WILGER

WILGER Sprayer & Liquid Fertilizer Parts Catalog

Revised July 2024

WORLD CLASS SPRAYING COMPONENTS

Spray Tips

COMBO-JET®
Drift Reduction

Tip Wizard

WILGER
TIP WIZARD

Spray Tip Selection Tool

Sprayer Parts

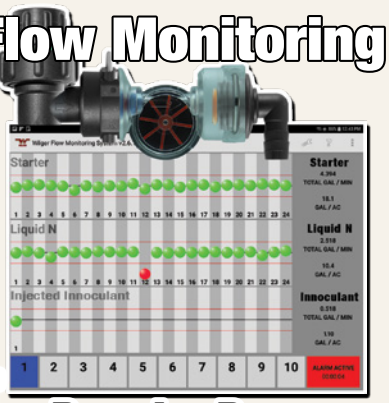
Nozzle Bodies & Plumbing Parts

Flow Indicators

Visual Detection of Plugged Lines

For More Information
VISIT
www.WILGER.NET

Flow Monitoring



Row-by-Row Flowmeter

Certified Quality Management System ISO 9001:2015 Design

WILGER PROUDLY MADE IN CANADA & USA

Units: US Gallon/Acre

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Technical Assistance - Wilger personnel are available to provide technical assistance in the choice or use of products furnished to the buyer and will do so free of charge. Wilger assumes no obligation or liability for any such advice, or any consequences occurring as a result of the application of such advice. The buyer is solely responsible for the selection of the appropriate product(s) and the appropriate application to the intended end use.

Limitation of Liabilities - Except for claims for bodily injury, Wilger's liability for any and all claims arising out of the purchase of the product shall not exceed the billed or billable value of the product. In no case will Wilger be liable for any consequential damages or loss of profit, even if Wilger has been advised of the possibility of such damages.

NEW & FEATURED PARTS [Page 1]

WILGER Dual Spray 4+1 [DS41] Nozzle Bodies

The ultra-compact 'DS41' nozzle body integrates a single by-pass nozzle body (optional for spot spray or Dual PWM) as well as a robust 4-nozzle turret.

This new generation of nozzle bodies is designed to fit compact boom frames, providing the benefit of stacked nozzle bodies in a much smaller and robust package with new product designs to improve fit and function.

'Left' Version
41900-00

'Right' Version
41901-00

Spring-Lock Turret
Positive Turret Positioning

NEW

DOUBLE STACKED

Ability to spray with one or both nozzles independent of eachother.

Chemical & Acid Resistant

Super Compact Space Saving

New Robust Design

Compact for 10" spot spraying spacing

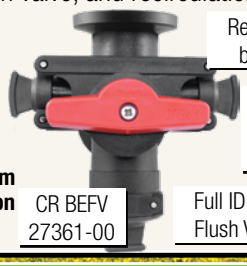
SPOT SPRAYING

COMBO-RATE® Boom End Flush Valves, QF100 Ultra Compact & Offset Elbows

A series of super compact fittings including the last spray nozzle body, full flush valve, and recirculation ports.

Super Compact Boom Ends

Cuts out Boom Contamination



Recirculating boom port

2x Stackable **COMBO-RATE** nozzle body port

CR BEFV 27361-00

Full ID ORS Flush Valve

Engineered for Recirculating Spray Systems

Ultra Compact nozzle body elbow

Compact Offset nozzle body elbow

COMBO-JET® DX SPOT SPRAY NOZZLES & 30° Nozzle Adapter

Narrow-angle drift reduction nozzles for spot spraying

PWM APPROVED

SPOT SPRAYING

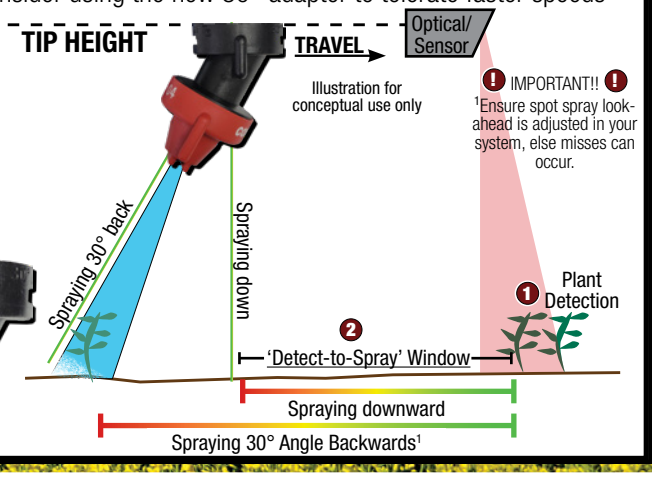
Available in
20°
40°
60°
Nozzle Angles

Available in DX sizes -015 to -125

For Optical, Spot and Broadcast spraying on 10" nozzle spacing

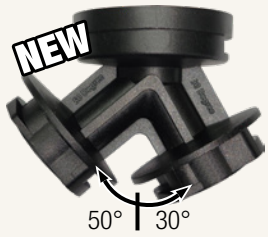
NEW **#40219-00**
30° Adapter
For back or front, single nozzle spraying at 30°

Looking to spray faster with your spot spray system?
Consider using the new 30° adapter to tolerate faster speeds



NEW & FEATURED PARTS [Page 2]

COMBO-JET® 30/50 Adapter



40442-00

COMBO-JET outlet to 30° & 50° front/back COMBO-JET outlets

-Quarter Turn-

Perfect for cereal-head fungicide & other applications benefiting from angled spray

[TOP VIEW]

Use it with the new DS41 nozzle body for angled spraying in tight sprayer boom frames

INSTA-JET insert for COMBO-JET®

40262-00

The Insta-Jet insert snaps into any COMBO-JET[1] nozzle to increase responsivity to PWM nozzle start and stop

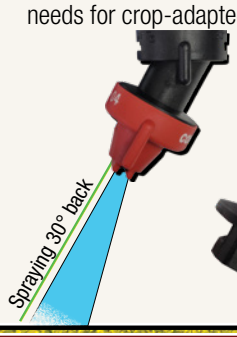
What is high-responsivity spraying?

The Insta-Jet insert speeds up and extends the duration of optimal spray pattern by reducing the effective 'start' and 'stop' time required to produce a desired spray. This is especially important for spot spraying that has intermittent nozzle flow interruptions.

[1]Not compatible w/ UR series or with use of select nozzles/adapters

30° Angled Nozzle Adapters

Nozzle adapters give the ability to angle a nozzle forward or backward, depending on needs for crop-adapted spraying. Commonly outfitted on spot spraying systems to increase potential spray speed.



Combo-Jet to Combo-Jet 30° Adapter

40219-00

Combo-Jet to Square Lug 30° Adapter

40220-00

COMBO-RATE Manifolds

Replacing a yard sprayer manifold?
Building your own yard or ATV sprayer?

41115-03
(w/o barbs & gauge)

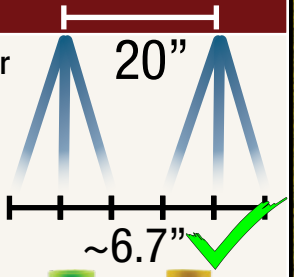
For setups needing:
- Pres. Gauge
- Left/Right Wing(s)
- Spray Gun
- Pressure regulator valve
- Easily Expandable

Combo-Rate® pre-built 3-Outlet Control Manifold

NEW 3-Hole Fertilizer Streamer (FS3) Nozzles

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

Includes metering orifice and deflector plate in a single part number for easy ordering.



Improved performance at higher pressures

Available in sizes from 0.15 us gpm - 2.0 us gpm

Use Tip Wizard for Fertilizer Streaming Nozzle Selection

FREE WILGER TIP WIZARD

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.

USE IT FREE AT WWW.WILGER.NET

Download on the App Store

GET IT ON Google Play

NEW & FEATURED PARTS [Page 3]

NEW PARTS

COMBO-RATE® Top Turrets & Double-Down

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.

41836-00
*solenoid not included

High Flow Nozzle Bodies (21/32")

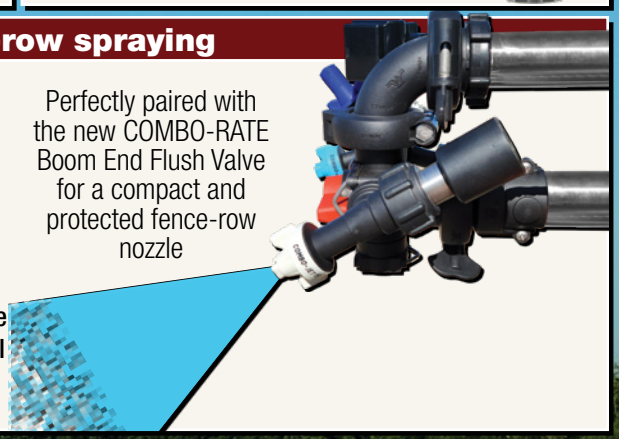
Nozzle bodies for 21/32" high flow inlet holes available in COMBO-JET, COMBO-RATE and new DS41 nozzle body styles.

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

41137-00

A new COMBO-RATE end body that provides a swivel joint that is **available to be locked in 15° increments**[1] 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

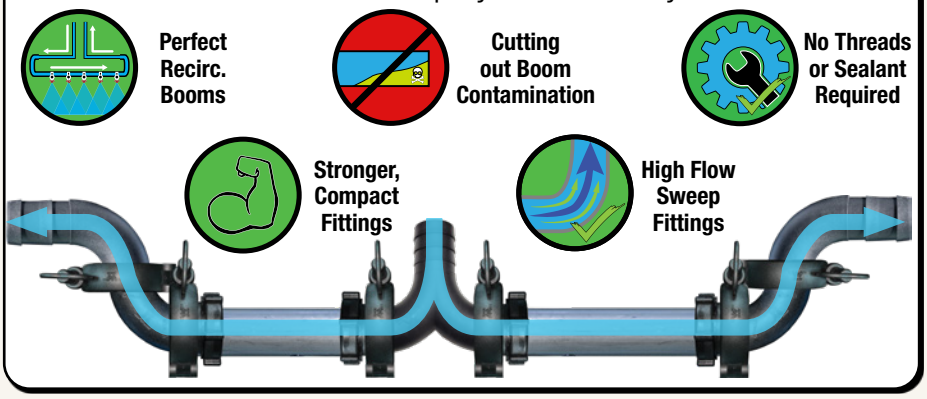


[1]Note on adjust-ability - Some sprayer manufacturers choose to have swivel end bodies permanently glued to position/angle. These swivel end bodies would NOT be adjustable, and removal of glue and re-adjustment would void warranty.

Quick Flange Sprayer Boom Fittings

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

Build a better sprayer boom today!



New O-Ring Seal Fittings, Assemblies & Kits

ORS-M Straight Check Valves
20556-00
10 PSI Manual ON/OFF Check Valve, Straight

20576-00
50 mesh strainer assembly

ORS in-line strainer attaches to any ORS fitting

20509-00
ORS-M to Double 1/4" Push-in-tube splitter

IMPROVED EFM JET DESIGN
[1]Easier removal & insertion
shipping in 2024

20644-00
4 Outlet EFM Manifold Kits w/ Manual ON/OFF Check Valves

New ORS-F Hose Barbs
20547-00
3/4" HB Straight with ORS-F u-clip

3/8" to 1" hose sizes available

20576-02
50 Mesh strainer cartridge

20549-00
ORS to Square Lug Outlet for Liquid Fertilizer Kits

NOTE: Ensure proper strain relief or mounting is added to ensure minimized stress on fitting joints in complex manifold configurations.

