine Spray ER20-08 #42120-08 Drift Reduction DX20-10 #42220-10	#42240-05 Fine Spray ER40-05 #2140-05 #2140-05 Drift Reduction DX40-06 #42240-06 Fine Spray ER40-06 #2140-06 Drift Reduction DX40-08 #42240-08 Fine Spray ER40-08 #42140-08 Drift Reduction DX40-08 #42240-08 #42240-08 #4240-08 #4240-08	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06 #42260-06 Fine Spray ER60-06 #42160-06 Drift Reduction DX60-08 #42260-08 Fine Spray ER60-08 #42160-08 #42160-08
-06 Nozzles -08 Nozzles	0.50 0.56 0.61 0.66 Flow us gpm 0.52 0.60 0.67 0.73 0.79 Flow us gpm 0.69 0.80 0.89 0.99 0.90 0.89 0.89 0.90 1.06 1.06 1.06	40 50 60 70 Boom PSI 30 40 50 Boom PSI 30 40 50 60 70 Boom PSI 30 40 50 60 70 80 80 80 80 80 80 80 80 80 80 80 80 80	17 18 20 22 Spra 20gpa 15 18 20 22 4 Spra 30gpa 14 16 18 19 21 Spra 40gpa 13	15 17 18 20 syer Sp 25gpa 12 14 16 17 19 syer Sp 35gpa 12 14 15 17 18 syer Sp 345gpa 11	12 13 15 16 eed (oil 30gpa 10 12 13 15 16 eed (oil 40gpa 10 12 13 15 16 eed (oil 10 12 13 15 16 16 10 10 10 10 10 10 10 10 10 10 10 10 10	10 11 12 13 10in 1 35gpa 9 10 11 12 13 10in 1 45gpa 9 11 12 13 14 10in 1 60gpa 9	9 10 10 11 11 spacini 40gpa 8 9 10 11 12 50gpa 8 10 11 12 13 13 13 85pacini 65gpa 8	8 9 10 10 10 10 10 10 10 10 10 10 10 10 10	#42220-05 Fine Spray ER20-05 #42120-05 Drift Reduction DX20-06 #42220-06 Fine Spray ER20-06 #42120-06 Drift Reduction DX20-08 #42120-08 Fine Spray ER20-08 #42120-08 Fine Spray ER20-08 Fine Spray ER20-08 #4220-01 Fine Spray Fray Fray Fray Fray Fray Fray Fray F	#42240-05 Fine Spray ER40-05 #42140-05 Drift Reduction DX40-06 #42240-06 Fine Spray ER40-06 #42140-06 Drift Reduction DX40-08 #42140-08 Fine Spray ER40-08 Fine Spray ER40-08 Fine Spray ER40-08 #42240-10 Fine Spray ER40-10	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06 #42260-06 Drift Reduction DX60-08 #42260-08 Fine Spray ER60-08 #42160-08 Drift Reduction DX60-10 Fine Spray ER60-08
-06 Nozzles	0.50 0.56 0.61 0.66 Flow us gpm 0.52 0.60 0.67 0.73 0.79 Flow us gpm 0.69 0.80 0.89 1.06 Flow us gpm 0.98 1.06	40 50 60 70 Boom PSI 30 40 50 Boom PSI 30 40 40 50 60 70 Boom PSI 30 40 40 40 40 40 40 40 40 40 40 40 40 40	17 18 20 22 22 20gpa 15 18 20 22 24 Spres 30gpa 14 16 18 19 21 Spres 30gpa 14 15 17	15 17 18 20 25gpa 12 14 16 17 19 19yer Sp 35gpa 12 14 15 17 18 18 yer Sp 11 11 11 13	12 13 15 16 eed (ott) 30gpa 10 12 13 15 16 eed (ott) 40gpa 10 12 13 15 16 eed (ott) 10 12 13 15 16 10 10 10 10 10 10 10 10 10 10 10 10 10	10 11 12 13 13 10in; 35gpa 9 10 11 12 13 110in; 45gpa 9 11 12 13 14 10in; 9 9 11 12 13 10in; 9 10 11 11 12 13 13 14 15 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	9 10 10 11 11 11 12 13 10 11 11 12 13 13 10 11 11 12 13 13 10 10 11 11 12 13 10 10 11 11 11 11 11 11 11 11 11 11 11	8 9 10 10 10 2) @ 45gpa 7 8 9 10 10 10 2) @ 555gpa 8 9 10 11 11 11 11 11 17	#42220-05 Fine Spray ER20-05 #42120-05 #42120-05 Drift Reduction DX20-06 #42220-06 Fine Spray ER20-06 Brift Reduction DX20-08 #42120-08 Fine Spray ER20-08 Fine Spray ER20-08 Fine Spray ER20-08 #42120-08 Drift Reduction DX20-10 #42220-10	#42240-05 Fine Spray ER40-05 #2140-05 #2140-05 Drift Reduction DX40-06 #42240-06 Fine Spray ER40-06 #2140-06 Drift Reduction DX40-08 #42240-08 Fine Spray ER40-08 #42140-08 Drift Reduction DX40-08 #42240-08 #42240-08 #4240-08 #4240-08	DX60-05 #42260-05 Fine Spray ER60-05 #42160-05 Drift Reduction DX60-06 #42260-06 Fine Spray ER60-06 #42160-06 Drift Reduction DX60-08 #42260-08 Fine Spray ER60-08 #42160-08 #42160-08

For larger sizes of nozzles in narrow-angle varieties, please contact Wilger. As spot-spraying systems continue to develop, Wilger expects to have a variety of nozzles developed in turn to support the new improvements to maximize effectiveness.

What is optical spot spraying?

Optical spraying systems, or spot spraying based on optical feedback is used for a variety of purposes and with different modes of action.

Spray on Green

Optics identify 'green' targets in field, and sprays them.

- Pre-plant spraying to clear out established weeds
- Spraying fungicide on plants in field, ignoring dirt.
- Using modes of actions to manage resistant weeds.
- Foliar fertilizer applications on plant only

Green on Green

Optics & computer differentiate plants in field and spray target plants only.

- Spraying weeds ONLY, avoiding planted crop.
- Spraying crop with fungicide, ignoring weeds.
- Spraying different weeds with different chemicals

While the potential benefits of Green on Green provide a great deal of flexibility & neans to use cost-prohibitive herbicide regimens, the means to differentiate plants a application time and development of the computing power and learning mechanisms are continually under development.

Vhat is the **DX series** of spray tip?

Effectively through development of the narrow angle nozzles, there seems to be a relative sweet spot for consistent coverage and maintaining a reasonable level of driftable fines.

Since optical/spot sprayers are commonly sharing a maximum speed and narrow spacing, it is easier to consolidate what Wilger finds as a good middle ground to offer a single drift reduction nozzle

That being said, if you have a significant need for a coarser option than the DX nozzle, by all means contact Wilger and we would likely have something that migh be made available to you.

Other uses for narrow-angle nozzles

Narrow angle spray nozzles are also key in improving some non-broadcast spraying

Narrower angle nozzles can be used in applications that specifically target certain parts of the plant where application to the rest of the plant is waste

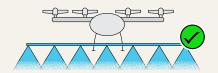
There are also cropping applications that might be continually cropping into high stubble, where traditional wide angle nozzles will result in significant spray catch and run-off in the stubble.

It is important to recognize narrow angle nozzles are not to be used strictly as replacements for nozzles that are intended for your sprayer (e.g. 80° or 110°). They are only an option to further isolate and target a spray target to achieve better spray efficiency and minimize chemical waste

Are they still PWM-compatible?

Absolutely!

The narrow angles use the same drift reduction design that is completely compatible with optical spray systems that are typically driven by PWM solenoids. The consistent thickness of the narrow angles make the key choices for optical spo sprayers for both compatibility and performance



UAV sprayer applicators ARE able to use DX nozzles for targeted spray applications but often due to boom constraints, required swath width or UAV sprayer outfitting, wider angle nozzles like the MR110° nozzles might be used. Operators in special circumstances that require a very narrow spray swath can take advantage of the DX series of narrow-angle nozzles.

DX nozzles can be used on UAV sprayers, but they would likely be specialty applications or on sprayers that require very narrow spacing.

Contact WILGER offices for smaller sizes of DX nozzles for Drone applications

COMBO-JET_® Cap Adapters

Order #####-V0 for viton o-ring assemblies

Wilger manufacturers a variety of adapters to adapt Wilger nozzles to other brands of nozzle bodies (e.g. Teejet, Hypro, Arag, etc) and vice versa. All adapters self-align cap to common nozzle offset.

Square Lug to COMBO-JET



40204-00 Converts Square Lug (e.g. Teejet/Hypro) Outlet to COMBO-JET -TWISTLOCK-

AGRIFAC to COMBO-JET



40205-00 Converts Agrifac Outlet to COMBO-JET -Easy nozzle sleevesnaps into Combo-Jet caps

JACTO to COMBO-JET



40207-00 Converts Jacto Outlet to COMBO-JET -Quarter Turn-

Square Lug to DOUBLE-DOWN



40206-00 Converts Square Lug Outlet to COMBO-JET Double-Down Outlets -TWISTLOCK-

AGRIFAC to *Y-Adapter*



40213-00 onverts Agrifac Outlet to COMBO-JET Y-adapter Outlets -TWISTLOCK-

HARDI to COMBO-JET



Converts HARDI Outlet to COMBO-JET -Semi-permanent snap on adapter-

40202-00

COMBO-JET to Square Lug



40203-00 Converts COMBO-JET Outlet to Square Lug (e.g. Teejet/Hypro) -Quarter Turn-

Radialock Slotted Caps (Compatible with COMBO-JET outlets)

Wilger manufacturers a variety of caps for accepting flanged spray tips onto any Combo-Jet or Combo-Rate nozzle outlets. These caps require a spray tip gasket to seal, which is sold separately.





Flanged Tips & Radialock slotted caps Order 40160-V0 for viton gasket

3/8" Slot 3/8" For 3/8" Teejet/Hypro 40269-05 spray tips

Available in colors: Grey (-09), Orange (-08), Brown (-07), Blue (-06), Black (-05), Yellow (-04), Green (-03), Will (-02), Red (-01)

1/2" Round Slot



larger Teejet/Hypro 40276-05 spray tips

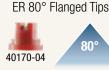
7/16" Wide Slot

HARDI Tip Slot HARDI brand spray tips 40275-05

Available in colors*: Black (-05), Yellow (-04), Green (-03), Wift (£02), Red (-01) *Check factory availability of non-black colors.

Conventional Flat Fan Flanged Spray Tips (3/8" slot)

Wilger manufacturers a variety of sizes of flanged stainless steel spray tips inserted permanently into a flanged spray tip assembly. These would correspond to Combo-Jet ER series of spray nozzle, as they are a conventional flat fan tip.



Optimal

ER 110° Flanged Tips 40169-04

Optimal Height 20"

easy identification

 Stainless Steel Insert Color-coded to flow rate & stamped for

Use with #40269-05 + #40160-00 gasket

Tip Size -005 ER80-005 80° ER Tip Part # 40170-005 110° ER Tip Part #

ER80-007 40170-007

-01 -015 ER80-015 ER80-01 40170-01 40170-015 ER110-01 40169-01

-02 ER80-02 40170-02 ER110-015 ER110-02 40169-015 40169-02 40169-025 40169-03

-025-03 ER80-03 ER80-025 40170-025 40170-03 ER110-025 ER110-03

-04 ER80-04 40170-04 ER110-04

40169-04

-05 ER80-05 40170-05 ER110-05

40169-05

-06 -08 ER80-06 ER80-08

40170-06 40170-08 ER110-06 ER110-08 40169-06 40169-08

For flow rate charts, spray quality, and more information on flanged spray tips, reference the 80° and 110° spray nozzle charts

COMBO-JET_® Caps, Adapters & Strainers

Wilger manufacturers a variety of caps that are used for metering flow rates (through hose barb, push-in tube, or streamer caps) or used as accessories for other spraying or plumbing functions.

Plug Caps



Caps unused Combo-Jet nozzle body outlets

Plug Cap						
Cap Only						
40272-05						

Double Nozzle Spraying Adapters

Be sure to read the 'Tip Selection Guide for Double Nozzle Spraying

Y-Adapter or 'Double-Down' mode?

To split up a high volume, coarse spray nozzle into two more meaningful spray qualities. Y-adapter is excellent for vertical growing targets, double-down is better into thick canopies.

PWM-Ready Double Nozzle Spraying

Just add the two nozzle sizes together for your PWM nozzle flow*

For example: MR110-04 + SM110-03 = 110-10

*PWM solenoid pressure drop would be based on -10 size

Threaded Outlet Adapters



Threaded adapter caps can be used for any application that would require a threaded fitting.

Threaded Outlet Caps									
Thread Size	FKM O-ring Assy	Cap Only							
1/8" NPT-F	40277-B5	40277-05							
1/4" NPT-F	40273-B5	40273-05							
45° 1/4" NPT-F	40274-B5	40274-05							

Y Splitter [60° Forward/Back]



Spray forward and backward for high volume and fungicide spray applications.

10440-00		
Y Splitter Ca	p (30° forward, 30	0° backward)
Cap ONLY	w/ FKM O-ring	w/ viton O-ring
40440-01	40440-00	40440-V0

Double-Down Adapter



Splitter used to spray with two nozzles to make more effective spray quality

Doul	ole-Down Adapter	Сар
p ONLY	w/ FKM O-ring	w/ viton O-ring
441_01	40441-00	40441-V0

Hose Barb Caps



Hose barb caps can be used as manifold plumbing parts or for metering flow.

Hose Barb Caps									
Barb Size	FKM O-ring Assy	Cap Only							
1/8"	40420-B5	40420-05							
1/4"	40422-B5	40422-05							
3/8"	40424-B5	40424-05							
1/2"	40426-B5	40426-05							

To use cap for metering, order CAP ONLY, with o-ring and 40285-## metering orifice.

Push-in-Tube Caps



Quick connect tube caps seal on the outside diameter of a tube, and used as manifold plumbing parts or for metering flow.

Quick Connect/Push-in-tube Caps								
Tube Size (O.D.) FKM O-ring Assy Cap Only								
1/4"	40435-B5	40435-05						
5/16"	40437-B5	40437-05						
3/8"	40436-B5	40436-05						

To use cap for metering, order CAP ONLY, with o-ring and 40285-## metering orifice.

2-Hole & 3-Hole Streamer Caps



2-hole streamer caps are used to stream liquid fertilizer for 10" coverage





3-hole streamer caps are used to stream liquid fertilizer for ~6.67" coverage



Drilled Fertilizer Streamer Caps [CAP ONLY]				
Cap Size Flow Range 2-Hole Cap 3-Hole Ca				
Small	0.05 - 0.4 us gpm	40432-047	40433-047	
Medium 0.2 - 1.0 us gpm		40432-086	40433-067	
Large 0.5 - 3.0 us gpm 40432-104 40433-1				

COMBO-JET Cap O-rings



13mm x 3mm o-ring for *COMBO-JET*® Caps & Spray Tips



os & Spray Tips 40260-Viton

40261-00

Adapter for non-metering caps Seal adapter is used to keep o-ring in place if metering orifice is NOT used

COMBO-JET Snap-in Strainers

Combo-jet strainers snap into the metering orifice or seal adapter for a 'one-piece'-handling cap



40250-00



e'-handling Slotted Plastic Strainer for Fertilizer



40248-00

Strainers					
Mesh Size	Slotted Strainer	Stainless Mesh	Color		
100 mesh	-	#40251-00	Green		
50 mesh	40249-00	#40250-00	Blue		
25 mesh	40248-00	-	Yellow		
16 mesh	40247-00	-	Gray		
10 1110311	10 mesii 40247-00 - Gray				

40251-00 40249-00

'-B5' Assembly Breakdown - For non-metering apps

For applications that do not required liquid metering orifices (e.g. plumbing manifolds), the -B5 is an assembly that includes an o-ring (#40260-00), seal adapter (#40261-00 in lieu of orifice), and cap.

Hose Drop & Extension Caps

Hose Drop Caps are used to feed or spray down below a canopy to minimize crop contact.

Part #

Length

Other styles of Hose Drop Assemblies using threaded inlets are also available. Find them in the DRY BOOMS section of the catalog.

22021-00

Ordering [Drilled] Streamer Caps

For drilled streamer cap assembly, order:

- 1. Metering Orifice (40285-## series)*
- 2. Streamer cap (2 or 3 hole, sized to flow range)
- 3. 0-ring seal (40260-00 or 40260-V0)
- 4. [Optional] Slotted Strainer

*For selecting metering orifices to fit your application, use Tip Wizard, consult flow charts, or use other tools available at www.wilger.net.



New 3-hole streamers (FS3) now available



3-hole fertilizer streamer (FS3) nozzle improves stream consistency at higher pressures for improved application.

Visit the COMBO-JET Fertilizer charts for part numbers

COMBO-JET Nozzle Bodies

Hinged Clamp for easy installation



Compact body sits directly under the boom. Perfect for tight boom frames & heavy

PWM solenoids

Nozzle Bodies can swap right/left orientation to avoid sprayer boom frame



Debris-cleaning 3/8" inlet slots for less residue buildup

Bodies can be equipped with any combination of control modules, including AIR-OFF, PWM solenoid, Manual ON/OFF or spring-based diaphragm check valves

Nozzle Bodies available in Combo-Jet or Square Lug styles (Teejet/Hypro/etc) with 1, 2 or 3 nozzle outlets

Single Outlet COMBO-JET® Nozzle Bodies

Robust and cost effective nozzle bodies for sprayers and used on wet boom liquid fertilizer kits.

Boom Pipe	Outlets	Style	Part#
3/4" (0.84" OD)	1 CJ	Check Valve	40611-00
1"		Check Valve 40621	40621-00
(1.315" OD)	1 CJ	Manual On/Off	40621-MS
		No Module	40621-NM



The COMBO-JETO Adventage



40611-P15 Single Outlet w/ 15PSI check valve red) and hose barb cap

Commonly used in liquid fertilizer metering manifolds mounted on plumbed pipe

KWIKSTOP™ stops Run-on

KWIKSTOP™passively purges air trapped in the sprayer boom.



Nozzles are fed from the top of the pipe

Less air means Less Nozzle Run-on & Drips

High/Low PSI Check Valves

Dual Outlet COMBO-JET® Swivel Bodies

Robust and cost effective nozzle bodies for sprayers to switch up to two nozzles by simply rotating the outlet. Safer and easier than handling contaminated nozzles.

Boom Pipe	Outlets	Style	Part#
3/4" (0.84" OD)	2 CJ	Check Valve	40612-00
1"		Check Valve	40622-00
(1.315" OD)	2 CJ	Manual On/Off	40622-MS
(1.313 00)		No Module	40622-NM





Replace assembly part # ending '-00' to order 4PSI or 15PSI check valves





-00 [BLUE] [Standard]

15 PSI -P15 [RED]

Triple Outlet COMBO-JET® Swivel Bodies

Robust and cost effective nozzle bodies for sprayers to switch up to three nozzles by simply rotating the outlet. Safer and easier than handling contaminated nozzles.

Boom Pipe	Outlets	Style	Part#
3/4" (0.84" OD)	3 CJ	Check Valve	40613-00
1" (1.315" OD)		Check Valve	40623-00
	3 CJ	Manual On/Off	40623-MS
		No Module	40623-NM





1" KWIKSTOP™ Nozzle Bodies

Nozzle bodies with raised inlets to passively purge air trapped at the top of a sprayer boom pipe, reducing nozzle run-on & improving boom shut-off response times.

Boom Pipe	Outlets	Style	Part#
1" (1.315" OD)	1 CJ	Check Valve	40631-00
	2 CJ	Check Valve	40632-00
	3 CJ	Check Valve	40633-00



Smooth Clamp Bodies

Swivel bodies have been switched to a standard bolt-mount hinge clamp.



Contact Wilger for a cross-reference chart for the smooth clamp part numbers and their bolt-mount replacement.

Nozzle Body Specifications

Operating Pressure	10*-100PSI
Single Outlet Flow Rate	2.1 us gpm @ 5PSI pressure drop 3.1 us gpm @ 10PSI pressure drop
Dual Swivel Flow Rate	1.7 us gpm @ 5PSI pressure drop 2.7 us gpm @ 10PSI pressure drop
Triple Swivel Flow Rate	1.6 us gpm @ 5PSI pressure drop 2.6 us gpm @ 10PSI pressure drop
O-ring Seals	FKM (viton avail.)
Materials	SS (screws) Polypropylene (body) Celcon (lower swivel)

Square Lug Swivel Nozzle Bodies & Accessories

Single Outlet Square Lug Nozzle Bodies

Robust and cost effective nozzle bodies for sprayers and used on wet boom liquid fertilizer kits.

Boom Pipe	Outlets	Style	Part#
3/4"	1 Square Lug	Check Valve	40651-00
(0.84" OD)		No Check	40140-00
	1" 1 Carrana Luca	Check Valve	40661-00
1" (1.315" OD)		Manual On/Off	40661-MS
	1 Square Lug	No Module	40661-NM
		No Check	40141-00



KWIKSTOP™ stops Run-on

KWIKSTOP™passively purges air trapped in the sprayer boom.



Nozzles are fed from the top of the pipe

Less air means Less Nozzle Run-on & Drips

Dual Outlet Square Lug Nozzle Bodies

Robust and cost effective nozzle bodies for sprayers to switch up to two nozzles by simply rotating the outlet. Safer and easier than handling contaminated nozzles.

		-	
Boom Pipe	Outlets	Style	Part#
3/4" (0.84" OD)	2 Square Lug	Check Valve	40652-00
4.11		Check Valve	40662-00
(1.315" OD)	2 Square Lug	Manual On/Off	40662-MS
(1.313 OD)		No Module	40662-NM





High/Low PSI Check Valves

Replace assembly part # ending '-00' to order 4PSI or 15PSI check valves







[BLUE]

-00 [Standard] 15 PSI -P15' [RED]

Nozzle Body Specifications

Operating Pressure	10*-100PSI	
Single Outlet Flow Rate	2.1 us gpm @ 5PSI pressure drop 3.1 us gpm @ 10PSI pressure drop	
Dual Swivel Flow Rate	1.7 us gpm @ 5PSI pressure drop 2.7 us gpm @ 10PSI pressure drop	
Triple Swivel Flow Rate	1.6 us gpm @ 5PSI pressure drop 2.6 us gpm @ 10PSI pressure drop	
O-ring Seals	FKM (viton avail.)	
Materials	SS (screws) Polypropylene (body) Celcon (lower swivel)	

Triple Outlet Square Lug Nozzle Bodies

Robust and cost effective nozzle bodies for sprayers to switch up to three nozzles by simply rotating the outlet. Safer and easier than handling contaminated nozzles.

Boom Pipe	Outlets	Style	Part#
3/4" (0.84" OD)	3 Square Lug	Check Valve	40653-00
1"		Check Valve	40663-00
(1.315" OD)	3 Square Lug	Manual On/Off	40663-MS
(1.315 00)		No Module	40663-NM





40672-00

1" KWIKSTOP™ Square Lug Nozzle Bodies

Nozzle bodies with raised inlets to passively purge air trapped at the top of a sprayer boom pipe, reducing nozzle run-on & improving boom shut-off response times.

Boom Pipe	Outlets	Style	Part#
4.0	1 Square Lug	KWIKSTOP	40671-00
(1.315" OD)	2 Square Lug	KWIKSTOP	40672-00
(1.313 00)	3 Square Lug	KWIKSTOD	40673-00





O-ring Repair Kit, CJ Nozzle Bodies, FKM (6 Bodies) 40166-05 O-ring Repair Kit, CJ Nozzle Bodies, VITON® (6 Bodies)

40193-02 SCREW, Hi-Lo, #10 x 3/4" SS [for Hinged Swivel Bodies] 40155-23 Molded Diaphragm, FKM (replaces 40155-07 + 20455-04)

20455-07 20455-04

Diaphragm Rubber Seal, EPDM (use w/ #20455-04)

40155-12

3/8" Nozzle body inlet o-ring



20455-07

40193-02

Swivel Body Replacement Parts - For ALL TYPES Swivel Bodies

O-ring, 3/8" inlet seal, #110, FKM, Duro 70 O-ring, Pressure Pad, Replacement (pairs with 40155-07)

Diaphragm Rubber Seal, VITON® (use w/ #20455-04)

CJ Nozzle Body Repair Kits* (up to 6 bodies) BUNA-N Kit incl 6x Pressure Pad O-rings #20455-04

24x Inner-body O-rings #40155-09 #40155-13 6x Diaphragms #40155-07 #40155-12 e either a pair of #20455-04 & #40155-07, or #40155-23. Both serve the same function.



40155-23 Requires pressure pad o-ring to be removed

20455-04 40155-07 *Also requires 20455-04

pressure pad o-ring

PRODUCT UPGRADE: Diaphragms A molded, single-piece diaphragm is replacing the two-piece diaphragm rubber + pressure pad o-ring. For replacing old-style parts, ENSURE pressure pad o-ring is removed from check valve module, and the new diaphragm groove fits where the pressure-pad o-ring was Replaced by Module #41100-03 Single-Piece Molded Diaphragm Diaphragm #40155-07

Square Lug Nozzle Body Accessories - Only for Square Lug Nozzle Body Outlets (Teejet, Hypro, etc)



40180-05

Caps Square Lug

nozzle outlets



flanged spray tips





40150-00 40158-00 Stainless Steel Strainers for Square-Lug Caps & Nozzle

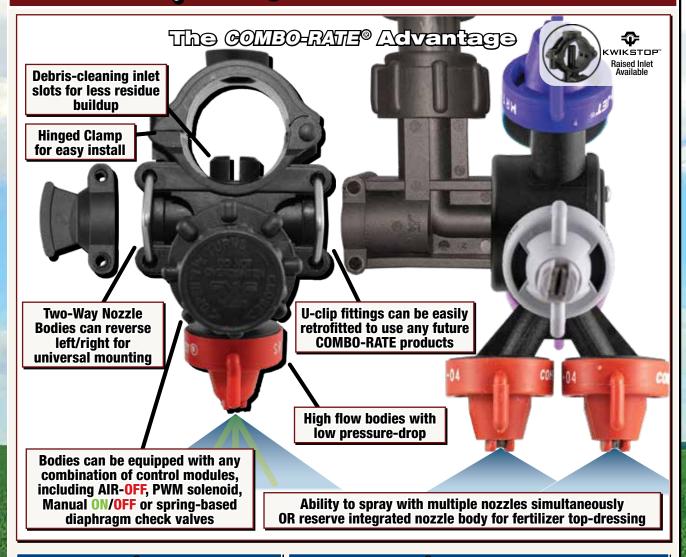
Cap Gaskets



40160-00 [FKM] 40160-V0 [viton]

Gaskets are required to seal all Square Lug Caps

COMBO-RATE Stacking Nozzle Bodies



COMBO-RATE® Side-fed Saddles

Robust side-fed saddles mount with a inlet hole on the side of a sprayer boom, with a female combo-clip port for CR bodies





41206-00





9/16" inlet

COMBO-RATE® II Top or Bottom-fed Saddles

Combo-Rate II saddles can be fed with an bottom inlet or flipped and fed from a hole in the top of a boom pipe to passively purge air trapped in a sprayer boom.





trapped air from the boom for faster nozzle shut-off

Same Parts.
Different
Configuration.

Traditional Bottom-Fed
Nozzle Body allows
air to be trapped and cause nozzle run-on



Combo-Rate female u-clip ports on two sides can be used to attach any Combo-Rate parts

CRII One-Way Stacking Saddles

Boom Size	Inlet Size	Part#
1/2" Pipe (0.84" OD)	3/8" inlet	41471-00
1" Dina	3/8" inlet	41475-00
1" Pipe	9/16" inlet	41477-00
(1.315" OD)	21/32" inlet	41479-00

CRII Two-Way Stacking Saddles

Boom Size	Inlet Size	Part#
1/2" Pipe (0.84" OD)	3/8" inlet	41472-00
1" Pipe	3/8" inlet	41476-00
(1.315" OD)	9/16" inlet	41478-00

41206-00

2" Pipe

(2.375" OD)

COMBO-RATE_® II Integrated Nozzle Bodies

One-Way Stacking Integrated COMBO-RATE ® II Nozzle Bodies

One-way stacking COMBO-RATE nozzle bodies stack to the left with one open u-clip port. Typically using a manual on/off module, these bodies can be used to spray separately than turrets/bodies or simultaneously from multiple nozzles. Multiple nozzle spraying can be an effective way to improve coverage in high volume applications to make a more meaningful mix of droplets.



Nozzle Body Specifications







HOW THEY WORK: Manual ON/OFF Check Valves

Since Combo-Rate nozzle bodies stack, a manual way to turn off low to certain outlets is required.

When the knob is OPEN, it acts a standard 10 PSI check valve



	Operating Pressure	10*-100PSI 2(80PSI for air-off)	
	3/8" Inlet Single Outlet Flow Rate	2.1 us gpm @ 5PSI pressure drop 3.1 us gpm @ 10PSI pressure drop	
	9/16" Inlet Single Outlet Flow Rate	2.2 us gpm @ 5PSI pressure drop 3.5 us gpm @ 10PSI pressure drop	
	21/32" Inlet High Flow Single Outlet Flow Rate	3.0 us gpm @ 5PSI pressure drop 4.0 us gpm @ 10PSI pressure drop	

O-ring Seals

Materials	SS (screws) Glass-Reinforced Polypropylene (body)	
10DCI minimum with 10DCI about valva		

Nozzle Bodies with 5/16" Bolt Mount Upper Clamp Module Description & Part# Sch40 Pipe Stacking Boom Size Inlet Size Outside Dia. Check **PWM** Manual Air-Off Direction Diameter ON/OFF (w/o Nut)** Valve Operated² 1/2 0.84 3/8" Inlet One-Way 41411-00 41413-00 41415-00 41417-00 3/4" 1 05' 3/8" Inlet One-Way 41421-00 41423-00 41425-00 41427-00 28mm 28mm 3/8" Inlet One-Way 41481-00 41483-00 41485-00 41487-00 3/8" Inlet One-Way 41431-00 41433-00 41435-00 41437-00 1.315 9/16" Inlet 41441-00 41443-00 41445-00 41447-00 One-Way 1" KWIKSTOP 1.315" 3/8" Inlet One-Way 41451-00 41453-00 41455-00 41457-00

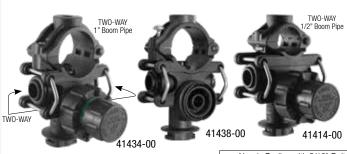
Two-Way Stacking Integrated COMBO-RATE ® II Nozzle Bodies

Two-way stacking COMBO-RATE nozzle bodies stack to both directions, with two open u-clip ports. Typically using a manual on/off module, these bodies can be used to spray separately than turrets/bodies or simultaneously from multiple nozzles. Multiple nozzle spraying can be an effective way to improve coverage in high volume applications to make a more meaningful mix of droplets.