NEW & FEATURED PARTS [Page 4]

Wilger Electronic Flow Monitoring System ECU200 Release

A new compact ECU that includes the first 16CH node for more compact systems

ECU200 Series Kit (#20606-00) includes:

#20606-01 ECU ONLY

Back View: New position for ECU Serial Number
(❗ 9 digit serials now used)

#20606-02
Connects 'Node 1' quad-sensor harnesses A / B / C / D

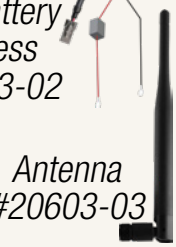
Connects the battery harness to the ECU

CAN to Power

#20606-03

4x #20585-00

12v battery harness #20603-02



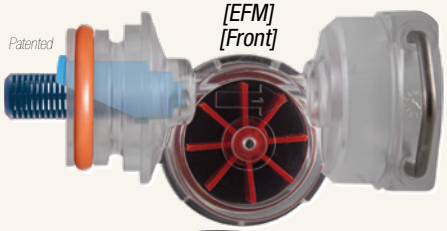
Antenna #20603-03

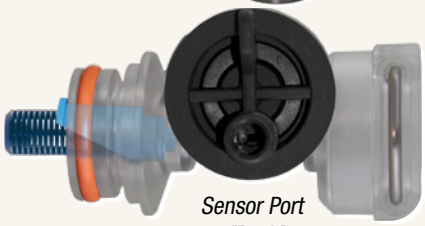
What about other EFM parts?
All parts beyond this kit are shared between ECU100 and ECU200 parts.

Wilger Electronic Row-By-Row Flow Monitoring System

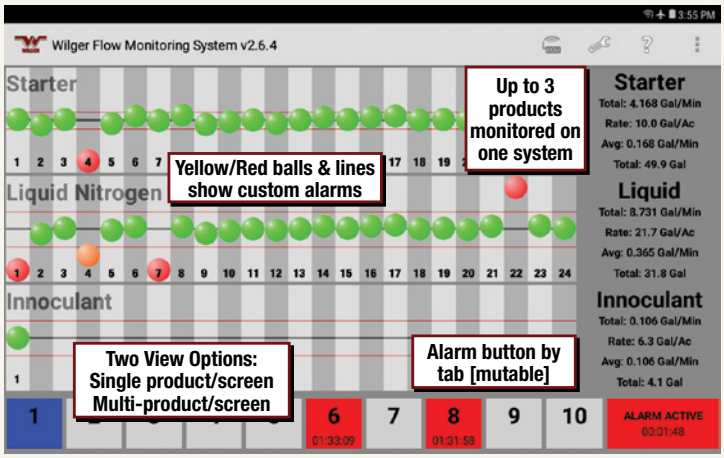
The serviceable flowmeter designed & built specifically for agricultural chemical & liquid applications

Electronic Flowmeter [EFM] [Front]





Sensor Port [Back]

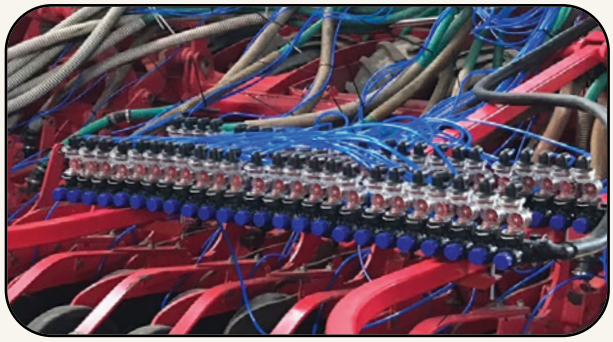


Fittings Swivel 360°

Modular Design for Any Size Equipment

Serviceable Flowmeter for Ag.

High Accuracy Flowmeter



EFM systems can be easily scaled to small or very large systems.

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

Tip Wizard Updates

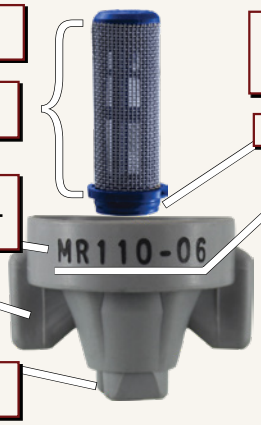
Tip Wizard has new features coming! Double-down spraying, spot spraying and more!

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



- Less plugging, as the path of flow always gets larger
- 40% longer strainer that snaps & seals into place
- SR / MR / DR / UR 50% 75% 90% 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.

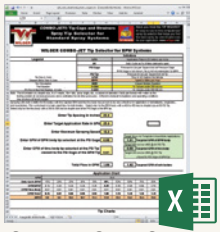
Without needing consistent air induction for drift reduction,
Combo-Jet spray tips set the standard for Pulse Width Modulation (PWM) spraying system nozzles.

*Capstan EVO®, Capstan Pinpoint®, Case AIM Command®, John Deere ExactApply®, IntelliSpray®, Raven Hawkeye®, Agrifac StrictSpray Plus™ are not affiliated or owned by Wilger. They remain property of their respective owner(s).

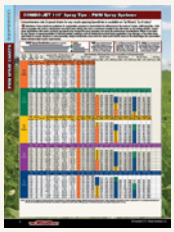
WILGER.NET has the most useful spray tip selection help in the world.

FREE WILGER TIP WIZARD
FREE SMARTPHONE APP

TIP WIZARD ONLINE


EXCEL-BASED CHARTS


PRINTED TIP CHARTS


WILGER CATALOG

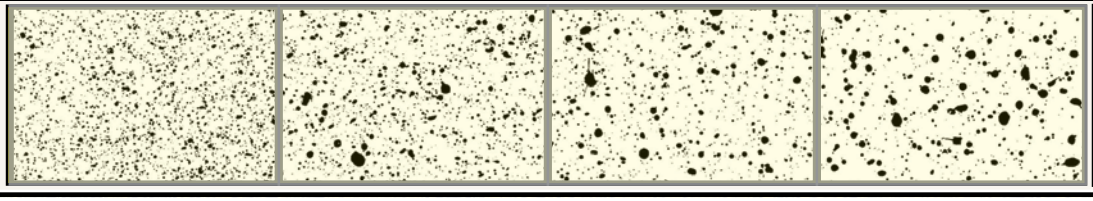
COMBO-JET® ER/SR/MR/DR/UR Spray Tips - *What is the difference?*

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

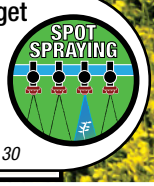
Comparison Criteria	ER Series Extended Range	SR Series Small Reduction	MR Series Mid-Range Reduction	DR Series Drift Reduction	UR Series Drift Reduction
Spray Tip Design	Conventional Flat Fan	Pre-orifice Drift Reduction	Pre-orifice Drift Reduction	Pre-orifice Drift Reduction	Dual Chamber Drift Red.
Spray Quality @40PSI	Medium	Coarse	Extremely Coarse	Extremely Coarse	Ultra-Coarse
Droplet Size[1] @40PSI	Smallest (246µ VMD[1])	Medium (371µ VMD[1])	Large (474µ VMD[1])	Very Large (529µ VMD[1])	Ultra Coarse (633µ VMD[1])
% <141µ[2] % <600µ[3]	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	UR spray tips are specialty spray tips, designed for certain chemical applications that require exceptional drift reduction.
Drift Potential	Most likely to drift	Lower drift potential	Major reduction in drift	Very low drift potential	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.
Coverage	Best	Excellent	Very good	Good	Refer to chemical application label for maximum pressures, speeds and application information.

[1]Based on an XX110-06 nozzle @ 40 psi (2.75 BAR)
[2]Droplets smaller than 141µ are more likely to drift. 141µ is used as a standard for estimating driftable fines.
[3]Droplets smaller than 600µ provide better coverage. Droplets > 600µ consume more spray volume, reducing overall coverage.

More information available at www.wilger.net



Don't Forget the ER & DX series for spot spraying



More on Page 30

Selecting the Correct Spray Quality & Droplet Size

Drift vs. Efficacy

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*
- Nozzles and Pressure: 30 to 40 psi (210 to 275 kPa) when using conventional flat fan nozzles. — *Reference max pressure for conventional nozzles like ER series. 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.
*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.

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 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.

A First-timer's look at Tip Wizard

DOWNLOAD TIP WIZARD TODAY!

It's FREE!

TIP WIZARD

Download on the App Store | GET IT ON Google Play

TRY IT FREE AT WWW.WILGER.NET

Tip Wizard shows great info like:

- **Adaptable Charts** — Adjusts to alternate units & spacing
- **Boom Pressure (PSI)**
- **Speed Range**
- **Duty Cycle** (for PWM)
- **Spray Quality** — For matching spray tips to chemical label requirements
- **[Advanced] VMD (in µ)** — Median Droplet Diameter for comparing series of the same tip size
- **% of Volume < 141µ** — For an estimate of driftable fines in ideal conditions
- **% of Volume < 600µ** — For a relative factor of small droplets in ideal conditions

Have More Questions?
Talk to your Wilger dealer, or call
CANADA 1 (833) 242-4121
USA 1 (877) 968-7695

Beginner's Guide to using Tip Wizard

1. **Choose** application units, spray system type, and search function (e.g. Search for tips)
2. **Enter** application rate, spraying speed[1], nozzle spacing, and spray tip angle[2].
   [1]Since PWM systems can modulate flow by changing the spray duration, enter the MAX typical spraying speed.
   [2]Spray 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 in ideal conditions. Using the droplet size (VMD) can allow a more advanced way to filter through series of tips. In the event a target spray quality is NOT possible, widening the spray quality to SEE ALL may be required. (e.g. targeting MEDIUM spray quality with nozzle sizes too large to produce M)

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:
- Water Volume: Minimum 22 L per acre. *(Minimum water requirement on chemical label by law)*
- Nozzles and Pressure: 30 to 40 psi (210 to 275 kPa) when using conventional flat fan nozzles. *(Reference max pressure for conventional nozzles like ER series. 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**. *(Droplet spectrum recommendation for balance of drift & coverage.)*

Spray Categories as per **ASABE S572.1** Classification
Extremely Fine | Very Fine | 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.*

4. **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

   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 %<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.

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

[1]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.

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%[1] 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.

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

   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.

3. **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 30-60 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'

Ideal Condition Spraying @ 14MPH:
@50PSI: DUTY CYCLE: 75% ✓ Excellent
@50PSI: COARSE Spray Class
@50PSI % < 141µ: ~9% ✓ Good
@50PSI % < 600µ: ~90% ✓ Excellent

Drift Sensitive Spraying @ 14MPH:
@35PSI: DUTY CYCLE: 90% ✓ OK
@35PSI: VERY COARSE Spray Class
@35PSI % < 141µ: ~6% ✓ Excellent
@35PSI % < 600µ: ~84% ✓ Very Good

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.

Combo Jet® SR110-06
Part No: 40287-06 Color: Grey
Screen No: Not Required

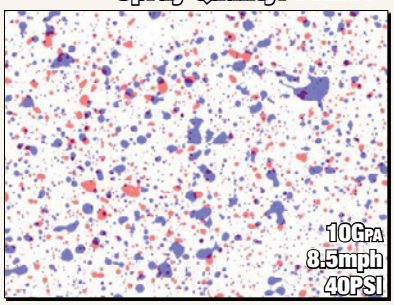
Pressure (psi)	Speed Range (mph)	DC (%) @ 14 mph	Class	VMD (µ)	<141 (%)	<600 (%)
25	3.3-13.2	>100	XC	466µ	3	76
30	3.6-14.4	97	VC	438µ	5	81
35	3.9-15.6	90	VC	414µ	6	84
40	4.2-16.6	84	C	393µ	7	87
45	4.4-17.6	80	C	375µ	8	88
50	4.7-18.6	75	C	358µ	9	90
55	4.9-19.5	72	C	344µ	10	91
60	5.1-20.4	69	C	330µ	11	92

Picking Nozzles for Double Nozzle Spraying

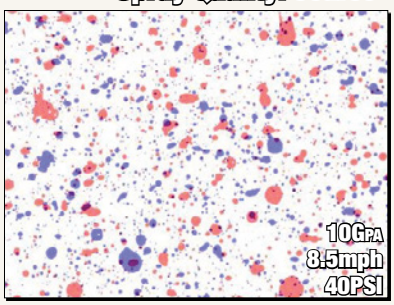
Picking two spray tips isn't much different than a single tip. Since the sprayer has some means of adjust the flow to match a flow rate, simply pick a nozzle size that would supply the full rate, and then split it into parts that would provide the same flow rate. E.g. ***If a 110-10 nozzle size is required for an application, suitable pairs would be like a '110-06 + 110-04' or '110-05 + 110-05', as the cumulative size would apply the same rate as a single 110-10. 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). ALWAYS enter the cumulative size of nozzles into the controller. Not just one of the nozzles. (e.g. if a 110-04 + 110-06 were used, a -10 size nozzle would be entered)***

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
   ***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.