WIK^STOP Raised Inlet Available

FKM (viton avail.)





			Nozzle Bodies with 5/16" Bolt Mount Upper Clamp				
	Sch40 Pipe	0	Module Description & Part#				
Boom Size	Outside Diameter	Inlet Size	Stacking Direction	Dia. Check Valve	Manual ON/OFF	Air-Off Operated ²	PWM (w/o Nut)**
1/2"	0.84"	3/8" Inlet	Two-Way	41412-00	41414-00	41416-00	41418-00
3/4"	1.05"	3/8" Inlet	Two-Way	41422-00	41424-00	41426-00	41428-00
28mm	28mm	3/8" Inlet	Two-Way	41482-00	41484-00	41486-00	41488-00
1" 1.315"	3/8" Inlet	Two-Way	41432-00	41434-00	41436-00	41438-00	
	1.315	9/16" Inlet	Two-Way	41442-00	41444-00	41446-00	41448-00
1" High Flow	1.315"	21/32" Inlet	Two-Way	41462-00	41464-00	41466-00	41468-00
1" KWIKSTOP	1.315"	3/8" Inlet	Two-Way	41452-00	41454-00	41456-00	41458-00

Stacked Outlet Specification

Operating Pressure	10*-100PSI 2(80PSI for air-off)			
3/8" Inlet Two Outlets Used Flow Rate	3.2 us gpm @ 5PSI pressure drop 5.0 us gpm @ 10PSI pressure drop			
9/16" Inlet Two Outlets Used Flow Rate	3.6 us gpm @ 5PSI pressure drop 6.2 us gpm @ 10PSI pressure drop			
21/32" Inlet High Flow Two Outlets Used Flow Rate	4.6 us gpm @ 5PSI pressure drop 9.0 us gpm @ 10PSI pressure drop			
O-ring Seals	FKM (viton avail.)			
Materials	SS (screws) Glass-Reinforced Polypropylene (body)			
* 10PSI minimum with 10PSI check valve				

Combo-Rate Body, Turret Replacement & Auxiliary Parts

40200-02 O-ring, CR Inter-body, #206, FKM O-ring, 3/8" Nozzle Body Inlet Stem, #110, FKM 20455-07 40200-02 O-ring, 9/16" Nozzle Body Inlet Stem, #206, FKM 41361-02 0-ring, 21/32" Nozzle Body Inlet Stem, #115, FKM 20460-04 U-clip, 304SS 41331-03 Screw, HiLo, SS, CRII Body Hinge Clamp Screw (for 2016+ newer)

41285-00 Adapter, CR Plug [Covers unused Combo-Rate port] 41286-00 Plug, Inner CR2 port plug [fits inside side port of CRII bodies] 41502-04 CR Turret Outlet Arm, Combo-Jet Outlet

CR Turret Outlet Arm, Double-Down Combo-Jet Outlet 41502-13 CR Turret Outlet Arm, Plug Diaphragm, Molded, FKM (Replaces #40155-07 + 20455-04) 41502-05 40155-23

CR Turret Outlet Arm, Square Lug Outlet

CRII Nozzle Body O-ring Repair Kit, FKM (6 Bodies) 41100-16 CRII Nozzle Body O-ring Repair Kit, VITON® (6 Bodies) 41502-11 CR Turret Repair Kit, FKM (2 Bodies) 41502-12 CR Turret Repair Kit, VITON® (2 Bodies)

Plug, CR Clamp to plug 21/32" inlet hole on 1" pipe * Requires #20455-07 O-Ring



41592-00 **Bolt-Mount** Clamp for any 1.315" OD. pipe or tube









20460-04













41502-10* 41502-13*

COMBO-RATE® Turret Repair Kits (For up to 2 turrets): 41286-00 #41502-11 or -12









COMBO-RATE® II Body Repair Kits* (For up to 6 bodies): #41100-15 or -16

10x Turret Outlet O-rings #20455-07 #40155-13 4x Turret Core O-rings 2x Diaphragm #41502-06 #40155-07 #41502-V6 #40155-12 2x Combo-Jet Outlet Arm #41502-04 #41502-04 2x Turret Plugs 2x Turret Lock Clips #41502-05 #41502-09

6x Pressure Pad O-rings #20455-04 #20455-V4 6x Inter-body O-rings #40200-02 #40200-V2 6x Diaphragms *40155-07 *Repair kits may include a pair(s) of #40155-07 and #20455-04, or a single #40155-23. Both ser

Standard Kit includes

41502-10

COMBO-RATE Stacking Thru & End Bodies

COMBO-RATE® Thru Bodies

Thru bodies stack onto any existing combo-clip female port and adds an additional combo-clip female port for further expansion.



	COMBO-RATE Thru Body						
	[Connects to any Combo-Rate female ports]						
	Dia.Check Manual Air-Off PWM						
Valve ON/OFF Operated ² (w/o							
	41100-00 41110-00 41125-00 41135-00						

COMBO-RATE® End Bodies

End bodies stack onto any existing combo-clip female port to add a nozzle body that can be equipped for any spraying needs.



COMBO-RATE End Body					
[Connects to any Combo-Rate female ports]					
Dia.Check Manual Air-Off PWM					
Valve ON/OFF Operated ² (w/o nut)**					
41101-00	41111-00	41126-00	41136-00		

CR Swivel End Bodies

End bodies that can be adjusted (via interior screw) in 15° increments for fence-row & crop adapted spraying applications.



COMBO-RATE End Body						
[Connects to any Combo-Rate female ports]						
Dia.Check Manual Air-Off PWM						
Valve ON/OFF Operated ² (w/o nut)**						
41102-00 41112-00 41127-00 41137-00						

Combo-Rate Stacking Body Specification

Operating Pressure 10*-100PSI 2(80PSI for air-off)

O-ring Seals FKM (viton avail.) Materials
Glass-reinforced Polypropylene

Flow Rate

2.1 us gpm (end & thru), 1.6 us gpm (swivel body)

COMBO-RATE Turrets

The COMECLATE TURES ACTOMICS

Common U-clip connections for all Combo-Rate parts

Each turret arm is o-ring sealed to minimize dust & debris entry

Module threads are compatible with most PWM spray systems

Front Turret

Side Turret

Top Turret

Square Lug, or Double-Down outlets



Bodies can be equipped with any combination of control modules, including AIR-OFF, PWM solenoid, Manual ON/OFF or spring-based diaphragm check valves

Double-Down Turrets allow for dual nozzle spraying for better overage in high volume & fungicide applications

COMBO-RATE turrets provide you options to configure a desired turret configuration, allowing it to be a universal turret for any brand of sprayer or nozzles.

COMBO-RATE_® Stacking Component Examples

















Thru Bodies **End Bodies** For Fence row mozzle

COMBO-RATE Turrets - cont'd

Sprayers have different nozzle requirements, due to spacing, boom frame design & interference, so Wilger has three styles of turrets that can be used to fit any situation.

COMBO-RATE Front Turrets

Front turrets stack onto any COMBO-RATE nozzle body, mounting on the common u-clip port. Turrets are available in a variety of outlet and module styles, which are mounted onto the 'front' face of the turret.

	Description & Part #				
Number of Outlets	Dia. Check Valve	Manual ON/OFF	Air-Off Operated	PWM (w/o nut)*	
3 CJ Outlet	41503-00	41513-00	41543-00	41533-00	
4 CJ Outlet	41504-00	41514-00	41544-00	41534-00	
5 CJ Outlet	41505-00	41515-00	41545-00	41535-00	
3 CJ Outlet + 2 SQ Lug Outlet	41505-32*	41515-32*	41545-32*	41535-32*	
Double-Down + 4 CJ Outlet	41506-00	41516-00	41546-00	41536-00	



PWM solenoid or other control module to function

HOW THEY WORK: Manual ON/OFF Valves

Since Combo-Rate nozzle bodies stack, a manual way to turn off flow to certain outlets is required.



When the knob is standard 10 PSI check valve

When the knob is CLOSED, it turns off ow to that nozzle outlet ONLY. It does not effect other stacked nozzle bodies.

Module Installation & Re-installation

During installation, ensure knob is in OPEN orientation. Otherwise the binding nut cannot seal the check valve module. Ensure the orientation tabs (green) are seated properly.

COMBO-RATE Side Turrets - Reversible

Side turrets stack onto any COMBO-RATE nozzle body, mounting on the common u-clip port. Turrets are available in a variety of outlet and module styles, which are mounted onto the side of the turret with a reversible module stem.

	Description & Part #					
Number of Outlets	Dia. Check Valve	Manual ON/OFF	Air-Off Operated	PWM (w/o nut)*		
3 CJ Outlet	41603-00	41613-00	41643-00	41633-00		
4 CJ Outlet	41604-00	41614-00	41644-00	41634-00		
5 CJ Outlet	41605-00	41615-00	41645-00	41635-00		
3 CJ Outlet + 2 SQ Lug Outlet	41605-32	41615-32	41645-32	41635-32		
Double-Down + 3 CJ Outlet	41606-00	41616-00	41646-00	41636-00		

Side-Turret Core Replacement kit for Teejet Threaded PWM Solenoid Side-Turret Core Replacement kit for Arag /Hypro Threaded PWM Solenoid



Reversing Orientation

Switch a side turret module stem from left to right in seconds. No extra parts required.



COMBO-RATE Top Turrets

Top turrets stack onto any COMBO-RATE nozzle body, mounting on the common u-clip port. Turrets are available in a variety of outlet and module styles, which are mounted onto the top of the turret. Ideal for use with bulky PWM solenoids in tight booms.

	Description & Part #				
Number of Outlets	Dia. Check Valve	Manual ON/OFF	Air-Off Operated	PWM (w/o nut)*	
3 CJ Outlet	41803-00	41813-00	41843-00	41833-00	
4 CJ Outlet	41804-00	41814-00	41844-00	41834-00	
5 CJ Outlet	41805-00	41815-00	41845-00	41835-00	
3 CJ Outlet + 2 SQ Lug Outlet	41805-32	41815-32	41845-32	41835-32	
Double-Down + 4 CJ Outlet	41806-00	41816-00	41846-00	41836-00	

Module points upwards to keep large solenoids (e.g. Hawkeye II) out of the way of other boom parts.

PWM Solenoids

Open module thread must have PWM solenoid or other control module to function

PWM Solenoids



Double-Down Turrets

Double nozzles from a single turret outlet. Great for double-down PWM spraying. **PWM** APPROVED 41836-00 1 Double-Down Top Turret w/ solenoid & nozzles lenoid sold sep.)

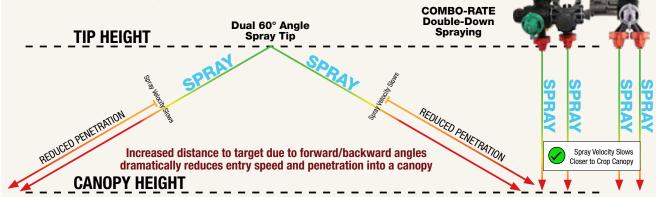
Increasing Coverage with Crop-Adapted Spraying

Different crops require different kinds of spray coverage for best efficacy, so changing how spray is deposited can often provide beneficial results in both coverage and application efficacy. It starts with adapting how the crop is being targeted, ensuring maximizing spray deposition on the target area, and minimizing spray on lessideal or wasted areas.

For example, using two spray tips **straight down** can provide better penetration through thick canopies, allowing for better interior canopy coverage; while two angled spray patterns **forward & backward** can lend to spray coverage at the top canopy foliage or on both front/back of a cereal head.

Why use two nozzles straight down, and not a multi-angle spray tip?

Further distance to target can mean less canopy penetration with angled



COMBO-RATE gives you better penetration and coverage for a more consistent application into thick canopy crops.

Examples of *Tough to Penetrate* Crop Canopies



Bodies

& COMBO-RATE







Picking Nozzles for Double-Down Spraying?

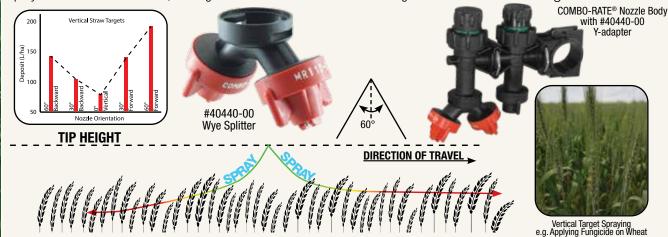
Applicators often already have nozzles to be used in pairs for double down spraying.

E.g. 5 + 10 gal/acre nozzles could be used for 15 gal/acre. *Visit the dual tip spraying guide in the catalog for more info.*

What about spraying vertical targets that don't have a dense canopy?

Angled spray for vertical growing targets (e.g. cereal heads) can provide superior coverage

Spraying a vertical target is different than spraying into a canopy. Spraying forward/backward with a nozzles produces spray that can travel horizontal, making it more effective to cover vertical targets at suitable boom heights.



Dry Boom Nozzle Bodies & Accessories

Compact Nozzle Bodies

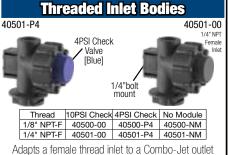
Compact Bodies have many uses, as inline check valves on planting equipment, estate sprayers, dry boom nozzle bodies, or other situations that would require a compact check valve with a Combo-Jet cap outlet.



a Combo-Jet outlet

3/4"HB x 3/8" NPT-M







5/8" Square-Mount Dry Boom Swivel Nozzle Bodies with 3/8" NPT-F feed

Square-Mount nozzle bodies attach to a boom frame with 5/8" square mounts, and are fed by a 3/8" NPT-F inlet.



40313-00

40312-00

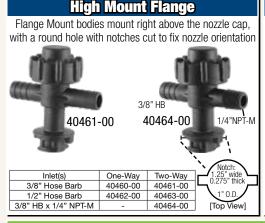






High Mount Dry Boom Nozzle Bodies with Hose Shank Feed

40311-00







Inlet(s)	One-Way	Two-Way
3/8" Hose Barb	40450-00	40451-00
1/2" Hose Barb	40452-00	40453-00
3/8" HB x 1/4" NPT-M	-	40454-00



5/8" Square Mount Stainless Steel Clamps

Wilger manufactures a series of 5/8" square mount clamps that are used with compatible nozzle bodies. Refer to the CLAMPS pages to find the full listing of available stainless steel clamps



Dry Boom Nozzle Bodies & Accessories - cont'd

Rotating Adjustable Swivel Bodies & Hose Drop Assemblies

Hose Drop Adapters

Nylon hose drops are used to feed bodies to spray down below a canopy to minimize crop contact

Hose Drop Adapters

Inlet	Outlet	Length	Part #
		16"	22021-00
	1/4"	24"	22031-00
1/4"	NPT-M	36"	22037-00
NPT-M		48"	22047-00
	1/4"	16"	22025-00
1	NPT-F	24"	22035-00



22021-00

lose Drop & Extension Caps

		-		
Outlet	Length	Part #	.00	
Combo-Jet	2"	40210-00	100	10
to Combo-Jet	5"	40211-00	77	
Combo-Jet	16"	22026-00		и
Cap to	24"	22036-00		
1/4" NPT-M	36"	22038-00		
1/4 INF 1-IVI	48"	22048-00	J, H	ΨŞ
40210-00 2" Compo-sit Cap 2:25" Distriction	5.0	5.25* 10211-00 Combo- let Cap Extrasor	16,	22026-00

Adjustable Swivel Bodies [360° Lockable Rotation Front/Back]

Swivel Bodies can be rotated front to back 360° use for Crop Adapted Spraying or other targeting



		(Control Module	S
Inlet Size	Outlet(s)	Without Dia.	Dia. Check	Manual On/Off
1/4"	Single	40225-00	40231-00	40237-00
NPT-M	Double	40226-00	40232-00	40238-00
1/4"	Single	40227-00	40233-00	40239-00
NPT-F	Double	40228-00	40234-00	40240-00
1/4"NPT-M w/ 1/4"	Single	40229-00	40235-00	40241-00
NPT-F	Double	40230-00	40236-00	40242-00
3/8" HB w/ 5/8" Sq. Mount	Single	40243-00	40244-00	40245-00

Crop Adapted Spraying

Using adjusted nozzle angles, swath and direction to better adapt to specific crop targets to maximize efficacy or minimize





40237-03 Diaphragm Manual Shut-off Assembly, Replacement (for adjustable swivel bodies only)

Low-Mount Compact Bodies - Contact Factory for availability. (Non-stocked item)

11/16" Thread Mount Low Mount Bodies

A low mounting compact body that attaches to a sprayer boom frame with an 11/16" threaded nut.



40366-00

3/8" HB

1/2" HB

3/4" HB

40155-21

Inlet Size One-Way [Left] One-Way [Right]

Module Retainer, Replacement

40361-00

40366-00

40371-00

40360-00

40365-00

40370-00

40199-00 Lock Nut. 11/16" Thread



40367-00

Two-Way

40362-00

40367-00

40372-00



40155-2



40199-00

5/8" Square Mount Low Mount Bodies

A low mounting compact body that attaches to a sprayer boom frame with an common 5/8" square mounting port.



40385-00

40382-00

40155-21

Inlet Size	One-Way [Left]	One-Way [Right]	Two-Way	Three-Way
3/8" HB	40380-00	40381-00	40382-00	40383-00
1/2" HB	40385-00	40386-00	40387-00	40388-00
3/4" HB	40390-00	40391-00	40392-00	N/A

40155-21 Module Retainer, Replacement



COMBO-RATE Boomless Sprayer Manifold Assemblies

Boomless sprayers are used to spray areas not accessible by traditional boomed sprayers, such as ditches, roadways, pastures, and commercial/industrial areas.

COMBO-RATE boomless sprayers can be configured in hundreds of ways depending on mounting, size, and flow requirement.



Example Assembly	Flow Rate (us gal/min)	Part#
O Marria Danielana	1.3 us gal/min	70154-01
3-Nozzle Boomless	2.6 us gal/min	70154-03
Spraying Manifold	5.8 us gal/min	70154-06
	2.3 us gal/min	70155-02
5-Nozzle Boomless	2.9 us gal/min	70155-03
Spraying Manifold	5.8 us gal/min	70155-06
	11.5 us gal/min	70155-12
	3.9 us gal/min	70156-04
7-Nozzle Boomless	4.9 us gal/min	70156-05
Spraying Manifold	9.6 us gal/min	70156-10
	19.5 us gal/min	70156-20



Adiustable swath distance charts online



Stainless Steel Clamps for Sprayer & Liquid Fertilizer Appl.

5/8" Square Mount Clamps

5/8" Square Mount clamps attach a nozzle body with 5/8" square mount to



Мс			ndard ount Clamp (SS)	Adjustable High-Reach 5/8" Square Mount Clamp (SS)
		for Round Tube	for Square Tube	for either Round Tube or Square Tube
	1/2"	40320-SS	N/A	3/4" Tube Extra High Reach
	3/4"	40321-SS	40325-SS	40343-SS
	1"	40322-SS	40326-SS	3/4" to 1-1/4"
	1-1/4"	N/A 40327-SS		40341-SS
	1-1/2"	N/A 40328-SS		1-1/2" to 2"
	2"	N/A	40330-SS	40342-SS

3/4" Square Mount Clamps for Nozzle Bodies

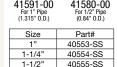


Sq. Tube Size	Part#
1"	41261-SS
1-1/4"	41262-SS
1-1/2"	41263-SS
2"	41264-SS

Example of Example of 3/4" Square mount clamp and adapters, mounting to a Combo-Rate u-clip port



41591-00 For 1" Pipe (1.315" O.D.) 41580-00 For 1/2" Pipe (0.84" 0.D.)

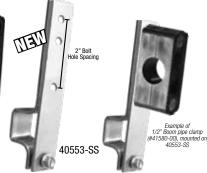


Two-Hole Bolt-Mount Clamps for Sq. Tube Two-Hole Clamps for Flow Indicator, Manifold, & Nozzle Body Mounting



Three-Hole Bolt-Mount Clamps for Sq. Tube

Three-Hole Clamps for Sprayer Boom Tube, Nozzle Body & Utility Mounting Boom tube clamps are sold in halves, so two are required for proper use.



Nozzle Body Accessories & Replacement Parts

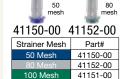
Combo-Rate Control Modules & Nuts

Wilger manufacturers a few styles of control modules that can be swapped between any Combo-Rate or Combo-Jet nozzle bodies



Inter-body Strainers

Inter-body strainers are used in-between Combo-Rate nozzle bodies to catch burrs or debris during the break-in period of new sprayers, or to further protect_PWM solenoids



Recommended to apply 20PSI more than spray pre



al operation & quick shut-off

Diaphragm Seals

Rubber Diaphragms are used in ALL control modules to seal the flow within the check valve



All-in-One Diaphragm, used in parts made after 2019

40155-23 The bottom of the

a groove for a pres-

sure pad o-ring or

control modules have all-in-one diaphragm

Two-piece diaphragm & pressure pad o-ring

Diaphragm

Pressure pad O-Ring

40155-07 40155-12

20455-04 20455-V4 (viton)

Either rubber diaphragm can be typically used, but ensure to replace diaphragm in proper orientation and remove pressure pad o-ring if 401555-23 diaphragm is used.

0-ring Seals

O-ring seals are commonly used on many component parts.

FKM material is standard, viton is available.

0-ring	Description/Where Used	FKM#	VITON #
13mm x 3mm	COMBO-JET spray tips	40260-00	40260-V0
#009	CR Top-turret faceplate	41802-04	40802-V4
#015	ORS Metering orifices	40225-04	40225-05
#106	9/16" Nozzle body inlet	51204-04	51204-V4
#108	Module pressure pads	20455-04	20455-V4
#110	3/8" Nozzle body inlet	20455-07	20455-V7
#115	21/32" Nozzle body inlet	41361-02	41361-v2
#116	1/2" QN100 connections	25120-02	25120-V2
#118	ORS Strainer cartridges	-	20576-V4
#119	EFM Sensor housing seal	20580-12	20580-13
#121	CR Turret core seals	41502-06	41502-V6
#203	5/16" Push-In Tube O-ring	20457-03	20457-v3
#206	CR Stacked body side seal	40200-02	40200-v2
#212	0-ring Seal (ORS) fittings	20460-03	20460-15
#214	Boom end flush valve core	-	25175-08
#219	QN100 0-ring seal	25160-02	25160-V2

Air Tees & Reducers

Tees and Reducers that can be used to couple tube for air or liquid supply





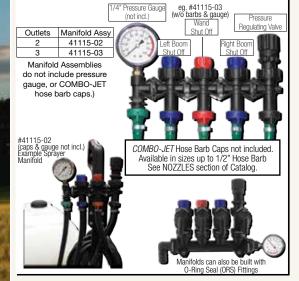
20455-00 20456-00

Fitting Type	Description	Part#
Tee	3/8" x 3/8" x 1/4" O.D.	20455-00
iee	5/16" x 5/16" x 1/4" O.D.	20457-00
Reducer	3/8" x 1/4" O.D.	20456-00

Estate Sprayer Manifolds, Accessories & Adapters

Estate Sprayer Manifold Assemblies

Wilger manifold assemblies are pre-built manifolds based on common requirements. COMBO-RATE components can be used to expand or change any manifold.



Connection	Pressure	Manual On/Off	1/4" NPT-F for
Connection	Regulating Valve	Check Valve	Pressure Gauge
Thru Body	41130-00	41110-00	-
End Body	41131-00	41111-00	
Combo-Clip Male	41131-00	41111-00	-
End Body			41251-00
Combo-Clip Female	_	-	41201-00

Combo-Clip (CC) Adapters & 3/4" Sq. Mount Clamps

Combo-Clip connections are compatible with all Combo-Rate Fittings and Nozzle Bodies

Combo onb	00111100110110	are compatible
Connection	Outlet	Part #
Combo-Clip	Plug	41285-00
	1/4" NPT-F	41275-00
iviale	3/8" NPT-F	41276-00
Combo-Clip Female	1/4" NPT-F	41251-00
	1/4" NPT-M	41252-00
	3/8" NPT-M	41253-00
	90° CC-M	41250-00
Combo-Clip	1/4" NPT-F	41255-00
3/4" Sq Mount	3/8" NPT-F	41256-00
	Connection Combo-Clip Male Combo-Clip Female Combo-Clip Female w/	Combo-Clip Male

41285-00 41255-00 41275-00 41252-00 41250-00

Clamps for 3/4" Square-Mount Adapters Square Tube 3/4" Sq. Mount Nozzle Body Clamps 41261-SS 1-1/4 41262-SS 41263-SS 1-1/2

Combo-Clip Adapters can be used to convert a traditional dry boom sprayer to use cutting edge COMBO-RATE turrets & fittings

41256-00 w/ 3/4" Sq. Mount Clamp

Regulating & Manual On/Off Manifold Valves



41130-00

41131-00 41110-00 41111-00 41251-00

Ensure to visit the NOZZLES section of the catalog for the full listing of **COMBO-JET** Caps

1/2" & 1" Stainless Steel Tube For Quick-Nut & Quick-Flange Fittings

Wilger Stainless Steel Tubing is engineered for high performing modern sprayers. The high flow sprayer boom tube shares outside dimensions of commonly-used sch40 pipe, but with dramatically reduced weight.



Custom tube lengths, spacing and inlet holes are available by order.

Larger Inside Diameter Inside diameter is larger to

accommodate higher flow rates

Rolled End for Cost-Effective Manufacturing

Tube ends are rolled instead of threaded to minimize downtime, and thread leaking/failure

For Recirculating Booms

Compatible boom fittings & tubing for building recirculating booms

1" Stainless Steel Tubing Shares 1" sch40 pipe

outside diameter (1.315" OD.) with larger 1.25" inside diameter

1.315" 1.25 0.D. I.D.

Lighter 1" Boom = Less Fuel weighs 66% of aluminum

weighs 23% of sch40 pipe Lighter than hose

1/2" Stainless Steel Tubing

Shares 1/2" sch40 pipe outside diameter (0.84" OD.) with larger 0.788" inside diameter



Lighter 1/2" Boom = Less Fuel

weighs 80% of aluminum weighs 28% of sch40 pipe Lighter than hose

Sprayer Tube Shipping Consideration - Length

Depending on requirement for sprayer tube length, shipping costs are generally less expensive for tubes that are less than 9' (108") in length.

Pre-punched Outlet Spacing

Sprayer tubes are commonly pre-punched to 20" nozzle spacing, but also available in pre-punched to 10", 15", 30" or custom spacing as required.

Picking the Correct Style of Tube End & Length

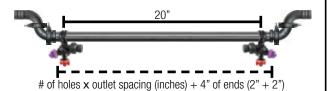
Different sprayer boom configurations require different combinations of lengths of tube.

To simplify the boom configuration & planning process, consider starting with tubes with the least amount of extra material on the ends. This will reduce dead-ends that may trap chemical residue. With the minimal tube length in mind (# of holes on tube x hole spacing), then consider different tube-end configurations.

Some fittings shorten the tube lengths required (as they include the last nozzle), reducing the # of holes required.

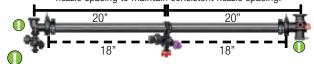
Standard Tube Ends (2")

Tubes that have 2" of tube after the last nozzle body are commonly used with QN100 or QF100 plumbing parts.



Super Compact Nozzle Body Ends (18")

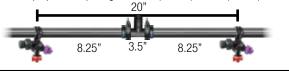
The CR BEFV & QF100 w/ CR clamp integrates the last nozzle for a super compact boom end. The tube should be 2" shorter than the intended nozzle spacing to maintain consistent nozzle spacing.



NOTE: For each CR BEFV/Integrated Elbow, tube will be 1 inlet hole "short"

Center-fed Section Ends (8" or 8.25")

Tubes that are center-fed with Tees require a pair of longer tube sides to maintain proper 20" spacing with a 4" (QN100) or 3.5"(QF100) wide tee.



10" Ends for Tube to Tube SST

For situations that require two smaller tubes to be joined tube to tube, the 10" ends maintain 20" spacing between the last nozzle bodies



Select a Type of Plumbing Parts

NEW Quick-Flange (QF100) Fittings

A series of flanged adapters that convert either a rolled-end tube (like SST) or other 1.315" OD tube/pipe to a common 1" flange and tool-free clamp system



Quick Nut (QN100 & QN50) Fittings

A series of quick couplers that use the rolled end to connect to a variety of sweep sprayer fittings to maximize flow capacity and boom hygiene.



Quick-Flange Fittings & Fluid Supply System

The Quickflenge Adventage



Perfect Recirc. **Booms**



Stronger Compact **Fittings**



Compact Boom End **Options**



No Threads or Sealant Required



Cutting out Boom Contamination

Retrofitting & Flange Compatibility

Fittings available for complementing any sort of sprayer boom & more.

CAN BE OUTFITTED FOR:

1" sch40 Pipe (1.315" 0D)



Any 1" Flanged Fittings Wilger Stainless Tubing

Case Thin Wall Stainless

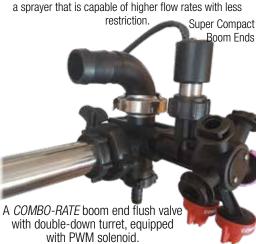


Compatible with other 1" Flange Fittings



Compact & Robust Sweep Fittings

Sweep fittings reduce turbulence & pressure loss, producing a sprayer that is capable of higher flow rates with less



Recirculation Made Easy

Many options for any recirculating boom



Sweep flange fittings to maximize flow through a sprayer

Quick-Flange Adapters for Different Sprayer Tubing Types

Adapting Quick-Flange Fittings to any 1" PIPE, 1" SST, or Case® TWS Boom Tube

QF100 Fittings can be seamlessly retrofitted or adapted to any 1" Pipe, QN SST, or TWS Booms to a 1" Flange Fitting.

Case® Thin-Wall Stainless (TWS) to Quick-Flange



27312-00

27343-00 QF100 x 1-1/4" HB, 90°

Case® is a registered trademarks of CNH Industrial America LLC.

Wilger Stainless Steel Tube (SST) to Quick-Flange



Three-piece flange adapter snaps over the boom pipe and tightens with a binding nut, sealing with a SST to QF100 Seal.