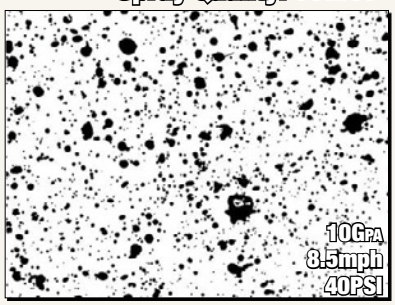
Example: MR110-04 + MR110-02
Spray Quality: Coarse*



Example: 2x SR110-03
Spray Quality: Coarse*



Single Tip Example: SR110-06
Spray Quality: Coarse*



***IMPORTANT: FOR PWM SPRAYERS (Pressure-drop through solenoid):** Depending on the solenoid used, for larger nozzle sizes (or paired nozzle sizes) 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). ALWAYS enter the joint nozzle size in the controller.

3. **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 % <141µ: % 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 nozzles.
   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 single nozzle.
   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 ~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 themselves.
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. Remember, if you cannot find a spray quality in the chart or in tip wizard, you will have to widen your spray quality search or split to a double down configuration that can provide closer to the ideal spray quality.

Combo-Jet® ER110-125
Part No: 40281-125 Color: Teal
Screen No: Not Required

Pressure (psi)	Speed Range (mph)	DC (%) @ 12 mph	Class	VMD (µ)	<141 (%)	<600 (%)
20	2.6-10.2	>100	XC	467µ	7	58
25	2.9-11.4	>100	XC	447µ	8	64
30	3.1-12.5	96	XC	430µ	8	68
35	3.4-13.5	89	XC	416µ	9	71
40	3.6-14.5	83	XC	403µ	9	73
45	3.8-15.3	78	XC	392µ	10	75
50	4.0-16.2	74	XC	383µ	10	77
55	4.2-17.0	71	VC	374µ	11	78
60	4.4-17.7	68	VC	366µ	11	79
65	4.6-18.4	65	VC	358µ	11	80

Combo-Jet® SR110-06
Part No: 40287-06 Color: Grey
Screen No: Not Required

Pressure (psi)	Speed Range (mph)	DC (%) @ 12 mph	Class	VMD (µ)	<141 (%)	<600 (%)
25	2.7-11.0	>100	XC	466µ	3	76
30	3.0-12.0	100	VC	438µ	5	81
35	3.2-13.0	92	VC	414µ	6	84
40	3.5-13.9	86	C	393µ	7	87
45	3.7-14.7	82	C	375µ	8	88
50	3.9-15.5	77	C	358µ	9	90
55	4.1-16.3	74	C	344µ	10	91
60	4.2-17.0	71	C	330µ	11	92
65	4.4-17.7	68	C	318µ	11	93

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.

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

COMBO-JET ER80° & ER110° 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.

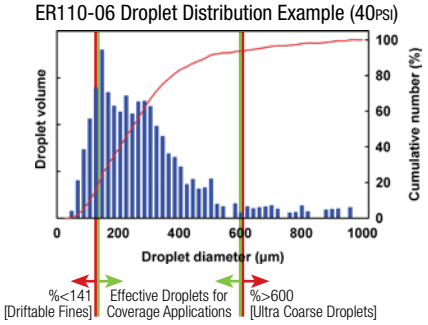
- **Longer Lasting Stainless Tips**
- **Less Plugged Nozzles**
- **Perfect for PWM Sprayers**
- **Consistent Pattern at Lower PSI**
- **Solid Mass Spray Droplets**
- **Acid Resistant Nozzles**

A DETAILED LOOK AT: **ER110-06**

Balance of Drift Control & Coverage

FINE COVERAGE — DRIFT REDUCTION

ER110-06 Droplet Distribution Example (40PSI)



ER series is designed to produce finer spray with a consistent pattern.

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

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	F	F	F	F	F	F	F	F
ER80-025	M	M	F	F	F	F	F	F	F	F	F
ER80-03	M	M	F	F	F	F	F	F	F	F	F
ER80-04	M	M	M	M	M	F	F	F	F	F	F
ER80-05	C	C	M	M	M	M	M	M	M	F	F
ER80-06	C	C	C	C	C	C	M	M	M	M	M
ER80-08	VC	C	C	M	M	M	M	F	F	F	F
ER80-10	XC	XC	XC	VC	C	C	C	M	M	M	F
ER80-125		XC	XC	VC	VC	C	C	C	C	C	M
ER80-15		XC	XC	XC	VC	C	C	C	M	M	M
ER80-20		UC	XC	XC	XC	XC	VC	C	C	C	C
ER80-25		UC	XC	XC	XC	VC	VC	C	C	C	C
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	50	60	65	70	80
ER110-01	F	F	F	F	F	F	F	F	F	F	F
ER110-015	F	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	F
ER110-03	F	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	C	C	C	M	M	M	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	C	C	C	C	C
ER110-15		XC	XC	XC	VC	VC	C	C	C	C	C
ER110-20		XC	XC	XC	XC	XC	XC	XC	VC	VC	C
ER110-25		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 (viton avail.)
Cap: Glass-reinforced Polypropylene

ASABE Spray Classification

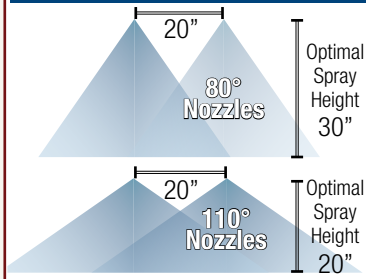
(ASABE S572.1 Standard)
Spray quality is categorized based on Dv0.1 and VMD droplet sizes. Objective testing data (by 3rd party), from spray spectrum recording equipment (without wind tunnel use), has been used to classify spray quality for this chart. Chart shown includes spray quality at tested data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

- Fine (F)
- Medium (M)
- Coarse (C)
- Very Coarse (VC)
- Extremely Coarse (XC)
- Ultra Coarse (UC)

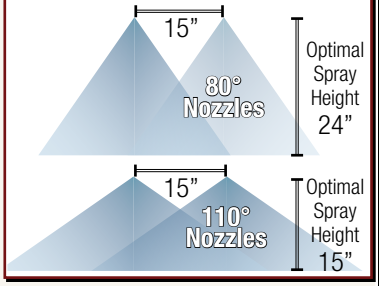
Tips sized up to 110-06 verified on Phase Doppler Particle Analyzer (PDPA); tips sized over 110-06 verified on Malvern.

Optimal Spray Tip Height

20" Nozzle Spacing



15" Nozzle Spacing



COMBO-JET SR80° & SR110° 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%+.

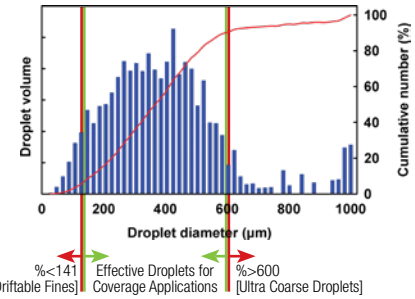
- Longer Lasting Stainless Tips
- Less Plugged Nozzles
- Perfect for PWM Sprayers
- Consistent Pattern at Lower PSI
- Solid Mass Spray Droplets
- Acid Resistant Nozzles

A DETAILED LOOK AT: **SR110-06**

Balance of Drift Control & Coverage

FINE COVERAGE — DRIFT REDUCTION

SR110-06 Droplet Distribution Example (40PSI)



%<141 [Driftable Fines] | Effective Droplets for Coverage Applications | %>600 [Ultra Coarse Droplets]

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

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	F	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	C	M	M	M
SR80-05	VC	VC	C	C	C	C	C	C	C	C
SR80-06	XC	VC	VC	VC	C	C	C	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	UC	UC	UC	UC	UC	UC	XC	XC	XC
SR80-15	UC	UC	UC	UC	UC	UC	UC	UC	UC	UC
SR80-20		UC	UC	UC	UC	UC	UC	UC	UC	UC
SR80-25		UC	UC	UC	UC	UC	UC	UC	UC	UC
SR80-30		UC	UC	UC	UC	UC	UC	UC	UC	UC

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	C	C	C	C	M	M	M	M	M	F
SR110-04	C	C	C	C	C	M	M	M	M	M
SR110-05	C	C	C	C	C	C	C	M	M	M
SR110-06	VC	VC	C	C	C	C	C	C	C	M
SR110-08	UC	XC	XC	XC	XC	VC	C	C	C	C
SR110-10	UC	XC	XC	XC	XC	XC	VC	C	C	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	XC	XC	XC	XC	XC	XC
SR110-25		UC	UC	XC	XC	XC	XC	XC	XC	XC

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

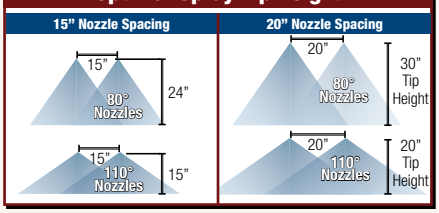
ASABE Spray Classification

(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.

Optimal Spray Tip Height



LERAP Ratings for SR Series
As of January 2021

SR110-05	★★★ 75% 1.0-1.5BAR ★★☆ 50% 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 for SR series]

SR Size	-01	-015	-02	-025	-03	-04	-05	-06	-08	-10	-125	-15	-20	-25	-30
SR80°	40285-015	40285-02	40285-025	40285-03	40285-03	40285-06	40285-06	40285-08	40285-10	40285-125	40285-20	40285-20	40285-25	40285-40	40285-40
SR110°	-	40285-02	40285-025	40285-04	40285-04	40285-06	40285-06	40285-08S	40285-08S	40285-10S	40285-13S	40285-20	40285-25	40285-40	-

COMBO-JET MR80° & MR110° 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%+.

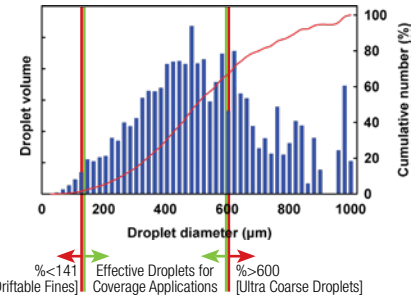
- **Longer Lasting Stainless Tips**
- **Superior Drift Reduction**
- **Perfect for PWM Sprayers**
- **Consistent Pattern at Lower PSI**
- **Solid Mass Spray Droplets**
- **Acid Resistant Nozzles**

A DETAILED LOOK AT: **MR110-06**

Balance of Drift Control & Coverage

FINE COVERAGE — DRIFT REDUCTION

MR110-06 Droplet Distribution Example (40PSI)



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

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	C	C	M	M	M	M	M	F
MR80-02	C	C	C	C	C	M	M	M	M
MR80-025	VC	VC	C	C	C	C	C	C	C
MR80-03	VC	VC	C	C	C	C	C	C	C
MR80-04	VC	VC	C	C	C	C	C	C	C
MR80-05	XC	XC	VC	VC	VC	VC	C	C	C
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-JET® MR110° ASABE S572.1 Spray Quality Chart

Pressure (PSI)	30	35	40	45	50	60	65	70	80
MR110-015	C	C	C	M	M	M	F	F	F
MR110-02	C	C	C	M	M	M	M	M	F
MR110-025	C	C	C	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	UC	UC	UC	UC	UC	UC	UC	UC
MR110-15	UC	UC	UC	UC	UC	UC	UC	UC	UC
MR110-20		UC	UC	UC	UC	UC	UC	UC	XC

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

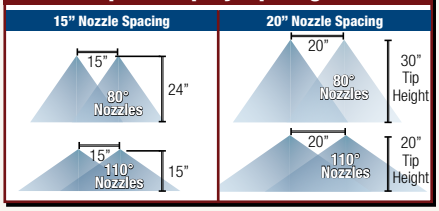
ASABE Spray Classification

(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.