27312-00 3-piece flange adapter end

27343-00 QF100 x 1-1/4" HB. 90°

Through-Pipe to Quick-Flange (For CR BEFV only)

Through-Pipe Flange End Adapter Super Flexible Up to 1" excess material can fit into a CR BEFV

27382-00 QF100 through-pipe adapter kit

27360-00 CR BEFV for with flange:

Three-piece flange

adapter snaps over

the boom pipe and

tightens with a binding

nut, sealing with a

TWS to QF100 Seal.

Two half-clamps mount on a boom tube, securing to the tube-end adapter. The result is a flanged tube end with up to 1" of excess tube material sticking out of the adapter. This excess tube slides into a CR BEFV, providing tube length flexibility.

Cut-Pipe to Quick-Flange



Compatible with any Quick-Flange or common-flange fittings.

Two half-clamps mount on a boom tube, securing to the cut pipe-end adapter. The result is a common-flange end.

Not shown: An additional compact 2-piece pipe end adapter is also available for Case Thin-wall stainless tube, and Wilger SST. It is not intended for robust, mobile applications, but remains an option for adapting tube to a flange end.

Building a SST Sprayer Boom for Quick-Flange (QF100)

When planning to build a sprayer boom with Wilger's Stainless Steel Tube, follow these steps to break down the process and engineer the best performing sprayer boom possible.

Determine tube lengths & spacing required for each section. Simply count the number of outlets on each **STEP** required boom tube between each fold, accounting for separated sections (if required).

STEP(2) Split up nozzle sections based on boom type, or to minimize boom tube length (e.g. 11 nozzles max).

For Recirculating (R) Sprayer Booms: Anticipate keeping sections made with as few boom tubes as possible, as plumbing fittings will only be on the either end of the tube (aside from any tube-to-tube joints on the same section)

For Standard (S) Sprayer Booms: Anticipate splitting sections in half, allowing for a center-fed sweep tee. providing optimal pressure to each nozzle in each sprayer section.

Determine whether any boom end nozzle bodies (like Combo-Rate Boom End Flush Valve nozzle body) are being used, as they may require different lengths (as they encompass the last outlet on a sprayer boom) Determine the tube end spacing depending on the fittings used.

CR BEFV requires 18" tube end. Tube Joint requires 10" tube end. Regular fittings requires 2" end.

For example, a 5-section recirculation sprayer, with 72 outlets (on 20" spacing) using Combo-Rate End Flush Valve Bodies

	SECTION 1		SECTION 2	SECTION 3		SECTION 4	SECTION 5
STEP 1 Section sizing	11 nozzles	20 no	zzles	10 nozzles	20 no	zzles	11 nozzles
STEP ② Tube Lengths	11 hole	10 hole + 10) hole joined	10 hole	10 hole + 10) hole joined	11 hole
STEP 3 Specialty Boom End Considerations	11 hole -2 (CR BEFV) 9 hole tube	10 hole -1 (CR BEFV) 9 hole tube + joint	10 hole -1 (CR BEFV) 9 hole tube + joint	10 hole <u>-2 (CR BEFV)</u> 8 hole tube	10 hole -1 (CR BEFV) 9 hole tube + joint	10 hole -1 (CR BEFV) 9 hole tube + joint	11 hole <u>-2 (CR BEFV)</u> 9 hole tube
STEP 4 Tube/End Lengths to Order	9 hole tube with 18" End (CR BEFV) & 18" End (CR BEFV)	9 hole tube with 18" End (CR BEFV) & 10" End (joint)	9 hole tube with 10" End (joint) & 18" End (CR BEFV)	8 hole tube with 18" End (CR BEFV) & 18" End (CR BEFV)	18" End (CR BEFV)	9 hole tube with 10" End (joint) & 18" End (CR BEFV)	9 hole tube with 18" End (CR BEFV) & 18" End (CR BEFV)

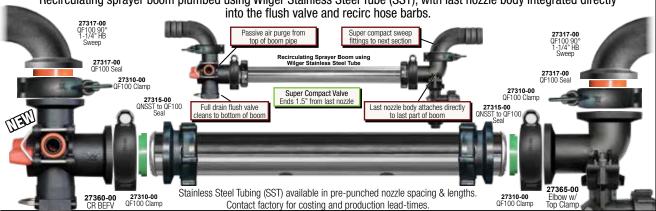
QF100 fittings for a Traditional Sprayer Boom

Conventionally plumbed Center-Fed Section using Case Thin-Walled Stainless (TWS) Boom Tube, with last nozzle body integrated directly into the flush valve



QF100 fittings for a Recirculating Sprayer Boom

Recirculating sprayer boom plumbed using Wilger Stainless Steel Tube (SST), with last nozzle body integrated directly



Quick-Flange Tube-End Adapters, Seals & Kits

QF100 Tube-End & Pipe-End Adapters, Seals & Kits

Gasket seals mate different tube & QF100 fittings together. Ensure correct seals are identified for each connection.

3pc End Adapter



Wilger SST





2 halves secure over pipe, affixed with binding nut

Max Pressure

100psi/7bar

Seals Used

Wilger SST uses flared taper gasket



27315-00 Case TWS or skirted gasket



uses stepped

Adapters & Kits

Boom End/T	Adapter/Kit	
Wilger SST rolled end OR Case TWS flared end		[3pc] 27312-00 [2pc] 27313-00
Cut pipe end	27381-00	
Through pipe e	27382-00	
NPT-F	1/2" NPT-F	27357-00
Threaded Pipe 3/4" NPT-F		27358-00
Adapters 1" NPT-F		27359-00

Tube to Flange End Seals

SST Tube x Flange 27315-00 TWS Tube x Flange 27316-00

Tube to Flange Seals

TWS Tube x Flange

Gasket seal against a SST Tube

formed tube end profile x Flange

27316-02

27315-00

QF100 Gasket Seals

Seal Type	Part#
SST Tube x Flange	27315-00
TWS Tube x Flange	27316-00
TWS Tube x Flange, skirted	27316-02
Flange x Flange	27317-00
Wilger SST to SST	27318-00
Case TWS to TWS	27319-00

TWS Tube x Flange

MATERIAL: FKM

27316-02

Skirted

Gasket

2pc End Adapter

27313-00 for

non-mobile applications. requiring low pressure







27316-00 [std] 27316-02 [skirt]

Flange to Flange Fitting Seal

Gasket seals against common 1" flange fitting ends

Flange Seal	Part#
Flange x Flange	27317-00
	•



x Flange 27317-00

27316-00

Standard

Gasket



Cut Pipe End Adapter Kit

27381-00 For any 1.315" OD pipe/tube





Kit seals holes and pipe, converting to flange end

Seals Used

Uses QF100 Standard Gasket 27317-00



Tube End to Tube End Seals

Gasket seals between two butt ends of tube

Tube to Tube Seals	Part#
Wilger SST to SST	27318-00
Case TWS to TWS	27319-00

TWS End x TWS End SST End x SST End 27318-00

D Ε 27319-00



27382-00 For any 1.315" OD pipe/tube



Most Secure Use with



Quick-Flange Clamps

Compact & robust clamps for easy installation & adjustment with hinging bolt. Compatible with common 1" flange fittings.

	all the said	2/310-
Nut & Bolt	27311-00	27310-
Butterfly Nut & Bolt	27310-00	Flange Cla
Poly Clamp	Part#	Dutterily

Butterfly Nut lamp -00

Nut & Bolt Flange Clamp 27311-00



Polypropylene Clamp & Stainless Hardware

QF100 Cap

27353-00





Threaded Pipe Adapter

For male national pipe threaded (NPT) pipes

Available in 1/2", 3/4" & 1" NPT-F sizes









Uses QF100 Standard Gasket 27317-00

Threaded

QF100 Adapters & Caps

QF100 Plugs, and other adapters for auxiliary connections to QF100 fittings

Size/Style	Description	Part#
Plug Cap	QF100 Plug Cap	27353-00
Female	QF100 x 1/2" NPT-F	27357-00
Thread	QF100 x 3/4" NPT-F	27358-00
Adapter	QF100 x 1" NPT-F	27359-00
Male Thread	QF100 x QN100-M Thread	27351-00
Adapter	QF100 x TWS-M Thread	27352-00



27357-00





27351-00







Quick-Flange Fittings & Parts

QF100 Elbows & Hose Barb Fittings

Compact & high flow sweep fittings for less pressure loss & higher flow capability for a better performing sprayer boom.

Size/Style	Description	Part#
Flange	Elbow, 90°, Compact	27324-00
x Flange	Elbow, 45°, Compact	27326-00
1"	QF100 x 1" HB, Straight	27331-00
Hose Barb	QF100 x 1" HB, 45° Sweep	27332-00
x QF100	QF100 x 1" HB, 90° Sweep	27333-00
1-1/4"	QF100 x 1-1/4" HB, Straight	27341-00
Hose Barb	QF100 x 1-1/4" HB, 45° Sweep	27342-00
x QF100	QF100 x 1-1/4" HB, 90° Sweep	27343-00



27341-00 1-1/4" HB, Straight



27342-00



Fittings



QF100 Tee & Sweep Tee Fittings

Sweep Tees

Compact & high flow sweep fittings for less pressure loss & higher flow capability for a better performing sprayer boom.

Sweep Tee Fittings	Part#
QF100 x QF100 x QF100	27371-00
QF100 x QF100 x 1-1/4" HB	27372-00
QF100 x QF100 x 1" HB	27373-00

Regular Tees

Compact tees for flat bottom drainage.

Sweep Tee Fittings	Part#
QF100 x QF100 x QF100	27321-00
QF100 x QF100 x 1-1/4" HB	27322-00
QF100 x QF100 x 1" HB	27323-00





TETT

COMBO-RATE Boom End Flush Valve (CR BEFV)

The Better Boom End Nozzle Body & Valve

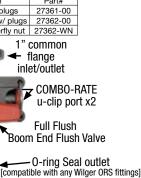
1" common

flange inlet/outlet

Full Flush

A boom end flush valve with two Combo-Rate ports for attaching a fence-row nozzle body, turret, or any COMBO-RATE fittings.

Valve version	Part#
Recirc Model w/ plugs	27361-00
Non-Recirc model w/ plugs	27362-00
Non-recirc w/ butterfly nut	27362-WN





Designed for Recirculating Booms Designed to incorporate an inline flange fitting for easy recirc configuration.





Passive Air Purge Nozzle pulls air directly from the top of boom pipe reducing nozzle run-on

Super Compact Boom Ends

The last nozzle body, flush valve and flange outlet combined in one piece





Remove Dead Spots in the boom Boom ends directly with last nozzle body and flush valve to ensure boom hygiene

QF100 Flange Elbow with Nozzle Body Upper Clamp

A compact flanged elbow with built-in nozzle body clamp

Namela Badu Inlat Cina	Module Orientation	
Nozzle Body Inlet Size	Outward Facing	Inward Facing
3/8" Inlet	27365-00	27366-00
21/32" High Flow Inlet	27367-00	27368-00



27368-00 Simply add a 21/32" high-flow nozzle body and stack any COMBO-RATE turret or fence-row nozzle body

27365-00 Outward Facing Top-clamp mount for COMBO-RATE or COMBO-JET nozzle bodies with 3/8" inlet



Outward Facing module

Designed for Recirculating Booms Designed to incorporate an inline flange fitting for easy recirc configuration.



Super Compact Boom Ends The last nozzle body, flush valve and

flange outlet combined in one piece



1" Quick-Nut (QN100) Boom Fittings & Stainless Steel Tube

The QuickNut Fifting & SST Advantage

Lighter Booms - Wilger SST

weighs 66% of aluminum weighs 23% of sch40 pipe Lighter than hose

Lower Cost

compared to other pipe plumbed sprayer booms

Recirculating Booms

Compatible boom fittings & tubing for building recirculating booms

Less Chemical Residue

compared to hose-plumbed sprayers

High Flow Boom Pipe

Maintains 1" pipe outside diameter, but inside diameter flows like 1-1/4'



QN100 Fittings for a Conventional Sprayer Boom

Contact Wilger for Custom Boom Tube & Hole Configurations for your sprayer boom.

[CANADA] Wilger Industries Ltd. 1 (833) 242-4121 info@wilger.net

[USA] Wilger Inc. 1 (877) 968-7695 WilgerESC@WilgerESC.com

25160-02

25161-01

25160-03

25171-00

Quick-Nut (QN100) Joint to Hose Barb

Example of a few possible configurations of 1" Quick-Nut (QN100) Sprayer Fittings

Stainless Tube (SST) to Boom End Flush Valve (BEFV)

25175-LV0 25160-02 25171-00

Sweep Tee to Stainless Tube (SST) 41591-00



25172-00 Sweep Tee QN100 Flared End

Sweep Tee to Hose Barb

25160-02

25160-03

25160-01











For QN100 Connections







Straight Barb

QN100 Connectors & Components

Easy to use boom end fittings and connectors to adapt 1" Wilger Stainless Steel Tubing (SST) to ON100 fittings

i wiigei Stairile	ess steel lubilly (ss1) to with	oo mungs.	
Component	Description	Part#	<i> </i>
SS Tube End	Female Thread End, 2pc	25170-00	
Adapters	Male Thread End, split ring	25171-00	
Quick Nut	Nut with QN100-F Thread	25160-03	25160-02
Plug	QN100 x Plug Cap	25163-01	23100-02
O-ring for QN100	#219 O-ring, FKM	25160-02	and the same
Connections	#219 O-ring, viton	25160-v2	
Threaded	QN100 x 3/4" NPT-F Thread	25164-01	
Adapters	1" NPT-F x QN100M Bushing	25137-00	COME OF
Boom Tube	Half Clamp, for 1" SST (1.31" OD)	41591-00	
Clamps	Half Clamp, for 1-1/4" Tube	41590-00	05400 00
	BEFV Cover Cap	25175-10	25160-03
Replacement	BEFV Seal Repair Kit (2 valves)	25175-11	
Parts	BEFV Handle, Long	25175-13	All the same of th
	BEEV Handle Short	25175-03	



25170-00 [2-piece female thread adapter] #25170-01 [Female Thread] #25170-02 [Lock Sleeve]



25171-00 Split-ring



25175-13

Long Handle

2x 41591-00







QN100 Tee Fittings

Compact & lightweight sweep tees for any sprayer boom configuration

and alexander reasons account	9
Description	Part#
QN100 Flare x QN100M x QN100M	25172-00
1" Hose x QN100M x QN100M	25168-00
1-1/4" Hose x QN100M x QN100M	25169-00



QN100 Hose Barb Fittings

Compact & lightweight hose barb fittings for any sprayer boom configuration.

Size/Style	Description	Part#
1" HB	QN100 x 1" HB, Straight	25166-01
x QN100	QN100 x 1" HB, 90° Sweep	25167-01
1-1/4"	QN100 x 1-1/4" HB, Straight	25160-01
Hose Barb	QN100 x 1-1/4" HB, 45° Sweep	25162-01
x QN100	QN100 x 1-1/4" HB, 90° Sweep	25161-01



QN100 & 1" NPT Boom End Flush Valves

Compact valve for full-drain flushing of booms

compact raise for sail arans maching or securior		
Type	Description	Part#
QN100	QN100 BEFV, Short Handle	25175-V0
	QN100 BEFV, Long Handle	25175-LV0
1" NPT-F	1" NPT BEFV, Short Handle	25176-V0
	1" NPT BEFV, Long Handle	25176-LV0





25175-03

1/2" Quick-Nut (QN50) Boom Fittings & Stainless Steel Tube

QN50 Fittings for a Conventional Sprayer Boom

Contact Wilger for Custom Boom Tube & Hole Configurations for your sprayer boom.