- 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



LERAP Ratings for MR Series

As of January 2021

MR110-04	★★★ 75% 1.0-2.5BAR	★★ 50% 2.6-3.5BAR
MR110-05	★★★★ 90% 1.0-1.5BAR	★★★ 75% 1.6-5.0BAR
MR110-06	★★★★ 90% 1.0-1.5BAR	★★★ 75% 1.6-5.0BAR

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

JKI Nozzle Ratings for MRs

Visit www.wilger.net for updated charts

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

-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	40285-02	40285-025	40285-03	40285-04	40285-05	40285-06	40285-08	40285-10	40285-125	40285-15	40285-20	40285-25	40285-30	40285-40

COMBO-JET DR80° & DR110° 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.

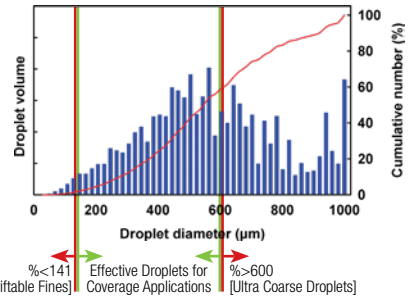
- **Longer Lasting Stainless Tips**
- **Superior Drift Reduction**
- **Perfect for PWM Sprayers**
- **Consistent Pattern at Lower PSI**
- **Solid Mass Spray Droplets**
- **Acid Resistant Nozzles**

A DETAILED LOOK AT: **DR110-06**

Balance of Drift Control & Coverage

FINE COVERAGE — DRIFT REDUCTION

DR110-06 Droplet Distribution Example (40PSI)



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

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

Pressure (PSI)	30	35	40	45	50	60	65	70	80
DR80-005	C	M	M	F	F	F	F	F	F
DR80-0067	C	C	M	M	M	M	F	F	F
DR80-01	C	C	C	M	M	M	M	F	F
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	XC	XC	XC	XC	XC	XC	VC	VC
DR80-06	XC	XC	XC	XC	XC	XC	XC	XC	XC
DR80-08	UC	UC	UC	UC	UC	UC	UC	UC	UC
DR80-10	UC	UC	UC	UC	UC	UC	UC	UC	UC
DR80-125	UC	UC	UC	UC	UC	UC	UC	UC	UC
DR80-15	UC	UC	UC	UC	UC	UC	UC	UC	UC
DR80-20		UC	UC	UC	UC	UC	UC	UC	UC
DR80-25		UC	UC	UC	UC	UC	UC	UC	UC
DR80-30		UC	UC	UC	UC	UC	UC	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	XC	XC	XC	XC	XC	XC	VC	VC
DR110-06	XC	XC	XC	XC	XC	XC	XC	XC	VC
DR110-08	UC	UC	UC	UC	UC	UC	UC	UC	XC
DR110-10	UC	UC	UC	UC	UC	UC	UC	UC	UC
DR110-125	UC	UC	UC	UC	UC	UC	UC	UC	UC
DR110-15	UC	UC	UC	UC	UC	UC	UC	UC	UC

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

-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	40285-02	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® 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

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

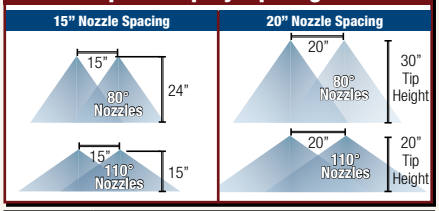
ASABE Spray Classification

(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)

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



LERAP Ratings for DR Series

As of January 2021

DR110-025	★★★ 75% 1.0-2.5BAR	★★☆ 50% 2.6-3.5BAR
DR110-03	★☆☆☆ 90% 1.0-1.5BAR	★★★ 75% 1.6-2.5BAR ★★☆ 50% 2.6-3.5BAR
DR110-04	★★★ 75% 1.0-5.0BAR	
DR110-05	★☆☆☆ 90% 1.0-1.5BAR	★★★ 75% 1.6-5.0BAR
DR110-06	★☆☆☆ 90% 1.0-3.0BAR	★★★ 75% 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

JKI Nozzle Ratings for DR Series

Visit www.wilger.net for updated charts

COMBO-JET UR110° Series* Spray Tips

*U.S. Patent No. 10,603,681

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.

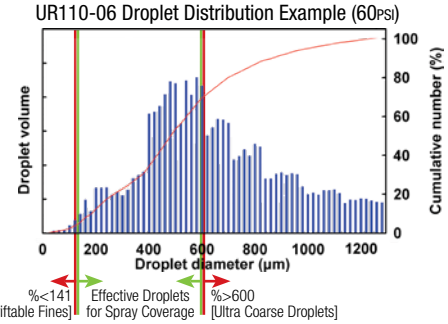
- Approved for Dicamba Mixes
- Ultra Low Spray Drift
- Perfect for PWM Sprayers
- Longer Lasting Stainless Tips
- Solid Mass Spray Droplets
- Acid Resistant Nozzles

A DETAILED LOOK AT: **UR110-06**

Balance of Drift Control & Coverage

FINE COVERAGE — DRIFT REDUCTION

UR110-06 Droplet Distribution Example (60PSI)



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

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	UC	UC	UC	UC	UC	UC	UC
UR110-05	UC	UC	UC	UC	UC	UC	UC	UC
UR110-06	UC	UC	UC	UC	UC	UC	UC	UC
UR110-08	UC	UC	UC	UC	UC	UC	UC	UC
UR110-10	UC	UC	UC	UC	UC	UC	UC	UC

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

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

UR two-piece pre-orifices must be replaced with a new pair only. Correct orifices must be used for proper performance.

-025	-03	-04	-05	-06	-08	-10
40292-22	40292-23	40292-24	40292-25	40292-26	40292-28	40292-30

*U.S. Patent No. 10,603,681

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)

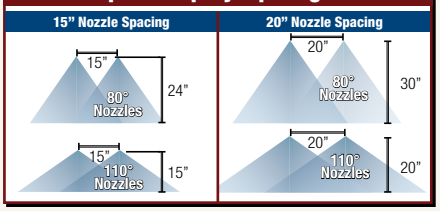
UR Nozzles verified on Malvern.

JKI Ratings for UR Series

As of January 2021

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 Spray Tip Height



COMBO-JET® Snap-in Strainers - What size(s) and when?

Wilger manufactures snap-in strainers that can be used to protect a spray nozzle and keep it spraying instead of getting plugged by residues or debris. They snap in to any COMBO-JET cap[UR] or metering orifice so the cap handles as one piece.

Nozzle Size	100 Mesh	50 Mesh	16/25 Mesh
-01 or smaller	X		
-015	X		
-02	X	X	
-025		X	
-03		X	
-04		X	
-05		X	X
-06		X	X
-08 or larger	Nozzle strainer is generally not required		X