[CANADA] Wilger Industries Ltd. 1 (833) 242-4121 info@wilger.net

[USA] Wilger Inc. 1 (877) 968-7695 WilgerESC@WilgerESC.com

Example of a few possible configurations of 1/2" Quick-Nut (QN50) Sprayer Fittings

For QN50 Connections

25120-02

Stainless Tube (SST) to Plug Cap

25120-02

25131-00

25120-03

25130-00

Sweep Tee to Stainless Tube (SST)

41580-00 25129-00 25120-02 25120-03 Sweep Tee to Hose Barb 25120-03 25121-01

Sweep 90°

25123-01

25120-02

25120-02

Quick-Nut (QN50) thread

to Hose Barb

QN50 Connectors & Components

25130-00

Easy to use boom end fittings and connectors to adapt 1/2" Wilger Stainless Steel Tubing (SST) to QN50 fittings.

The tringer stammed steel rabing (ser) to dive intinge		
Component	Description	Part#
SS Tube End	Female Thread End, 2pc	25129-00
Adapters	Male Thread End, split ring	25130-00
Quick Nut	Nut with QN50-F thread	25120-03
Plug	QN50 x Plug Cap	25131-01
O-ring for QN50	#116 O-ring, FKM	25120-02
Connections	#116 O-ring, viton	25120-V2
Thread Adapters	QN100 x 1/4" NPT-F Thread	25127-01
Boom Clamp	Half Clamp, 1/2" SST (0.84" OD)	41580-00

Two Half-Clamp





QN50 Tee & Hose Barb Fittings

25128-00 Sweep Tee

Compact & lightweight tee & hose barb fittings for any sprayer boom configuration.

Size/Style	Description	Part#
TEE	QN50M x QN50M x QN50M	25128-00
1/2" Hose	QN50 x 1/2" HB, Straight	25120-01
Barb	QN50 x 1/2" HB, 45° Sweep	25124-01
x QN50	QN50 x 1/2" HB, 90° Sweep	25122-01
3/4" Hose	QN50 x 3/4" HB, Straight	25121-01
Barb	QN50 x 3/4" HB, 45° Sweep	25125-01
x QN50	QN50 x 3/4" HB, 90° Sweep	25123-01





Case® Thin Wall Stainless (TWS) Tube Fittings

41400-03

25160-04

41403-00

Easy to use boom end fittings and connectors to adapt to 1" Case Thin walled stainless steel sprayer booms.

Component	Description	Part#
TWS Male Tube	Male End Adapter, Left Thread	41400-04
End Adapter (3pc)	Male End Adapter, Right Thread	41400-05
	Male End Adapter, Binding Nut	41400-02
Coupler	TWS-F to QN100-F Coupler	41400-01
Quick Nut	TWS Nut, use with QN100 HB	41400-03
O-ring for TWS	#209 square O-ring, FKM	25160-04
Connections	#209 square O-ring, viton	25160-v4
Threaded Adapters	1" NPT-F x TWS-M Bushing	41403-00
	1" NPT-F x TWS-M Bushing kit	41403-v0
Adapters	w/ o-ring	41400-V0
Boom Clamp	Half Clamp, for 1" TWS (1.31" OD)	41591-00
	Flush Valve, Short Handle	41402-V0
Boom End Flush	Flush Valve, Long Handle	41402-LV0
Valves (BEFV) &	BEFV Seal Repair Kit (2 valves)	25175-11
Replacement Parts	BEFV Cover Cap	25175-10
nepiacement Fants	BEFV Handle, Long	25175-13
	BEFV Handle, Short	25175-03

25175-13 Long Handle 25175-03



25175-10 piece Adapter TWS Male Thread #41400-04 [l eft] #41400-05 [Right] #41400-02 [Binding Nut]

TWS Flush Valves

Compact & Robust Full Drain Flush Valve



Adapting a TWS Flush Valve to 1" NPT-M End

A bushing kit can adapt to any 1" NPT-M pipe end 41403-v0

41402-V0



Hose Barb Fittings for TWS

TWS Connectors are compatible with QN100 Hose Barb Fittings & Accessories

artico ficco Barb i italigo a ficoccoi		
Size/Style	Description	Part#
Plug	QN100 x Plug Cap	25163-01
Adapters	QN100 x 3/4" NPT-F Thread	25164-01
1" HB	QN100 x 1" HB, Straight	25166-01
x QN100	QN100 x 1" HB, 90° Sweep	25167-01
1-1/4"	QN100 x 1-1/4" HB, Straight	25160-01
Hose Barb	QN100 x 1-1/4" HB, 45° Sweep	25162-01
x QN100	QN100 x 1-1/4" HB, 90° Sweep	25161-01
	Size/Style Plug Adapters 1" HB x QN100 1-1/4"	Size/Style Description Plug QN100 x Plug Cap Adapters QN100 x 3/4" NPT-F Thread 1" HB QN100 x 1" HB, Straight x QN100 QN100 x 1" HB, 90° Sweep 1-1/4" QN100 x 1-1/4" HB, 55' Sweep QN100 x 1-1/4" HB, 45° Sweep



41400-00 25160-01 25160-04



TWS to QN100 Coupler



QN100 Female 41401-01

Couples TWS-M and QN100M ends

Wilger Catalog - Updated December 2022

Compact Handle

O-ring Seal (ORS) Fittings & Components



Full Line of Metering Orifices Precision metering orifices for rates as low as 1.8 us gal/acre

> 1/8" to 3/8" Push-In Tube Quick Connect

Outlets

Standard FKM 0-ring Seals

FKM o-rings are used to maximize chemical resistance & durability.

Compatible with Flow Indicators

Wilger ORS fittings are used for both Flow Indicator & EFM systems

ORS to ORS Check Valves

Diaphragm check valves with an ORS-F outlet for in-line outlet control to minimize dripping



Dia. Check Valve

[10_{PSi}] Manual On/Off 20551-00

[4Psi] Manual On/Off 20551-P4 Air-Off Operated



inline strainer



20555-00

20556-00

20556-P4



10 PSI

Manual ON/OFF Check Valve,

Straight



10 PSI Diaphragm Check Valve, 90°

20550-00

ORS to COMBO-JET Check Valves

Diaphragm check valves with a Combo-Jet outlet for spray tip or cap metering or spraying.



& Adapters



Check Valve Style	90° Outlet	
Dia. Check Valve	20560-00	ı
[10 _{PSI}] Manual On/Off	20561-00	ľ
[4PSI] Manual On/Off	20561-P4	
Air-Off Operated	20562-00	
PWM/no-check	20563-00	
		4



ORS Hose Barb Inlets/Outlets

20550-00

20552-00 For PWM/no-check 20553-00 20558-00 "4PSI check valves available: change '-00' to '-P4'. For ultra-low flow (<0.1

O-ring seal hose barb inlets and outlets. Compatible with all ORS metering orifices.

Harris Davidas	0-14-41	D + #
Hose Barbs	Orientation	Part#
1/4"	Straight	20500-00
3/8"	Straight	20501-00
3/6	90°	20511-00
1/2"	Straight	20502-00
1/2	90°	20512-00
5/8"	90°	20514-00
3/4"	Straight	20503-00
3/4	90°	20513-00
1"	Straight	20504-00
'	90°	20515-00



ORS Outlet Adapters & Plugs

O-ring seal outlets with female threads, plugs and more. Compatible with all ORS metering orifices for metering flow.





20010-00	20010-00	20020
Туре	Orientation	Part#
1/4" NPT-F	Straight	20519-00
1/4 INF 1-F	90°	20518-00
ORS x Sq Lug	Straight	20549-00
ORS Plug	Straight	20529-00

ORS x Square Lug adapter adapts to any square lug nozzle cap (e.g. Teejet/Hypro/ Varitarget)

ORS End Caps & Adapters

O-ring seal end caps are used on any ORS-M ports

Style &	Part#					
End C	Сар	20521-00				
	3/8"	20544-00				
Straight	1/2"	20545-00				
Hose Barb	3/4"	20547-00				
	1"	20548-00				
Duals in Tuls a	1/4"	20540-00				
Push-in Tube	5/16"	20541-00				
(seals on O.D.)	3/8"	20542-00				
	1/4"	20535-00				
NPT-F Thread	3/8"	20536-00				
	1/2"	20537-00				
NPT-M Thread	1/4"	20530-00				



ORS Push-in-Tube Outlets

O-ring seal quick-connect outlets that seal around the outside diameter of a tube. Compatible with ORS orifices

20517-00



20	516-VU (order	-vu for viton)	
Tube O.D.	Orientation	Part#	
	Straight	20506-00	
1/4"	Double	20509-00	
	90°	20516-00	
5/16"	Straight	20508-00	
	90°	20528-00	
3/8"	Straight	20507-00	

90°



Push-in-tube Splitter

20509-00 1/4" Straigh



O-ring Seal (ORS) Parts & Manifolds

PRO TIP: Lubricate ORS fittings before assembly

When assembling any flow indicator or 0-ring seal (ORS) parts, using a touch of lubricant (e.g. liquid silicone) on the O-ring makes assembly easy.

ORS Inline Strainer

Inline strainer with removable 50-mesh cartridge can be reversed for universal flow direction.

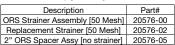




Replacement Strainer

20576-02

20576-00 Strainer Assembly [50 Mesh]





ORS Tees & Other Fittings

A variety of fittings for splitting manifolds, ORS-F outlets or other auxiliary functions.







20523-00 [Port is blocked]

Description	Part#
90° ORS Elbow [M x F]	20520-00
ORS Tee w/ 1/4" NPT-F [M x M x F w/ 1/4" NPT-F]	20526-00
3/8" x Blind ORS Tee [Blind F x M x 3/8" NPT-F]	20523-00
3/8" NPT-F x ORS Tee [F x M x 1/8" NPT-F]	20524-00
2-Outlet ORS-F Splitter [FxFxM]	20527-00
1" NPT-F x ORS Tee [M x M x 1" NPT]	20525-00



O-ring Seal (ORS) Manifolds

ORS manifolds can be configured and plumbed to any size, shape or configuration to suit any application equipment needs such as liquid fertilizer manifolds, estate sprayer manifolds, or any other liquid manifold plumbing









20571-00

20572-00

20573-00

20574-00

Model	O-ring	Part#
1-Outlet Manifold	FKM	20571-00
1-Outlet Marillold	Body only	20571-01
2-Outlet Manifold	FKM	20572-00
2-Outlet Marillold	Body only	20572-01
3-Outlet Manifold	FKM	20573-00
3-Outlet Marillold	Body only	20573-01
4-Outlet Manifold	FKM	20574-00
4-Outlet Manifold	Body only	20574-01



20573-01 Body only (no u-clips or o-rings)









No Threads or Sealant Required



Stronger, Compact **Fittings**

Replacement Parts for ORS & Flow Indicator Fittings

Replacement components for ORS Fittings/Kit

	Ticpiacement components for One ritting						
Product Ball Retainer		Type/Material	Part#				
		Polypro	20460-02				
	U-clip	302 SS	20460-02				
	Flow Indicator Kit	Manifold Feed	20460-11				
	w/o Indicator Body	Isolated Feed	20480-02				
	O-rings for	FKM	20460-03				
	ORS fittings	VITON	20460-15				
O-rings for		FKM	40225-04				
	metering orifices	VITON	40225-05				









20460-11*

*MANIFOLD KITS INCLUDE: Ball Retainer (#20460-02), O-ring (#20460-03) 2x U-clips (#20460-04), Green Ball (#20460-08), Red Plastic Ball 40225-04 (#20460-07), Red Glass Ball (#20460-06), 1/2" SS Ball (#20460-05

Mounting Clamps for ORS

Two hole mounting clamps with 1/4" bolt-mount for ORS manifolds and flow indicators

MEM 40550-SS

Tube Size	Type	Part#
1" Sq Tube	302 SS	40550-SS
1-1/4" Sq Tube	302 SS	40551-SS
1-1/2" Sq Tube	302 SS	40552-SS



O-ring Seal (ORS) Metering Orifices & Charts

Precise metering orifices for metering liquid fertilizers, or chemicals. The easier-to-handle orifices fit in any O-ring seal (ORS-M) fitting port, and cannot be inserted backwards. Available in precision molded color-coded sizes or custom drilled sized orifices.













metering orifice selection Available on TRY IT FREE AT WILGER App Store

Use TIP WIZARD for

TIP WIZARD

Simply input rate, speed & spacing, and get the best orifice for the job.

Metering Orifice

type, seal & ORS Orifice Part#

Color



Molded ORS Orifice | Custom Drilled Orifice | Blank Orifice/Plug VITON O-ring FKM/viton O-ring FKM/viton O-ring 21XXX-00/21XXX-V0 21000-00/2100-V0 21500-VXXX Color-coded*

EASY-TO-USE ORS orifice and ball selector calculator available @ www.WILGER.NET

Calculating required flow for metering orifice selection

To determine the flow rate (or application rate), use the following equations & density conversion chart:

W = Outlet Spacing (INCH) conv = Conversion Factor based on (per outlet) specific gravity/weight of liquid

GPM

GPA x mph x W x conv

 $G_{PA} = 5940 \times GPM \text{ (per outlet)}$ mph x W x conv

Solution Weight (lbs/ us gallon)	Specific Gravity	Conversion Factor (conv)
8.34 (Water)	1.00	1.00
10.65 (28-0-0)	1.28	1.13
11.65 (10-34-0)	1.39	1.18

													00 (10-04-0	,	,	.10
ſ	Orifice		Flo	w Rate (US gallo	ons/minเ	ute)		Orifice		Flo	w Rate	(US gallo	ons/minu	ute)	
	Part#*	10PSI	15PSI	20PSI	25PSI	30PSI	35PSI	40PSI	Part#*	10PSI	15PSI	20PSI	25PSI	30PSI	35PSI	40PSI
	21009-XX	0.005	0.006	0.007	0.008	0.009	0.010	0.010	21075-XX	0.346	0.424	0.490	0.548	0.600	0.648	0.693
	21011-XX	0.008	0.010	0.011	0.013	0.014	0.015	0.016	21078-XX	0.387	0.474	0.547	0.612	0.670	0.724	0.774
	21013-XX	0.011	0.013	0.016	0.017	0.019	0.021	0.022	21500-V03	0.398	0.488	0.563	0.630	0.690	0.745	0.797
	21015-XX	0.014	0.018	0.020	0.023	0.025	0.027	0.029	21081-XX	0.410	0.502	0.580	0.648	0.710	0.767	0.820
4	21500-V003	0.015	0.018	0.021	0.024	0.026	0.028	0.030	21083-XX	0.450	0.552	0.637	0.712	0.780	0.842	0.901
4	21018-XX	0.021	0.025	0.029	0.033	0.036	0.039	0.042	21086-XX	0.468	0.573	0.661	0.739	0.810	0.875	0.935
Ę	21500-V005	0.025	0.030	0.035	0.039	0.043	0.046	0.050	21089-XX	0.491	0.601	0.694	0.776	0.850	0.918	0.981
8	21020-XX	0.026	0.032	0.037	0.041	0.045	0.049	0.052	21500-V10	0.502	0.615	0.710	0.794	0.870	0.940	1.00
ä	21022-XX	0.031	0.037	0.043	0.048	0.053	0.057	0.061	21091-XX	0.525	0.643	0.743	0.831	0.910	0.983	1.05
	21500-V007	0.033	0.041	0.047	0.053	0.058	0.063	0.067	21093-XX	0.548	0.672	0.776	0.867	0.950	1.03	1.10
Ų.	21025-XX	0.039	0.048	0.056	0.062	0.068	0.073	0.079	21096-XX	0.589	0.721	0.833	0.931	1.02	1.10	1.18
,	21026-XX	0.043	0.053	0.061	0.068	0.075	0.081	0.087	21500-V125	0.624	0.764	0.882	0.986	1.08	1.17	1.25
	21027-XX	0.046	0.056	0.065	0.072	0.079	0.085	0.091	21102-XX	0.652	0.799	0.923	1.03	1.13	1.22	1.30
K.	21028-XX	0.049	0.060	0.069	0.078	0.085	0.092	0.098	21104-XX	0.675	0.827	0.955	1.07	1.17	1.26	1.35
	21500-V01	0.050	0.062	0.071	0.079	0.087	0.094	0.100	21107-XX	0.733	0.898	1.037	1.16	1.27	1.37	1.47
	21029-XX	0.064	0.078	0.090	0.100	0.110	0.119	0.127	21500-V15	0.751	0.919	1.061	1.19	1.30	1.40	1.50
Į.	21031-XX	0.064	0.078	0.090	0.100	0.110	0.119	0.127	21110-XX	0.774	0.948	1.094	1.22	1.34	1.45	1.55
3	21500-V015	0.075	0.092	0.106	0.119	0.130	0.140	0.150	21113-XX	0.820	1.00	1.16	1.30	1.42	1.53	1.64
Ŋ	21035-XX	0.081	0.099	0.114	0.128	0.140	0.151	0.162	21116-XX	0.860	1.05	1.22	1.36	1.49	1.61	1.72
7	21037-XX	0.087	0.106	0.122	0.137	0.150	0.162	0.173	21120-XX	0.889	1.09	1.26	1.41	1.54	1.66	1.78
	21039-XX	0.098	0.120	0.139	0.155	0.170	0.184	0.196	21125-XX	0.981	1.20	1.39	1.55	1.70	1.84	1.96
Z	21500-V02	0.104	0.127	0.147	0.164	0.180	0.194	0.208	21500-V20	0.999	1.22	1.41	1.58	1.73	1.87	2.00
	21041-XX	0.110	0.134	0.155	0.173	0.190	0.205	0.219	21128-XX	1.02	1.25	1.45	1.62	1.77	1.91	2.04
f	21043-XX	0.115	0.141	0.163	0.183	0.200	0.216	0.231	21130-XX	1.06	1.30	1.50	1.68	1.84	1.99	2.12
ê	21500-V025	0.127	0.156	0.180	0.201	0.220	0.238	0.254	21136-XX	1.19	1.46	1.68	1.88	2.06	2.23	2.38
	21046-XX	0.133	0.163	0.188	0.210	0.230	0.248	0.266	21140-XX	1.26	1.55	1.79	2.00	2.19	2.37	2.53
Ĺ	21047-XX	0.139	0.170	0.196	0.219	0.240	0.259	0.277	21144-XX	1.31	1.61	1.85	2.07	2.27	2.45	2.62
7	21049-XX 21500-V03	0.150 0.150	0.184 0.184	0.212	0.237	0.260	0.281	0.300	21147-XX 21150-XX	1.35 1.44	1.65 1.77	1.90 2.04	2.13	2.33	2.52	2.69
Ė	21051-XX	0.162	0.104	0.212	0.256	0.280	0.302	0.300	21150-XX 21152-XX	1.49	1.82	2.04	2.26	2.58	2.70	2.89
	21051-XX 21052-XX	0.162	0.196	0.229	0.265	0.290	0.302	0.323	21152-XX 21156-XX	1.55	1.90	2.11	2.46	2.69	2.79	3.11
	21052-XX 21055-XX	0.107	0.203	0.269	0.203	0.230	0.356	0.333	21161-XX	1.63	2.00	2.20	2.58	2.83	3.06	3.27
	21500-V04	0.191	0.233	0.286	0.320	0.350	0.378	0.404	21166-XX	1.71	2.10	2.42	2.71	2.03	3.21	3.43
	21060-XX	0.225	0.276	0.318	0.356	0.390	0.421	0.450	21172-XX	1.88	2.31	2.66	2.98	3.26	3.52	3.76
ě	21061-XX	0.231	0.283	0.327	0.365	0.400	0.432	0.462	21177-XX	2.00	2.45	2.83	3.16	3.46	3.74	4.00
	21063-XX	0.248	0.304	0.351	0.393	0.430	0.464	0.497	21182-XX	2.08	2.55	2.95	3.30	3.61	3.90	4.17
	21500-V05	0.254	0.311	0.359	0.402	0.440	0.475	0.508	21187-XX	2.21	2.70	3.12	3.49	3.82	4.13	4.41
	21064-XX	0.254	0.311	0.359	0.402	0.440	0.475	0.508	21196-XX	2.45	3.00	3.46	3.87	4.24	4.58	4.90
Ş	21065-XX	0.260	0.318	0.367	0.411	0.450	0.486	0.520	21205-XX	2.65	3.25	3.75	4.19	4.59	4.96	5.30
a	21067-XX	0.277	0.339	0.392	0.438	0.480	0.518	0.554	21213-XX	2.85	3.49	4.03	4.51	4.94	5.34	5.70
ě,	21500-V06	0.300	0.368	0.425	0.475	0.520	0.562	0.600	21218-XX	2.98	3.65	4.21	4.71	5.16	5.57	5.96
	21070-XX	0.306	0.375	0.433	0.484	0.530	0.572	0.612	21234-XX	3.47	4.25	4.91	5.49	6.01	6.49	6.94
Ŷ.	21073-XX	0.329	0.403	0.465	0.520	0.570	0.616	0.658	21250-XX	4.00	4.90	5.66	6.33	6.93	7.49	8.00
														•		

Wilger Visual Ball Flow Indicators

The Flow Incleator Advantage

See Any Application Accurately



1/4" Bolt mount on each column **Fittings** Swivel 360°



Clear Sight Column



Superior Chemical Resistance



Simple. without Electronics



No Threads or Sealant Required



Manual ON/OFF Check Valves
Easy to turn off for maintenance or convert equipment to mid-row banding

Larger Metering Orifices Easier handling & cleaning

> Consistent Metering & Easy Cleaning

Ball Suspended Higher

Desired Flow

Ball Suspended Lower

Indicates blockage or plug

Simple Operation. Critical Feedback.

Example of flow indicator function; Overlay colors are for visual purposes only

Flow Indicators are used on Planting Equipment & Sprayers to indicate relative flow blockage or overage.

Manifold Feed - Ball Flow Indicators

For monitoring many lines from a single feed (e.g. Liquid fertilizer kits for a planter)







Ball Retainer	(3)
Sight Column	
Red Glass Ball	•
" Bolt-Mount Hole	
ackable S-F port or inlet	

Model	Kit lype*	Part#
Ultra Low Flow	Bulk Kit	20475-BULK
	Bagged Kit	20475-00
[0.01-0.24 us gpm]	Body Only	20475-01
Low Flow	Bulk Kit	20470-BULK
	Bagged Kit	20470-00
[0.05-0.65 us gpm]	Body Only	20470-01
Standard Flow	Bulk Kit	20460-BULK
[0.07-2.70 us gpm]	Bagged Kit	20460-00
[0.07-2.70 us gpm]	Body Only	20460-01

*Manifold Kits include: Indicator Body, Ball Retainer (#20460-02), O-ring (#20460-03), 2x U-clips (#20460-04), Green Ball (#20460-08). Red Plastic Ball (#20460-07), Red Glass Ball (#20460-06), 1/2" SS Ball (#20460-05)

Flow Indicator & ORS Specifications*

Max Operating Pressure: 100psi / 7BAR Max Metered Flow Rate: Up to 8.0 us apm Max Operating Pressure: 185°F / 85°C O-ring Seals: FKM (standard) / Viton U-clip/Metal Fittings: Stainless Steel (302) ORS Fittings: Glass-reinforced Polypropyler Flow Columns: TPX™ (Polymethylpentene)

Isolated Feed - Ball Flow Indicators

For monitoring single lines from individual feeds (e.g. Squeeze pump monitoring, chemical injector pumps)



Model	Kit Type**	Part#
Low Flow [0.05-0.65 us gpm]	Bulk Kit	20490-BULK
	Bagged Kit	20490-00
	Body Only	20490-01
Standard Flow [0.07-2.70 us gpm]	Bulk Kit	20480-BULK
	Bagged Kit	20480-00
	Body Only	20480-01

**Isolated Kits include: Flow Indicator Body, Ball Retainer (#20460-02), U-clip (#20460-04), Green Ball (#20460-08), Red Plastic Ball (#20460-07), Red Glass Ball (#20460-06), 1/2" Stainless Ball

Inlet feed uses Combo-Jet cap. Refer to COMBO-JET caps & adapters.

How to Tell Columns Apart? Check the top of the column





🚺 Required Storage for Flow Indicator Columns

Wilger Flow Indicator columns are made of a specialty UV-stabilized compound (TPX™) that maximizes chemical resistance, providing compatibility for a huge range of chemical applications As with any plastic, UV exposure degrades the flow indicator columns.

To maximize flow indicator column clarity & longevity, completely cover

the flow indicator columns from UV exposure (sun/etc.) when not in use.



PRO TIP: Using two balls simultaneously helps

If a lighter ball is suspended too high, using the next heavier ball below can help cover changes in application rates or speeds.

Red Celcon Ball Lower Rate/Speed 🗸 Red Glass Ball Higher Rate/Speed

Wilger Visual Ball Flow Indicators - Balls & Setup Guide

Flow Indicator Balls & Selection Chart

Weighted balls are used inside flow indicator columns and within the operational flow range, will suspend within the column, showing relative flow rate to other flow columns.

Ball Description & Color	Part #	Flow Indicator Columns & Flow Ranges*		ow Ranges*
	Part #	Ultra Low Flow	Low Flow	Standard Flow
Orange Polypropylene Ball*	20460-13	0.01-0.04 us gpm	0.05-0.12 us gpm	0.07-0.25 us gpm
Green Polypropylene Ball*	20460-08	0.01-0.04 us gpm	0.05-0.12 us gpm	0.07-0.25 us gpm
Red Celcon Ball*	20460-07	0.02-0.06 us gpm	0.06-0.16 us gpm	0.10-0.35 us gpm
White Celcon Ball*	20460-18	0.02-0.06 us gpm	0.06-0.16 us gpm	0.10-0.35 us gpm
Pink Celcon Ball*	20460-14	0.02-0.06 us gpm	0.06-0.16 us gpm	0.10-0.35 us gpm
Red Glass Ball	20460-06	0.06-0.13 us gpm	0.12-0.26 us gpm	0.21-0.72 us gpm
1/2" Stainless Steel (302) Ball	20460-05	0.13-0.24 us gpm	0.18-0.65 us gpm	0.40-1.70 us gpm
7/16" Stainless Steel (302) Ball	20460-10	n/a	n/a	1.00-2.70 us gpm

Applying Dark Fertilizers & Variable Rate Applications

With some liquid fertilizers and products being darker (e.g humic acid content), consider a few tips that may help visual representation of flow

For Red Liquids

(e.g. Paralign Fertilizer)
White backboard for improved visibility.
White celcon ball for red



For Dark Liquids

(e.g. Humic Acid) Pink celcon ball for black & dark liquids.



For Variable Rate

Considering using two balls to better illustrate changes in flow rate. Select a lighter ball for the lower rate, and heavier for the higher rate



*Density/Viscosity of liquid used can effect operating range. In very dense liquids, balls may float.

Ball Selection Example

Liquid Weight: 10.67 lbs/ US Gallon

Speed: 5 mph **Outlet Spacing:** 30 inch



Ultra-Low Flow

Rate: 4.5 US Gal/Acre Flow Rate: 0.129 us gpm Ball: Red Glass



Low Flow

Rate: 10 US Gal/Acre Flow Rate: 0.286 us gpm Ball: 1/2" Stainless



Standard Flow

Rate: 20 US Gal/Acre Flow Rate: 0.571 us gpm Ball: Red Glass

Guide to Building a Liquid Kit with Flow Indicator Manifolds

STEP 1 Select: Manifold-Feed or **Isolated-Feed** Style Flow Columns

Choose the style of flow column that suits the application equipment being monitored

STEP 2 Determine Flow Indicator Column Size (e.g. Ultra Low Flow, Low Flow, Standard Flow)

Depending on the flow rates required, select the flow column that would provide the best fit to the required flow rate or range. Usually this is accomplished by finding a column size that has your flow rate towards the middle of the range or higher.

STEP 3 Select: Flow Indicator Balls to use

Consult the ball flow chart to determine which balls should be used. It can be optional to use two balls to illustrate a flow rate range.

STEP 4 ORS Check Valves [Optional]

A variety of check valves are available. Typically an ORS to ORS check valve would be used unless adapting a manifold to combo-jet caps. One check valve is required per flow indicator.

STEP ORS Inlet Feeds, Tees, & Strainers

Determine how many manifolds are required, whether the manifolds are fed with a Tee fitting, as well as whether an inline strainer will be added to each manifold. Determine the size & type of inlet fitting. One set of inlet/tee/strainer is required per manifold.

STEP 3 ORS Metering Orifices [Optional]

Any metering manifold should have a means to meter the flow for each row to keep rows consistent. Without a metering orifice, the flow rates between rows can vary greatly. One metering orifice would be required per flow indicator column.

STEP 7 ORS Outlet

Select the size, and style of outlet to be used for each row of product. Consider applying a small bit of lubricant (e.g. liquid silicone) on the o-ring to air in easy installation of outlets and other ORS fittings. The outlet would hold the ORS metering orifice, if used.

STEP © ORS End Caps & Adapters

A variety of end caps are available as adapters which can be used for many situations, but typical an ORS end cap would be used. Two end caps are required per manifold if a Tee fitting is used.

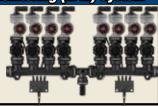
Do you plant at night or in low visibility? Take a look at Wilger's Electronic Flow Monitoring (EFM) System

Wilger's row-by-row flowmeter uses the same ORS parts and manifolds, and can be simply added inline for existing manifolds.

Simply add a flowmeter for each row and connect the electronic harness to see actual flow rate on each row (up to 200 rows), for flow rates of 0.04-1.53 us gpm flow.







Wilger Electronic Flow Monitoring System

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See Any Application with Row-by-Row Accuracy

The Wilger electronic flowmeter (EFM) is a service-able flowmeter designed & built specifically for agricultural chemical & liquid applications.



Fittings Swivel 360°



Crystal Clear Flowmeter



Superior Chemical Resistance



Serviceable Flowmeter for Aq.



High Accuracy Flowmeter



Patented Flowmeter Canadian Patent No. 2987646 AUS Patent No. 2017376849 U.S. Patent No. 10.845.228

Crystal Clear Flowmeters Enables easy system troubleshooting & verification

Monitors Huge Flow Range Accurately measures flow rates of 0.04-1.53 us gpm per row

How It Works

High Resolution Hall-Effect Sensor & Ceramic Magnet combo provide accurate pulse frequency to determine flow





Trouble-free Connectors Keyed Deutsch connectors ensure weather-sealed wiring Monitor up to 3 Products

Simultaneously monitor up to 3 products within the same system

Monitor Any Sized Equip. Monitor up to 200 rows or outlets on any equipment

Custom High/Low AlarmsCustomize threshold alarms

Custom Screen Layouts
Customize screen layouts
between products, sections,
or any other way

Chemical Resistance Clear TPX material provides visual & non-stick surface

visual & non-stick surface Easy Retrofit

Easily retrofits to any existing ORS or Flow Indicator Fittings

Simple Harnessing Composed of an ECU with dairy-chained product nodes & sensors

WIFI communication ECU generates WIFI straight into the cab

Starter Sta

FREE EFM APP POWERED BY

The Electronic Flow Monitoring system (powered by Agtron) requires an Android Tablet 8.0 or later

Build your Electronic Flow Monitoring System with help from www.wilger.net



Use the new EFM system parts kit builder available at www.wilger.net. Simply input your implement size and layout and receive a parts list & quote. Simple as that.