[UR]Strainers not compatible with UR series due to stacked pre-orifice

Stainless Steel Strainers

Snap-in Stainless Steel Mesh Strainer for **Chemical Spraying**

40250-00 40251-00

Slotted Strainers

Snap-in Plastic Slotted Strainer for **Fertilizer metering or streaming**

40249-00 40248-00

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

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 & Angle	Flow Rate USGPM	PSI	Application Rate in US Gallons/Acre on 20" Nozzle Spacing @ Sprayer Speed - Miles / Hour							Spray Classification; VMD (Droplet Size in µ); %<141µ (Drift %); %<600µ (Small Droplets)																	
										ER80° Series				SR80° Series				MR80° Series				DR80° Series					
	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-005	#40270-005			SR80-005	#40288-005			MR80-005	#40290-005			DR80-005	#40280-005				
	us gpm	psi	2GPA	3GPA	4GPA	5GPA	6GPA	7GPA	8GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600		
80 -005 Nozzles	0.035	20	5.3	3.5	2.6	2.1	1.8	1.5	1.3	F	167	33%	100%														
	0.040	25	5.9	3.9	2.9	2.3	2.0	1.7	1.5	F	157	40%	100%					M	261	11%	99%	C	311	6%	100%		
	0.043	30	6.4	4.3	3.2	2.6	2.1	1.8	1.6	F	149	46%	100%					M	236	17%	98%	C	276	11%	100%		
	0.047	35	6.9	4.6	3.5	2.8	2.3	2.0	1.7	F	142	51%	100%					M	217	22%	97%	M	250	16%	100%		
	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%	100%		
	0.053	45	7.9	5.3	3.9	3.2	2.6	2.3	2.0	F	132	59%	100%					F	189	30%	95%	F	213	23%	100%		
	0.056	50	8.3	5.5	4.2	3.3	2.8	2.4	2.1	F	128	63%	100%					F	178	33%	94%	F	200	25%	100%		
	0.061	60	9.1	6.1	4.5	3.6	3.0	2.6	2.3	F	121	68%	100%					F	161	39%	93%	F	178	30%	100%		
	0.064	65	9.5	6.3	4.7	3.8	3.2	2.7	2.4	F	118	71%	100%					F	154	41%	92%	F	169	33%	100%		
	0.066	70	9.8	6.5	4.9	3.9	3.3	2.8	2.5	F	116	73%	100%					F	148	44%	91%	F	161	35%	100%		
	0.071	80	11.0	7.0	5.3	4.2	3.5	3.0	2.6	VF	111	78%	100%					F	138	48%	90%	F	148	38%	100%		
	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-0067	#40270-0067			SR80-0067	#40288-0067			MR80-0067	#40290-0067			DR80-0067	#40280-0067				
	us gpm	psi	2GPA	3GPA	4GPA	5GPA	6GPA	7GPA	8GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600		
80 -0067 Nozzles	0.047	20	7.0	4.7	3.5	2.8	2.3	2.0	1.8	F	199	21%	100%														
	0.053	25	7.9	5.2	3.9	3.1	2.6	2.2	2.0	F	183	29%	100%					M	231	18%	99%	C	337	6%	100%		
	0.058	30	8.6	5.7	4.3	3.4	2.9	2.5	2.2	F	171	35%	100%					F	211	24%	98%	C	308	9%	100%		
	0.063	35	9.3	6.2	4.7	3.7	3.1	2.7	2.3	F	161	40%	100%					F	195	29%	97%	C	285	11%	100%		
	0.067	40	9.9	6.6	5.0	4.0	3.3	2.8	2.5	F	153	45%	100%					F	182	33%	96%	M	267	13%	100%		
	0.071	45	11.0	7.0	5.3	4.2	3.5	3.0	2.6	F	147	49%	100%					F	171	37%	95%	M	252	15%	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%	M	239	17%	100%		
	0.082	60	12.0	8.1	6.1	4.9	4.1	3.5	3.0	F	131	58%	100%					F	148	46%	93%	M	218	20%	100%		
	0.085	65	13.0	8.5	6.3	5.1	4.2	3.6	3.2	F	128	61%	100%					F	142	49%	92%	F	210	21%	100%		
	0.089	70	13.0	8.8	6.6	5.3	4.4	3.8	3.3	F	124	63%	100%					F	136	51%	91%	F	202	22%	100%		
	0.095	80	14.0	9.4	7.0	5.6	4.7	4.0	3.5	F	118	68%	100%					F	127	55%	90%	F	189	24%	100%		
	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-01	#40270-01			SR80-01	#40288-01			MR80-01	#40290-01			DR80-01	#40280-01				
	us gpm	psi	4GPA	5GPA	6GPA	7.5	8GPA	9GPA	10GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600		
80 -01 Nozzles	0.07	20	5.3	4.2	3.5	2.8	2.6	2.3	2.1	F	175	29%	100%														
	0.08	25	5.9	4.7	3.9	3.1	2.9	2.6	2.3	F	164	35%	100%	M	258	15%	97%										
	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%	C	312	10%	94%		
	0.09	35	6.9	5.6	4.6	3.7	3.5	3.1	2.8	F	149	45%	100%	F	214	25%	97%	F	204	27%	97%	C	291	12%	95%		
	0.10	40	7.4	5.9	5.0	4.0	3.7	3.3	3.0	F	143	49%	100%	F	199	29%	97%	F	191	30%	97%	C	274	14%	96%		
	0.11	45	7.9	6.3	5.3	4.2	3.9	3.5	3.2	F	139	53%	100%	F	186	33%	97%	F	181	33%	97%	M	260	15%	97%		
	0.11	50	8.3	6.6	5.5	4.4	4.2	3.7	3.3	F	134	56%	100%	F	176	36%	98%	F	173	36%	97%	M	248	17%	98%		
	0.12	60	9.1	7.3	6.1	4.8	4.5	4.0	3.6	F	128	62%	100%	F	159	41%	98%	F	159	40%	97%	M	229	19%	99%		
	0.13	65	9.5	7.6	6.3	5.0	4.7	4.2	3.8	F	125	64%	100%	F	152	44%	98%	F	153	42%	97%	M	221	20%	100%		
	0.13	70	9.8	7.9	6.5	5.2	4.9	4.4	3.9	F	122	66%	100%	F	146	46%	98%	F	148	44%	97%	F	214	21%	101%		
	0.14	80	11.0	8.4	7.0	5.6	5.3	4.7	4.2	F	117	70%	100%	F	135	50%	98%	F	139	48%	97%	F	202	23%	102%		
	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-015	#40270-015			SR80-015	#40288-015			MR80-015	#40290-015			DR80-015	#40280-015				
	us gpm	psi	4GPA	5GPA	6GPA	7.5	8GPA	10GPA	12GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600		
80 -015 Nozzles	0.11	20	7.9	6.3	5.3	4.2	3.9	3.2	2.6	F	199	21%	100%														
	0.12	25	8.8	7.0	5.9	4.7	4.4	3.5	2.9	F	188	25%	100%	C	286	13%	94%										
	0.13	30	9.6	7.7	6.4	5.1	4.8	3.9	3.2	F	180	29%	100%	M	262	16%	95%	C	323	10%	94%	VC	418	4%	87%		
	0.14	35	10.0	8.3	6.9	5.6	5.2	4.2	3.5	F	173	32%	100%	M	244	19%	96%	C	301	12%	95%	VC	397	5%	89%		
	0.15	40	11.0	8.9	7.4	5.9	5.6	4.5	3.7	F	167	34%	100%	M	230	22%	96%	C	283	14%	96%	C	380	6%	90%		
	0.16	45	12.0	9.5	7.9	6.3	5.9	4.7	3.9	F	162	37%	100%	M	218	24%	97%	M	269	16%	97%	C	365	6%	91%		
	0.17	50	12.0	10.0	8.3	6.6	6.2	5.0	4.2	F	158	39%	100%	F	207	26%	97%	M	256	17%	97%	C	353	7%	92%		
	0.18	60	14.0	11.0	9.1	7.3	6.8	5.5	4.5	F	151	42%	100%	F	191	30%	97%	M	236	20%	98%	C	332	8%	94%		
	0.19	65	14.0	11.0	9.5	7.6	7.1	5.7	4.7	F	148	44%	100%	F	184	32%	97%	M	227	21%	98%	C	324	8%	94%		
	0.20	70	15.0	12.0	9.8	7.9	7.4	5.9	4.9	F	145	46%	100%	F	177	33%	98%	M	220	22%	99%	C	316	9%	95%		
	0.21	80	16.0	13.0	11.0	8.4	7.9	6.3	5.3	F	140	48%	100%	F	167	36%	98%	F	207	23%	99%	C	302	10%	95%		
	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-02	#40270-02			SR80-02	#40288-02			MR80-02	#40290-02			DR80-02	#40280-02				
	us gpm	psi	5GPA	6GPA	7.5	8GPA	10GPA	12GPA	15GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600		
80 -02 Nozzles	0.14	20	8.4	7.0	5.6	5.3	4.2	3.5	2.8	F	184	28%	100%														
	0.16	25	9.4	7.8	6.3	5.9	4.7	3.9	3.1	F	176	31%	100%	C	273	13%	94%										
	0.17	30	10	8.6	6.9	6.4	5.1	4.3	3.4	F	170	34%	100%	M	257	16%	95%	C	326	8%	94%	XC	454	3%	80%		
	0.19	35	11	9.3	7.4	6.9	5.6	4.6	3.7	F	166	36%	100%	M	244	18%	96%	C	310	10%	94%	VC	435	4%	83%		
	0.20	40	12	9.9	7.9	7.4	5.9	5.0	4.0	F	161	38%	100%	M	233	20%	96%	C	298	11%	94%	VC	419	4%	84%		
	0.21	45	13	11.0	8.4	7.9	6.3	5.3	4.2	F	158	40%	100%	M	224	22%	97%	C	287	13%	94%	VC	406	5%	86%		
	0.22	50	13	11.0	8.9	8.3	6.6	5.5	4.4	F	155	42%	100%	M	216	24%	97%	C	277	14%	95%	VC	394	5%	87%		
	0.24	60	15	12.0	9.7	9.1	7.3	6.1	4.8	F	150	45%	100%	F	203	27%	98%	M	262	16%	95%	C	375	6%	88%		
	0.25	65	15	13.0	10.0	9.5	7.6	6.3	5.0	F	147	46%	100%	F	198	29%	98%	M	255	17%	95%	C	366	6%	89%		
	0.26	70	16	13.0	10.0	9.8	7.9	6.5	5.2	F	145	47%	100%	F	193	30%	98%	M	249	17%	95%	C	359	7%	90%		
	0.28	80	17	14.0	11.0	11.0	8.4	7.0	5.6	F	142	49%	100%	F	184	32%	98%	M	239	19%	95%	C	346	7%	91%		
	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-025	#40270-025			SR80-025	#40288-025			MR80-025	#40290-025			DR80-025	#40280-025				
	us gpm	psi	5GPA	6GPA	7.5	8GPA	10GPA	12GPA	15GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600		
80 -025 Nozzles	0.18	20	11	8.8	7.0	6.6	5.3	4.4	3.5	M	232	17%	100%														
	0.20	25	12	9.8	7.8	7.3	5.9	4.9	3.9	M	219	21%	100%	C	315	9%	91%										
	0.22	30	13	11.0	8.6	8.0	6.4	5.4	4.3	F	209	23%	100%	C	296	11%	93%	VC	425	5%	81%	XC	460	3%	77%		
	0.23	35	14	12.0	9.3	8.7	6.9	5.8	4.6	F	200	26%	100%	C	281	13%	94%	VC	401	6%	83%	VC	443	4%	79%		
	0.25	40	15	12.0	9.9	9.3	7.4	6.2	5.0	F	194	28%	100%	M	268	15%	94%	C	382	6%	85%	VC	430	4%	81%		
	0.27	45	16	13	11.0	9.8	7.9	6.6	5.3	F	188	30%	100%	M	257	17%	95%	C	367	7%	86%	VC	418	5%	82%		
	0.28	50	17	14	11.0	10.0	8.3	6.9	5.5	F	182	31%	100%	M	248	18%	95%	C	353	8%	87%	VC	408	5%	83%		
	0.31	60	18	15	12.0	11.0	9.1	7.6	6.1	F	174	34%	100%	M	233	20%	96%	C	330	9%	89%	C	391	6%	85%		
	0.32	65	19	16	13.0	12.0	9.5	7.9	6.3	F	170	36%	100%	M	226	21%	96%	C	321	10%	89%	C	383	6%	85%		
	0.33	70	20	16	13.0	12.0	9.8	8.2	6.5	F	167	37%	100%	M	221	22%	97%	C	312	10%	90%	C	377	7%	86%		
	0.35	80	21	18	14	13.0	11.0	8.8	7.0	F	161	39%	99%	F	211	24%	97%	C	297	11%	91%	C	365	7%	87%		

NOTE: [1]SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. [2]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 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 (PDPA); tips sized over 110-06 verified on Malvern.

- Fine (F)
- Medium (M)
- Coarse (C)
- Very Coarse (VC)
- Extremely Coarse (XC)
- 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.

80-03 Nozzles

Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-03		#40270-03		SR80-03		#40288-03		MR80-03		#40290-03		DR80-03		#40280-03	
us gpm	psi	5GPA	6GPA	7.5	8GPA	10GPA	12GPA	15GPA	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	M	233	17%	99%												
0.24	**25**	14	12.0	9.4	8.8	7.0	5.9	4.7	M	222	20%	99%	C	368	7%	88%								
0.26	**30**	15	13	10.0	9.6	7.7	6.4	5.1	F	214	23%	99%	C	344	9%	89%	VC	432	5%	81%	XC	481	3%	72%
0.28	**35**	17	14	11.0	10.0	8.3	6.9	5.6	F	207	25%	99%	C	325	11%	90%	VC	409	6%	83%	XC	462	4%	75%
0.30	**40**	18	15	12.0	11.0	8.9	7.4	5.9	F	201	26%	99%	C	309	12%	91%	C	390	7%	85%	VC	447	4%	77%
0.32	**45**	19	16	13.0	12.0	9.5	7.9	6.3	F	196	28%	99%	C	296	14%	91%	C	374	7%	86%	VC	433	5%	79%
0.34	**50**	20	17	13	12.0	10.0	8.3	6.6	F	192	29%	99%	C	285	15%	92%	C	360	8%	88%	VC	422	5%	80%
0.37	**60**	22	18	15	14.0	11.0	9.1	7.3	F	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	F	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	F	179	34%	99%	M	251	18%	93%	C	319	10%	91%	C	387	7%	84%
0.42	**80**	25	21	17	16	13.0	11.0	8.4	F	174	35%	99%	M	239	20%	94%	C	304	11%	92%	C	374	7%	86%

80-04 Nozzles

Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-04		#40270-04		SR80-04		#40288-04		MR80-04		#40290-04		DR80-04		#40280-04	
us gpm	psi	8GPA	10GPA	12.5	15GPA	20GPA	25GPA	30GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
0.28	**20**	11	8.4	6.7	5.6	4.2	3.4	2.8	M	251	16%	99%												
0.32	**25**	13	9.4	7.5	6.3	4.7	3.8	3.1	M	239	19%	99%	C	369	5%	85%								
0.35	**30**	14	10	8.2	6.9	5.1	4.1	3.4	M	230	21%	99%	C	349	7%	87%	VC	420	5%	80%	XC	543	2%	62%
0.37	**35**	15	11	8.9	7.4	5.6	4.4	3.7	M	222	22%	99%	C	331	9%	88%	VC	401	6%	82%	XC	523	3%	65%
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	8.4	6.3	5.0	4.2	F	211	25%	99%	C	303	11%	90%	C	372	8%	85%	XC	493	3%	70%
0.45	**50**	18	13	11	8.9	6.6	5.3	4.4	F	206	26%	99%	C	291	12%	91%	C	360	9%	86%	XC	480	4%	72%
0.49	**60**	19	15	12	10	7.3	5.8	4.8	F	198	28%	99%	M	270	14%	92%	C	341	10%	88%	XC	460	4%	75%
0.51	**65**	20	15	12	10	7.6	6.1	5.0	F	195	29%	99%	M	261	14%	92%	C	333	11%	88%	VC	451	5%	76%
0.53	**70**	21	16	13	10	7.9	6.3	5.2	F	192	29%	99%	M	252	15%	92%	C	326	11%	89%	VC	443	5%	77%
0.57	**80**	22	17	13	11	8.4	6.7	5.6	F	186	31%	99%	M	237	16%	93%	C	313	12%	90%	C	429	5%	79%

80-05 Nozzles

Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-05		#40270-05		SR80-05		#40288-05		MR80-05		#40290-05		DR80-05		#40280-05	
us gpm	psi	10GPA	12.5	15GPA	18GPA	20GPA	25GPA	30GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
0.35	**20**	11	8.4	7.0	5.8	5.3	4.2	3.5	C	296	11%	95%												
0.40	**25**	12	9.4	7.8	6.5	5.9	4.7	3.9	C	280	14%	95%	VC	411	5%	81%								
0.43	**30**	13	10	8.6	7.1	6.4	5.1	4.3	M	267	16%	95%	C	387	7%	83%	XC	504	3%	68%	XC	574	2%	56%
0.47	**35**	14	11	9.3	7.7	6.9	5.6	4.6	M	257	18%	95%	C	367	9%	84%	XC	483	4%	71%	XC	555	2%	59%
0.50	**40**	15	12	10	8.3	7.4	5.9	5.0	M	248	20%	95%	C	349	10%	86%	VC	466	4%	73%	XC	538	2%	62%
0.53	**45**	16	13	11	8.8	7.9	6.3	5.3	M	241	21%	95%	C	334	11%	87%	VC	451	5%	75%	XC	524	3%	65%
0.56	**50**	17	13	11	9.2	8.3	6.6	5.5	M	235	22%	95%	C	320	12%	87%	VC	438	5%	77%	XC	512	3%	67%
0.61	**60**	18	15	12	10	9.1	7.3	6.1	M	224	25%	95%	C	296	14%	89%	VC	417	6%	79%	XC	492	3%	70%
0.64	**65**	19	15	13	11	10	7.6	6.3	M	220	26%	95%	C	286	14%	89%	C	408	6%	81%	XC	483	4%	71%
0.66	**70**	20	16	13	11	10	7.9	6.5	F	215	26%	95%	C	276	15%	90%	C	400	6%	81%	VC	475	4%	72%
0.71	**80**	21	17	14	12	11	8.4	7.0	F	208	28%	95%	M	258	16%	91%	C	385	7%	83%	VC	461	4%	74%

80-06 Nozzles

Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-06		#40270-06		SR80-06		#40288-06		MR80-06		#40290-06		DR80-06		#40280-06	
us gpm	psi	10GPA	12.5	15GPA	18GPA	20GPA	30GPA	35GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
0.42	**20**	13	10	8.4	7.0	6.3	4.2	3.6	C	322	12%	92%												
0.47	**25**	14	11	9.4	7.8	7.0	4.7	4.0	C	308	15%	91%	VC	440	4%	78%								
0.52	**30**	15	12	10	8.6	7.7	5.1	4.4	C	296	17%	91%	VC	420	5%	81%	XC	526	2%	64%	XC	596	1%	51%
0.56	**35**	17	13	11	9.3	8.3	5.6	4.8	C	287	18%	91%	VC	403	6%	83%	XC	508	3%	67%	XC	579	2%	54%
0.60	**40**	18	14	12	10	8.9	5.9	5.1	C	279	20%	91%	C	390	7%	84%	XC	492	3%	70%	XC	564	2%	57%
0.64	**45**	19	15	13	11	10	6.3	5.4	C	273	21%	91%	C	378	7%	85%	XC	479	4%	72%	XC	551	2%	59%
0.67	**50**	20	16	13	11	10	6.6	5.7	M	267	22%	90%	C	368	8%	86%	VC	468	4%	73%	XC	540	2%	61%
0.73	**60**	22	17	15	12	11	7.3	6.2	M	257	24%	90%	C	351	9%	88%	VC	448	5%	76%	XC	521	3%	64%
0.76	**65**	23	18	15	13	11	7.6	6.5	M	253	25%	90%	C	344	9%	89%	VC	440	5%	77%	XC	513	3%	65%
0.79	**70**	24	19	16	13	12	7.9	6.7	M	249	26%	90%	C	337	10%	89%	VC	433	5%	78%	XC	505	3%	66%
0.85	**80**	25	20	17	14	13	8.4	7.2	M	242	27%	90%	C	326	10%	90%	C	419	6%	80%	XC	492	3%	68%

80-08 Nozzles

Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-08		#40270-08		SR80-08		#40288-08		MR80-08		#40290-08		DR80-08		#40280-08	
us gpm	psi	15GPA	18GPA	20GPA	25GPA	30GPA	35GPA	40GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
0.57	**20**	11	9.3	8.4	6.7	5.6	4.8	4.2	VC	367	12%	86%												
0.63	**25**	13	10	9.4	7.5	6.3	5.4	4.7	C	338	15%	89%	UC	516	7%	54%								
0.69	**30**	14	11	10	8.2	6.9	5.9	5.1	C	317	17%	90%	UC	490	8%	59%	UC	540	6%	63%	UC	619	3%	52%
0.75	**35**	15	12	11	8.9	7.4	6.4	5.6	M	300	19%	92%	XC	468	8%	63%	UC	518	7%	67%	UC	600	4%	55%
0.80	**40**	16	13	12	10	7.9	6.8	5.9	M	286	21%	93%	XC	449	9%	66%	UC	500	8%	69%	UC	585	4%	58%
0.85	**45**	17	14	13	10	8.4	7.2	6.3	M	274	22%	93%	XC	432	10%	69%	UC	484	9%	71%	UC	571	4%	60%
0.89	**50**	18	15	13	11	8.9	7.6	6.6	M	264	23%	94%	XC	417	10%	71%	XC	470	9%	73%	UC	559	5%	62%
0.98	**60**	19	16	15	12	10	8.3	7.3	F	247	26%	95%	XC	390	11%	74%	XC	448	10%	76%	UC	539	5%	65%
1.02	**65**	20	17	15	12	10	8.7	7.6	F	240	27%	95%	VC	379	12%	75%	XC	438	11%	77%	UC	531	5%	66%
1.06	**70**	21	17	16	13	10	9.0	7.9	F	233	28%	95%	VC	368	12%	76%	XC	430	11%	78%	UC	523	6%	67%
1.13	**80**	22	19	17	13	11	10	8.4	F	223	29%	96%	C	349	13%	78%	VC	415	12%	80%	UC	509	6%	69%

80-10 Nozzles

Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-10		#40270-10		SR80-10		#40288-10		MR80-10		#40290-10		DR80-10		#40280-10	
us gpm	psi	15GPA	18GPA	20GPA	25GPA	30GPA	40GPA	50GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
0.71	**20**	14	12	11	8.4	7.0	5.3	4.2	XC	458	9%	78%												
0.79	**25**	16	13	12	9.4	7.8	5.9	4.7	XC	428	10%	80%	UC	537	6%	50%								
0.87	**30**	17	14	13	10	8.6	6.4	5.1	XC	405	12%	82%	UC	512	7%	55%	UC	546	5%	62%	UC	611	4%	52%
0.94	**35**	19	15	14	11	9.3	6.9	5.6	VC	386	13%	83%	UC	490	7%	59%	UC	528	6%	65%	UC	596	5%	55%
1.00	**40**	20	17	15	12	10	7.4	5.9	C	371	14%	84%	XC	472	8%	63%	UC	513	6%	67%	UC	582	5%	57%
1.06	**45**	21	18	16	13	11	7.9	6.3	C	358	15%	85%	XC	455	8%	65%	UC	500	7%	69%	UC	571	6%	59%
1.12	**50**	22	18	17	13	11	8.3	6.6	C	346	16%	86%	XC	441	9%	67%	UC	489	7%	70%	UC	561	6%	60%
1.22	**60**	24	20	18	15	12	9.1	7.3	M	328	18%	87%	XC	415	10%	71%	XC	470	8%	72%	UC	544	6%	63%
1.27	**65**	25	21	19	15	13	10	7.6	M	320	18%	87%	XC	404	10%	72%	XC	461	8%	73%	UC	537	7%	64%
1.32	**70**	26	22	20	16	13	10	7.9	M	313	19%	88%	XC	394	10%	74%	XC	454	8%	74%	UC	530	7%	65%
1.41	**80**	28	23	21	17	14	11	8.4	F	300	20%	89%	VC	375	11%	76%	XC	441	9%	76%	UC	518	7%	67%