AGTRON

Compact ECU for Demo Units & Planters up 16 Rows



Wilger is introducing a compact flow monitoring system ECU, that acts as a standard ECU with built-in 16 channel node.

For an even easier setup for in-store demonstration or as fully functional <16-row planter EFM systems.

Available now in limited quantities. **Book yours today!**

Wilger Electronic Flow Monitoring System Components

Electronic Flowmeters & Jets

A clear flowmeter that connects to any ORS outlets, with an accurate flow range of 0.04 - 1.53 us gpm, using patented flow stabilizing jets.





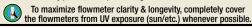


Product	Description	Part#
Electronic	Flowmeter Kit	20580-0
Flowmeter Body	Body Assembly (no jets)	20580-06
[0.04-1.53 us gpm]	Body Only	20580-01
Replacement Jets (with 50 mesh snap-in strainer)	Green (up to 0.12 us GPM)	20581-01
	Red (0.1 - 0.31 us gpm)	20581-03
	Blue (0.18 to 0.98 us GPM)	20581-05
	Black (0.6 to 1.53 us gpm)	20581-07



Required Storage for Flowmeters

Wilger Flowmeters are made of a specialty UV-stabilized compound (TPX™) that maximizes chemical resistance, providing compatibility for a huge range of chemical applications. As with any plastic, UV exposure degrades the flow indicator columns





Electronic Flowmeter Manifolds

Pre-assembled manifolds in 1-4 Outlets with a flowmeter and check valve. Simply stack manifolds, then add inlet/outlets, caps and sensor cables.

20644-00 Four Outlet EFM Manifold Kit w/ Check Valve Kit includes 20574-00, 4x 20580-00, 4x 20556-00



	Stack manifold sections to desired size. Add ORS inlet or center-fed tee	[Included]
)	Add ORS end-cap (2x if TEE is used)	20581-XX
)	Add ORS outlets & metering orifice (opt.)	EFM Jet set [1 set per EFM]
	SCHOOL SEC	Section in which the

		_
Manifold Outlets	Check Valve*	Part#
1 EFM Outlet	Straight	20641-00
	90°	20631-00
2 EFM Outlet	Straight	20642-00
	90°	20632-00
3 EFM Outlet	Straight	20643-00
3 EFIVI Outlet	90°	20633-00
4 EFM Outlet	Straight	20644-00
4 EFIVI Outlet	90°	20634-00

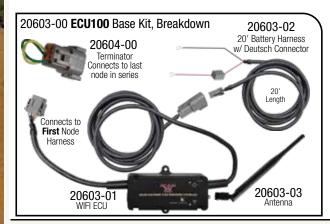


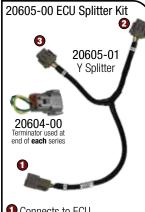
*4PSI check valves available: change '-00' to '-P4'. For ultra-low flow (<0.01 us gpm), 4PSI may be required.

Base Electronic Kits for EFM Systems

Electronic Control Units (ECU) & components used in EFM systems. ECUs are used to monitor up to 196 outlets, across up to 3 products.

Product	Kit Includes	Part#
ECU100 Base Kit	ECU100, 12v Harness, Terminator, Antenna	20603-00
ECU Splitter Kit	ECU Splitter Cable, Terminator	20605-00
DEMO ECU Kit	DEMO ECU, incl. node harness, CAN power	20603-00
ECU/Node to Node	12' Extension Harness (Node to ECU/Node)	20616-12
Extension Harness	24' Extension Harness (Node to ECU/Node)	20616-24





- Connects to ECU.
- Connects to Node 1 in first node loop.
- Connects to 2nd node series. Node # determined by last node in 1st series.

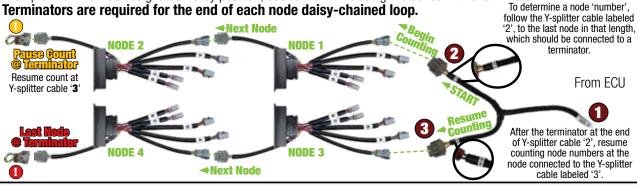


Compact ECU Power Harness Product Harness'

ECU product harness is not expandable

Using an ECU Splitter Cable - Navigating Node Numbers & Labels

Example: NODE 3 was designated #3 by position, due to NODE 2 closing the series with a terminator.



Wilger Electronic Flow Monitoring System Components

16 Channel (16CH) Product Node Kits & Components

16CH Product nodes provide communication between sensors and ECU.

Product	Description	Part#
16CH Node Kit	incl. 16CH Node, 16CH Harness, 4x Quad-sensor cables	20621-00
Quad-Sensor Cable	4-Sensor Cable (18" long) for 16CH Node	20585-00
16CH Node/Harness	incl. 16CH Product Node, 16CH Node Harness	20611-00
16CH Harness Cap	16CH Harness Cover Cap	20612-00
Sensor Cover Cap	Covers a single sensor on a quad-sensor cable	20585-01
Node to Quad-Sensor	6' Extension Cable (16CH Harness to quad-sensor cable)	20615-06
Extensions	12' Extension Cable (16CH Harness to quad-sensor cable)	20615-12

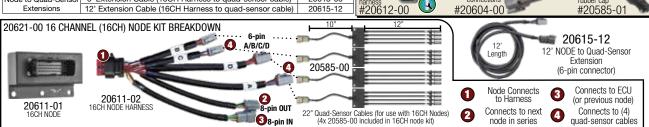


For proper function of your EFM system, each unused connection must be sealed with a node harness cover cap, sensor cap, or terminator. Unsealed Connections have increased chance of shorts, electrical shock, or damage to the system or equipment.









4 Channel (4CH) Product Node Kits & Components

4 Channel Product Nodes & kits provide communication between sensors and ECU. Sensor cables cannot be interchanged between 16CH and 4CH node harnesses. 4CH nodes and sensors are available in limited stock, as Wilger is transitioning to using the 16CH node and components as standard.

Product	Description	Part#
4CH Node Kit	incl. 4CH Node, 4CH Harness, 4x 6" single-sensor cables	20620-00
4CH Node/Harness	incl. 4CH Product Node, 4CH Node Harness	20608-00
4CH Harness Cap	4CH Harness Cover Cap	20609-00
Single-Sensor	6" single-sensor Cable for 4CH Node harness	20584-00
Cables (lim. qty)	10' single-sensor Cable for 4CH Node harness	20584-10

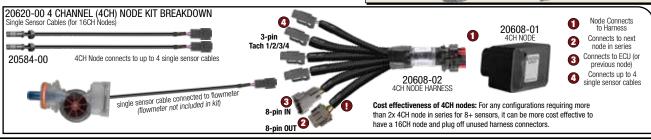
Capping Unused Connections

For proper function of your EFM system, each unused connection must be sealed with a 4CH node harness/sensor cover cap, or terminator.

Unused Sensor Connections Cap unused 4CH node #20609-00



Can all 'last node in #20604-00



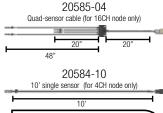
ECU Splitters, Extended Harnesses & Cables

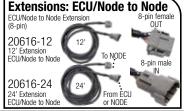
A variety of harnesses available for alternate EFM system configurations or replacement cables and caps

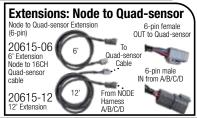
Product	Description	Part#
12v Power Extension	Extends 2-pin power connection by 35'	20603-07
Antenna Extension	Extends connection to ECU antenna, 30' length	20603-05
4' Quad-sensor Cbl	4' Long Quad-sensor cable (48"/20"/20"/48")	20585-04
10' Single Sensor Cbl	10' long single sensor cable	20584-10
Node to Node	12' Extension Cable (8-pin Harness male to 8-pin female)	20616-12
Extensions	24' Extension Cable (8-pin Harness male to 8-pin female)	20616-24
Node to Quad-Sensor	6' Extension Cable (16CH Harness to quad-sensor cable)	20615-06
Extensions	12' Extension Cable (16CH Harness to quad-sensor cable)	20615-12

30' Antenna Extension 30' co-axial antenna extension cable to bring ECU antenna closer to the tractor 20603-05 30' Extension ECU antenna has

100' range (50' one-wa











Flowmeter Component Parts

Electronic flow monitoring system parts and components are easily replaceable. For individual component parts that were not listed in the above product breakdowns, find the below.

EFM, Body Assy, TPX, ORS (no jets, body assy only) 20580-06 20580-01 EFM, Body Only, TPX

20580-02 EFM, Module c/w O-ring (no sensor)

And Contact

20580-08 EFM, Impeller Assembly (20580-08 + 20580-10)

20580-10 FFM. Impeller Magnet, Ceramic

20580-11 EFM, Impeller Axle Pin

20580-13 EFM, O-Ring, #119, VITON® (for EFM module) 20583-00 EFM Sensor Cable, Single w/o Connector

20585-01 EFM sensor rubber cover (for unused sensor cables)

20583-00*

*Non-stocked/Custom Orde

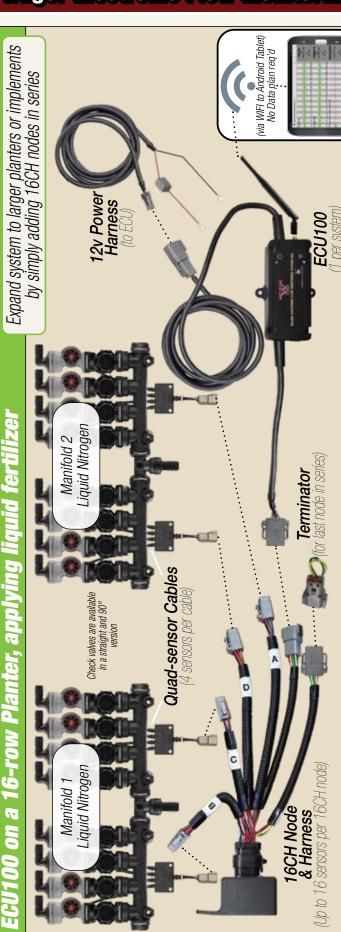








Wilger Electronic Flow Monitoring System ECU100 Example



ECU100: Component Checklist for Wilger's Electronic Flow Monitoring System

As equipment & implements greatly vary, this is a simplified approach assuming the implement is fairly standard and evenly spread, with the manifold centrally located It may be cost effective to move manifolds from the wings of the implement, to the center.

Order 1 ECU100 kit per system. (#20603-00)

outlets by 16. Round up to nearest whole number. Order that many 16CH Node kits. (#20621-00) Add the # of outlets (including multiples for monitoring multiple products). Divide the total # of

Order 1 EFM assembly kit (#20580-00) per outlet (incl. multiples for monitoring multiple products) 4CH Node kits can be effective for 'extra' outlets in systems, but 16CH node kits are typically cost effective. Alternatively, order EFM manifold kits (#20631-00 to #20634-00) to fit your requirements for sections

m

Order 1 ORS Outlet (Page 16) & 1 ORS Check Valve (#20551-00) per EFM body. Order manifolds & plumbing components (& end caps) suited for the implement size. [Optional if metering orifice req'd] **Order an ORS orifice for each outlet**, ensure proper metering orifice size for each rate. Use Tip Wizard @ www.wilger.net or via app, to ensure proper sizing.

(LF)

☐ 1x ECU100 KIT per system

1x ORS Manifold Outlet per outlet

1x ORS Outlet Fitting per outlet

1x ORS Check Valve per outlet

1x 16CH Node Kit per 16 outlets 1x Flowmeter (EFM) per outlet

1x Android Tablet [Android 8.0 0S or newer] Extension harnesses if req'd

1x End Cap per manifold [2x if center Tee]

1x Inlet Feed or Tee per manifold

1x Metering Orifice per outlet [or alt.]

For more information, start the conversation on building your EFM system with your Wilger dealer, and for more pictures/information, visit our website at: www.WILGER.NET

EFM VIDEO TUTORIALS - Setting up EFM App on Android Tablet

app on your Android Tablet. Videos on YOUTUBE, or accessible from www.WfllGER.ner Make sure to take advantage of video tutorials on initial setup and planning of EFM system





Use the new EFM system parts kit builder available at www.wilger.net. Simply input your implement size and layout and receive a parts list & quote. Simple as that.

your EFM system liquid kit on www.WILGER-NET



Build

Wilger Electronic Flow Monitoring System App

\$58 F

EFM System App Preview - Setup & Go

Download the Wilger Electronic Flow Monitoring System App.
 (GooglePlay Store, or APK download from www.wilger.net/efm.apk)

Power up ECU, connect tablet to ECU WIFI, and complete ECU setup, including specifying product-specific alarm, outlet spacing & jet selection.

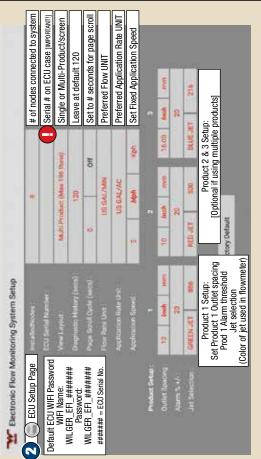
(WIFI password is ECU serial number; eg. "WILGER_EFI_1234567")

Set row/outlet locations (on screen) by pairing row # and physical location of sensor (which node/cables it is connected to). Customize page layout by preference (group balls by sections or any other layout by user preference).

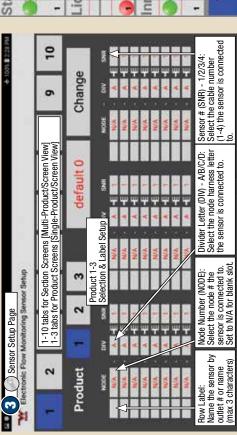
System will now monitor each individual flowmeter individually (on detailed snapshot screen and alarms), by product (with visual balls) and as a whole system.

Populate each row of info (corresponds to 1 ball, and up to 24 balls/section) for each sensor used in the system.

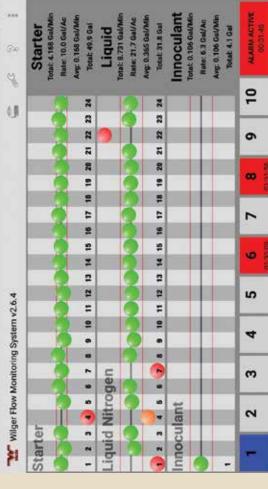
Sensor Setup Area:



4 Application Monitoring Screen



Now that basic setup is complete, explore the individual row detailed screens, application widgets, advanced calibration screen, and equipment profile saving as well









Wilger makes spray tips for applicators who care about how they spray.



Wilger makes nozzle bodies & components that address and support best practices being developed in the crop protection industry.



Wilger makes flow monitoring & metering components that are critical to maintaining effective and consistent application.

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Focused on Application
Performance for
Over 45 Years



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