NOTE: [1]SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. [2]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	Sprayer Speed (on 20" spacing) @							ER80-125		#40270-125		SR80-125		#40288-125		MR80-125		#40290-125		DR80-125		#40280-125	
	us gpm	psi	20GPA	25GPA	30GPA	35GPA	40GPA	45GPA	50GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	0.99	**25**	15	12	10	8.4	7.3	6.5	5.9	XC	433	10%	79%	UC	531	6%	51%								
	1.08	**30**	16	13	11	9.2	8.0	7.1	6.4	XC	413	11%	81%	UC	509	7%	55%	UC	585	5%	56%	UC	624	4%	50%
80	1.17	**35**	17	14	12	10	8.7	7.7	6.9	VC	397	12%	82%	UC	490	8%	58%	UC	569	6%	58%	UC	609	4%	52%
-125	1.25	**40**	19	15	12	11	9.3	8.3	7.4	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	8.8	7.9	C	372	14%	84%	XC	460	9%	63%	UC	545	7%	62%	UC	584	5%	56%
	1.40	**50**	21	17	14	12	10	9.2	8.3	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	9.1	C	345	15%	87%	XC	425	10%	68%	UC	519	8%	66%	UC	557	6%	59%
	1.59	**65**	24	19	16	14	12	11	10	C	338	16%	87%	XC	416	10%	69%	UC	511	8%	67%	UC	549	6%	60%
	1.65	**70**	25	20	16	14	12	11	10	C	331	16%	88%	XC	407	11%	70%	XC	505	8%	67%	UC	543	6%	61%
	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	Sprayer Speed (on 20" spacing) @							ER80-15		#40270-15		SR80-15		#40288-15		MR80-15		#40290-15		DR80-15		#40280-15	
	us gpm	psi	25GPA	30GPA	35GPA	40GPA	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	8.8	7.8	7.0	6.4	XC	434	9%	78%	UC	576	5%	43%								
	1.30	**30**	15	13	11	10	8.6	7.7	7.0	XC	412	10%	79%	UC	554	6%	47%	UC	513	7%	66%	UC	637	3%	48%
80	1.40	**35**	17	14	12	10	9.3	8.3	7.6	XC	394	11%	80%	UC	535	6%	51%	UC	495	8%	69%	UC	620	3%	51%
-15	1.50	**40**	18	15	13	11	10	8.9	8.1	VC	379	12%	81%	UC	519	6%	53%	UC	480	8%	70%	UC	605	3%	53%
Nozzles	1.59	**45**	19	16	14	12	11	10	8.6	C	366	13%	82%	UC	505	7%	56%	XC	467	9%	72%	UC	592	4%	55%
	1.68	**50**	20	17	14	12	11	10	9.1	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	C	337	15%	83%	XC	471	7%	61%	XC	438	10%	75%	UC	562	4%	59%
	1.91	**65**	23	19	16	14	13	11	10	M	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	Sprayer Speed (on 20" spacing) @							ER80-20		#40270-20		SR80-20		#40288-20		MR80-20		#40290-20		DR80-20		#40280-20	
	us gpm	psi	30GPA	35GPA	40GPA	45GPA	50GPA	55GPA	60GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	1.58	**25**	16	13	12	10	9.4	8.5	7.8	UC	483	8%	71%	UC	574	5%	44%								
	1.73	**30**	17	15	13	11	10	9.4	8.6	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	9.3	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%	UC	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	**60**	24	21	18	16	15	13	12	C	385	13%	81%	XC	464	7%	62%	XC	472	8%	71%	UC	533	5%	64%
	2.55	**65**	25	22	19	17	15	14	13	C	377	13%	81%	XC	454	7%	63%	XC	462	8%	72%	UC	523	5%	65%
	2.65	**70**	26	22	20	17	16	14	13	C	370	14%	82%	XC	444	7%	64%	XC	453	8%	73%	UC	514	5%	66%
	2.83	**80**	28	24	21	19	17	15	14	C	357	15%	83%	XC	427	8%	66%	XC	438	9%	74%	UC	498	5%	68%
	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-25		#40270-25		SR80-25		#40288-25		MR80-25		#40290-25		DR80-25		#40280-25	
	us gpm	psi	35GPA	40GPA	45GPA	50GPA	55GPA	60GPA	70GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	1.98	**25**	17	15	13	12	11	10	8.4	UC	485	9%	70%	UC	532	5%	51%								
	2.17	**30**	18	16	14	13	12	11	9.2	XC	462	10%	72%	UC	511	5%	54%	UC	604	4%	55%	UC	657	3%	46%
80	2.34	**35**	20	17	15	14	13	12	10	XC	443	10%	74%	UC	494	6%	57%	UC	583	4%	58%	UC	635	3%	49%
-25	2.50	**40**	21	19	17	15	14	12	11	XC	427	11%	75%	UC	479	6%	59%	UC	566	4%	60%	UC	617	3%	52%
Nozzles	2.65	**45**	23	20	18	16	14	13	11	VC	414	12%	76%	XC	466	7%	61%	UC	552	5%	62%	UC	601	3%	55%
	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	C	375	14%	79%	XC	425	8%	66%	UC	508	6%	67%	UC	553	4%	61%
	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%	62%
	3.54	**80**	30	26	23	21	19	18	15	C	354	15%	81%	XC	402	8%	68%	UC	485	6%	69%	UC	528	4%	64%
	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-30		#40270-30		SR80-30		#40288-30		MR80-30		#40290-30		DR80-30		#40280-30	
	us gpm	psi	40GPA	50GPA	60GPA	70GPA	80GPA	90GPA	100	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	2.37	**25**	18	14	12	10	8.8	7.8	7.0	UC	506	5%	67%												
	2.60	**30**	19	15	13	11	10	8.6	7.7	UC	481	6%	69%	UC	508	5%	54%	UC	591	4%	55%	UC	654	2%	47%
80	2.81	**35**	21	17	14	12	10	9.3	8.3	XC	461	7%	71%	UC	490	5%	57%	UC	572	4%	58%	UC	623	2%	51%
-30	3.00	**40**	22	18	15	13	11	10	8.9	XC	444	7%	73%	XC	474	6%	59%	UC	556	4%	60%	UC	597	3%	54%
Nozzles	3.18	**45**	24	19	16	14	12	11	10	XC	430	8%	74%	XC	461	6%	61%	UC	542	5%	62%	UC	575	3%	57%
	3.35	**50**	25	20	17	14	12	11	10	XC	417	9%	75%	XC	449	6%	62%	UC	530	5%	64%	UC	556	3%	59%
	3.67	**60**	27	22	18	16	14	12	11	XC	397	9%	77%	XC	429	6%	65%	UC	510	5%	67%	UC	525	3%	63%
	3.82	**65**	28	23	19	16	14	13	11	XC	388	10%	77%	XC	421	7%	66%	UC	501	5%	68%	UC	512	3%	65%
	3.97	**70**	29	24	20	17	15	13	12	VC	380	10%	78%	XC	414	7%	67%	UC	493	6%	69%	UC	500	4%	66%
	4.24	**80**	32	25	21	18	16	14	13	VC	366	11%	79%	XC	400	7%	69%	UC	480	6%	71%	XC	479	4%	68%
	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-40		#40270-40		SR80-40		#40288-40		MR80-40		#40290-40					
	us gpm	psi	50GPA	60GPA	70GPA	80GPA	90GPA	100	120	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600				
	3.74	**35**	22	19	16	14	12	11	9.3	XC	460	7%	71%	UC	481	5%	58%	UC	541	4%	61%				
	4.00	**40**	24	20	17	15	13	12	10	XC	444	8%	73%	XC	467	5%	60%	UC	524	5%	63%				
80	4.24	**45**	25	21	18	16	14	13	11	XC	430	9%	74%	XC	455	5%	62%	UC	510	5%	65%				
-40	4.47	**50**	27	22	19	17	15	13	11	XC	418	9%	75%	XC	445	6%	63%	UC	498	5%	66%				
Nozzles	4.90	**60**	29	24	21	18	16	15	12	XC	398	10%	77%	XC	428	6%	66%	XC	477	5%	68%				
	5.10	**65**	30	25	22	19	17	15	13	XC	390	10%	77%	XC	420	6%	67%	XC	468	6%	69%				
	5.29	**70**	31	26	22	20	17	16	13	XC	382	11%	78%	XC	414	6%	67%	XC	460	6%	70%				
	7.07	**80**	42	35	30	26	23	21	18	VC	369	11%	79%	XC	402	7%	69%	XC	446	6%	72%				
	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-50		#40270-50													
	us gpm	psi	70GPA	80GPA	90GPA	100	110	120	130	Class	VMD	<141	<600												
	4.68	**35**	20	17	15	14	13	12	11	XC	466	7%	70%												
	5.00	**40**	21	19	17	15	14	12	11	XC	450	7%	72%												
80	5.30	**45**	23	20	18	16	14	13	12	XC	437	8%	73%												
-50	5.59	**50**	24	21	18	17	15	14	13	XC	425	8%	74%												
Nozzles	6.12	**60**	26	23	20	18	17	15	14	XC	405	9%	76%												
	6.37	**65**	27	24	21	19	17	16	15	XC	396	9%	76%												
	6.61	**70**	28	25	22	20	18	16	15	XC	389	9%	77%												
	7.07	**80**	30	26	23	21	19	18	16	VC	375	10%	78%												
	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER80-60		#40270-60													
	us gpm	psi	90GPA	120	140	160	180	200	220	Class	VMD	<141	<600												
	5.61	**35**	19	14	12	10	9.3	8.3	7.6	XC	458	8%	69%												
	6.00	**40**	20	15	13	11	10	8.9	8.1	XC	444	8%	70%												
80	6.36	**45**	21	16	14	12	11	10	8.6	XC	433	9%	71%												
-60	6.71	**50**	22	17	14	12	11	10	9.1	XC	422	9%	72%												
Nozzles	7.35	**60**	24	18	16	14	12	11	10	XC	405	10%	74%												
	7.65	**65**	25	19	16	14	13	11	10	XC	397	10%	75%												
	7.94	**70**	26	20	17	15	13	12	11	XC	391	11%	76%												
	8.49	**80**	28	21	18	16	14	13	11	VC	379	11%	78%												

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 (PDPA); tips sized over 110-06 verified on Malvern.

- Fine (F)
- Medium (M)
- Coarse (C)
- Very Coarse (VC)
- Extremely Coarse (XC)
- 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.

Nozzle Size & Angle	Flow Rate USGPM	PSI	Application Rate in US Gallons/Acre on 20" Nozzle Spacing @ Sprayer Speed - Miles / Hour							Spray Classification; VMD (Droplet Size in µ); %<141µ (Drift %); %<600µ (Small Droplets)																	
										ER110° Series				SR110° Series				MR110° Series				DR110° Series				UR Series	
										Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER110-01		#40281-01															
	us gpm	psi	4GPA	5GPA	6GPA	7.5	8GPA	9GPA	10GPA	Class	VMD	<141	<600														
110 -01 Nozzles	0.07	20	5.3	4.2	3.5	2.8	2.6	2.3	2.1	F	148	45%	100%														
	0.08	25	5.9	4.7	3.9	3.1	2.9	2.6	2.3	F	144	48%	100%														
	0.09	30	6.4	5.1	4.3	3.4	3.2	2.9	2.6	F	140	51%	100%														
	0.09	35	6.9	5.6	4.6	3.7	3.5	3.1	2.8	F	136	54%	100%														
	0.10	40	7.4	5.9	5.0	4.0	3.7	3.3	3.0	F	133	56%	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	59%	100%														
	0.12	60	9.1	7.3	6.1	4.8	4.5	4.0	3.6	F	124	62%	100%														
	0.13	65	9.5	7.6	6.3	5.0	4.7	4.2	3.8	F	122	63%	100%														
	0.13	70	9.8	7.9	6.5	5.2	4.9	4.4	3.9	F	121	65%	100%														
	0.14	80	11.0	8.4	7.0	5.6	5.3	4.7	4.2	F	118	67%	100%														
	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER110-015		#40281-015		SR110-015		#40287-015		MR110-015		#40291-015		DR110-015		#40286-015			
	us gpm	psi	4GPA	5GPA	6GPA	7.5	8GPA	10GPA	12GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600		
110 -015 Nozzles	0.11	20	7.9	6.3	5.3	4.2	3.9	3.2	2.6	F	153	40%	100%														
	0.12	25	8.8	7.0	5.9	4.7	4.4	3.5	2.9	F	148	44%	100%	M	225	21%	98%										
	0.13	30	9.6	7.7	6.4	5.1	4.8	3.9	3.2	F	145	47%	100%	F	215	24%	98%	C	322	11%	94%	C	366	7%	92%		
	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%	C	297	14%	96%	C	345	8%	93%		
	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	45	12.0	9.5	7.9	6.3	5.9	4.7	3.9	F	137	53%	100%	F	193	30%	98%	M	261	18%	98%	C	313	11%	95%		
	0.17	50	12.0	10.0	8.3	6.6	6.2	5.0	4.2	F	134	55%	100%	F	187	32%	98%	M	247	20%	99%	C	301	12%	95%		
	0.18	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%	99%	C	281	14%	96%		
	0.19	65	14.0	11.0	9.5	7.6	7.1	5.7	4.7	F	129	59%	100%	F	173	36%	98%	F	216	24%	99%	C	272	15%	96%		
	0.20	70	15.0	12.0	9.8	7.9	7.4	5.9	4.9	F	128	61%	100%	F	169	37%	98%	F	208	25%	99%	M	265	15%	97%		
	0.21	80	16.0	13.0	11.0	8.4	7.9	6.3	5.3	F	125	63%	100%	F	161	39%	98%	F	194	28%	100%	M	251	17%	97%		
	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER110-02		#40281-02		SR110-02		#40287-02		MR110-02		#40291-02		DR110-02		#40286-02			
	us gpm	psi	5GPA	6GPA	7.5	8GPA	10GPA	12GPA	15GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600		
110 -02 Nozzles	0.14	20	8.4	7.0	5.6	5.3	4.2	3.5	2.8	F	173	32%	100%														
	0.16	25	9.4	7.8	6.3	5.9	4.7	3.9	3.1	F	166	36%	100%	M	227	21%	99%										
	0.17	30	10	8.6	6.9	6.4	5.1	4.3	3.4	F	160	39%	100%	M	219	23%	99%	C	315	12%	95%	VC	431	5%	82%		
	0.19	35	11	9.3	7.4	6.9	5.6	4.6	3.7	F	155	42%	100%	F	212	24%	99%	C	295	14%	96%	VC	410	6%	85%		
	0.20	40	12	9.9	7.9	7.4	5.9	5.0	4.0	F	151	45%	100%	F	206	26%	99%	C	279	15%	97%	VC	392	7%	87%		
	0.21	45	13	11.0	8.4	7.9	6.3	5.3	4.2	F	147	47%	100%	F	201	27%	99%	M	265	17%	97%	C	376	7%	89%		
	0.22	50	13	11.0	8.9	8.3	6.6	5.5	4.4	F	144	49%	100%	F	196	29%	99%	M	254	19%	97%	C	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	70	16	13.0	10.0	9.8	7.9	6.5	5.2	F	133	55%	100%	F	181	33%	99%	M	220	23%	98%	C	315	10%	93%		
	0.28	80	17	14.0	11.0	11.0	8.4	7.0	5.6	F	128	58%	100%	F	175	34%	99%	F	208	25%	99%	C	297	11%	94%		
	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER110-025		#40281-025		SR110-025		#40287-025		MR110-025		#40291-025		DR110-025		#40286-025		UR110-025	
	us gpm	psi	5GPA	6GPA	7.5	8GPA	10GPA	12GPA	15GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
110 -025 Nozzles	0.18	20	11	8.8	7.0	6.6	5.3	4.4	3.5	F	194	28%	100%													#40292-025	
	0.20	25	12	9.8	7.8	7.3	5.9	4.9	3.9	F	190	29%	100%	M	244	18%	98%										
	0.22	30	13	11.0	8.6	8.0	6.4	5.4	4.3	F	186	29%	100%	M	236	20%	98%	C	350	9%	91%	VC	434	5%	80%		
	0.23	35	14	12.0	9.3	8.7	6.9	5.8	4.6	F	183	30%	100%	M	228	21%	98%	C	334	10%	92%	VC	414	6%	83%	UC	564
	0.25	40	15	12.0	9.9	9.3	7.4	6.2	5.0	F	181	30%	100%	M	222	23%	98%	C	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	30%	100%	M	216	24%	98%	C	307	12%	94%	C	383	7%	88%	UC	522
	0.28	50	17	14	11.0	10.0	8.3	6.9	5.5	F	176	30%	100%	F	211	25%	98%	C	296	13%	95%	C	370	8%	89%	UC	504
	0.31	60	18	15	12.0	11.0	9.1	7.6	6.1	F	173	31%	100%	F	203	27%	98%	C	277	15%	96%	C	347	9%	92%	XC	474
	0.32	65	19	16	13.0	12.0	9.5	7.9	6.3	F	171	31%	100%	F	199	28%	98%	M	268	16%	96%	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%	M	261	17%	96%	C	328	10%	93%	XC	448
	0.35	80	21	18	14	13.0	11.0	8.8	7.0	F	167	31%	100%	F	189	30%	98%	M	247	18%	97%	C	311	11%	94%	XC	426
	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER110-03		#40281-03		SR110-03		#40287-03		MR110-03		#40291-03		DR110-03		#40286-03		UR110-03	
	us gpm	psi	5GPA	6GPA	7.5	8GPA	10GPA	12GPA	15GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
110 -03 Nozzles	0.21	20	13	11.0	8.4	7.9	6.3	5.3	4.2	F	198	27%	99%													#40292-03	
	0.24	25	14	12.0	9.4	8.8	7.0	5.9	4.7	F	190	29%	99%	C	319	9%	94%										
	0.26	30	15	13	10.0	9.6	7.7	6.4	5.1	F	183	31%	99%	C	303	11%	95%	VC	394	6%	86%	XC	479	4%	74%		
	0.28	35	17	14	11.0	10.0	8.3	6.9	5.6	F	178	33%	98%	C	290	13%	95%	C	376	8%	89%	XC	460	4%	77%	UC	612
	0.30	40	18	15	12.0	11.0	8.9	7.4	5.9	F	173	35%	98%	C	279	15%	96%	C	360	9%	91%	VC	443	5%	80%	UC	589
	0.32	45	19	16	13.0	12.0	9.5	7.9	6.3	F	169	36%	98%	M	269	16%	96%	C	346	9%	92%	VC	428	5%	82%	UC	570
	0.34	50	20	17	13	12.0	10.0	8.3	6.6	F	165	37%	98%	M	260	17%	97%	C	333	10%	93%	VC	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%	C	311	12%	94%	C	391	6%	86%	UC	521
	0.38	65	23	19	15	14.0	11.0	9.5	7.6	F	156	40%	97%	M	237	20%	97%	C	301	12%	95%	C	381	7%	87%	UC	507
	0.40	70	24	20	16	15.0	12.0	9.8	7.9	F	153	41%	97%	M	231	21%	98%	C	292	13%	95%	C	371	7%	88%	UC	495
	0.42	80	25	21	17	16	13.0	11.0	8.4	F	149	43%	96%	F	220	22%	98%	C	276	14%	96%	C	354	8%	90%	XC	472

NOTE: [1]SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. [2]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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Tips sized up to 110-06 verified on Phase Doppler Particle Analyzer (PDPA); tips sized over 110-06 verified on Malvern.

- Fine (F)
- Medium (M)
- Coarse (C)
- Very Coarse (VC)
- Extremely Coarse (XC)
- 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.

110 -04 Nozzles

Flow	Boom	Sprayer Speed (on 20" spacing) @							ER110-04				#40281-04				SR110-04				#40287-04				MR110-04				#40291-04				DR110-04				#40286-04				UR110-04	
us gpm	psi	8GPA	10GPA	12.5	15GPA	20GPA	25GPA	30GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
0.28	**20**	11	8.4	6.7	5.6	4.2	3.4	2.8	M	240	18%	97%																														#40292-04
0.32	**25**	13	9.4	7.5	6.3	4.7	3.8	3.1	M	232	20%	97%	C	330	9%	93%																									
0.35	**30**	14	10	8.2	6.9	5.1	4.1	3.4	M	225	22%	97%	C	314	11%	94%	VC	416	5%	84%	XC	510	3%	69%																	
0.37	**35**	15	11	8.9	7.4	5.6	4.4	3.7	M	220	23%	97%	C	300	12%	95%	VC	395	6%	87%	XC	488	4%	73%	UC	621															
0.40	**40**	16	12	10	7.9	5.9	4.8	4.0	F	215	24%	96%	C	288	14%	95%	C	377	7%	89%	VC	469	4%	76%	UC	601															
0.42	**45**	17	13	10	8.4	6.3	5.0	4.2	F	210	25%	96%	C	278	15%	96%	C	361	8%	91%	VC	453	5%	78%	UC	583															
0.45	**50**	18	13	11	8.9	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	**65**	20	15	12	10	7.6	6.1	5.0	F	196	29%	96%	M	246	18%	97%	C	310	10%	94%	C	401	6%	84%	UC	527															
0.53	**70**	21	16	13	10	7.9	6.3	5.2	F	194	29%	95%	M	239	19%	97%	C	300	10%	95%	C	391	6%	85%	UC	516															
0.57	**80**	22	17	13	11	8.4	6.7	5.6	F	189	30%	95%	M	228	20%	97%	C	282	11%	96%	C	372	7%	87%	UC	496															

110 -05 Nozzles

Flow	Boom	Sprayer Speed (on 20" spacing) @							ER110-05				#40281-05				SR110-05				#40287-05				MR110-05				#40291-05				DR110-05				#40286-05				UR110-05	
us gpm	psi	10GPA	12.5	15GPA	18GPA	20GPA	25GPA	30GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
0.35	**20**	11	8.4	7.0	5.8	5.3	4.2	3.5	M	248	18%	95%																														#40292-05
0.40	**25**	12	9.4	7.8	6.5	5.9	4.7	3.9	M	237	20%	95%	C	377	7%	89%																									
0.43	**30**	13	10	8.6	7.1	6.4	5.1	4.3	M	228	22%	95%	C	355	8%	91%	XC	486	3%	72%	XC	530	2%	63%																	
0.47	**35**	14	11	9.3	7.7	6.9	5.6	4.6	M	220	24%	95%	C	338	10%	93%	XC	464	4%	75%	XC	516	2%	66%	UC	638															
0.50	**40**	15	12	10	8.3	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	8.8	7.9	6.3	5.3	F	208	27%	95%	C	309	12%	94%	VC	428	5%	80%	XC	492	3%	70%	UC	605															
0.56	**50**	17	13	11	9.2	8.3	6.6	5.5	F	203	28%	95%	C	296	13%	95%	VC	412	6%	82%	XC	482	3%	72%	UC	592															
0.61	**60**	18	15	12	10	9.1	7.3	6.1	F	194	30%	95%	C	275	15%	96%	C	386	7%	85%	XC	465	3%	74%	UC	570															
0.64	**65**	19	15	13	11	10	7.6	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	7.9	6.5	F	187	32%	95%	M	257	16%	96%	C	364	7%	87%	VC	451	4%	76%	UC	551															
0.71	**80**	21	17	14	12	11	8.4	7.0	F	180	34%	95%	M	242	17%	97%	C	344	8%	88%	VC	438	4%	78%	UC	536															

110 -06 Nozzles

Flow	Boom	Sprayer Speed (on 20" spacing) @							ER110-06				#40281-06				SR110-06				#40287-06				MR110-06				#40291-06				DR110-06				#40286-06				UR110-06	
us gpm	psi	10GPA	12.5	15GPA	18GPA	20GPA	30GPA	35GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
0.42	**20**	13	10	8.4	7.0	6.3	4.2	3.6	C	282	14%	94%																														#40292-06
0.47	**25**	14	11	9.4	7.8	7.0	4.7	4.0	M	270	16%	94%																														
0.52	**30**	15	12	10	8.6	7.7	5.1	4.4	M	261	18%	94%	VC	416	6%	84%																										
0.56	**35**	17	13	11	9.3	8.3	5.6	4.8	M	253	19%	94%	C	392	7%	87%	XC	490	4%	71%	XC	546	2%	61%	UC	652															
0.60	**40**	18	14	12	10	8.9	5.9	5.1	M	246	20%	94%	C	371	8%	89%	XC	474	4%	74%	XC	529	2%	64%	UC	633															
0.64	**45**	19	15	13	11	10	6.3	5.4	M	240	21%	95%	C	353	9%	90%	VC	461	4%	76%	XC	514	3%	66%	UC	617															
0.67	**50**	20	16	13	11	10	6.6	5.7	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	7.3	6.2	M	225	24%	95%	C	308	12%	93%	VC	427	5%	81%	XC	478	3%	71%	UC	580															
0.76	**65**	23	18	15	13	11	7.6	6.5	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	7.9	6.7	F	217	25%	95%	C	284	13%	94%	VC	409	5%	83%	XC	459	3%	74%	UC	560															
0.85	**80**	25	20	17	14	13	8.4	7.2	F	211	27%	95%	M	264	14%	95%	C	394	6%	85%	VC	442	4%	75%	UC	544															

110 -08 Nozzles

Flow	Boom	Sprayer Speed (on 20" spacing) @							ER110-08				#40281-08				SR110-08				#40287-08				MR110-08				#40291-08				DR110-08				#40286-08				UR110-08	
us gpm	psi	15GPA	18GPA	20GPA	25GPA	30GPA	35GPA	40GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
0.57	**20**	11	9.3	8.4	6.7	5.6	4.8	4.2	C	327	14%	91%																														#40292-08
0.63	**25**	13	10	9.4	7.5	6.3	5.4	4.7	C	307	16%	92%																														
0.69	**30**	14	11	10	8.2	6.9	5.9	5.1	C	290	17%	93%	XC	453	6%	67%																										
0.75	**35**	15	12	11	8.9	7.4	6.4	5.6	M	276	19%	94%	XC	429	7%	71%	UC	506	5%	57%	UC	590	3%	44%	UC	675															
0.80	**40**	16	13	12	10	7.9	6.8	5.9	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	8.4	7.2	6.3	M	254	21%	95%	XC	390	8%	77%	XC	464	6%	64%	UC	551	4%	49%	UC	632															
0.89	**50**	18	15	13	11	8.9	7.6	6.6	M	244	22%	95%	VC	374	9%	79%	XC	446	6%	67%	UC	534	4%	51%	UC	614															
0.98	**60**	19	16	15	12	10	8.3	7.3	F	228	23%	96%	C	346	10%	82%	XC	416	7%	70%	UC	506	4%	55%	UC	585															
1.02	**65**	20	17	15	12	10	8.7	7.6	F	221	24%	96%	C	334	10%	83%	XC	403	7%	72%	UC	493	5%	56%	UC	573															
1.06	**70**	21	17	16	13	10	9.0	7.9	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	8.4	F	202	26%	97%	C	302	11%	86%	VC	369	8%	76%	XC	461	5%	60%	UC	543															

110 -10 Nozzles

Flow	Boom	Sprayer Speed (on 20" spacing) @							ER110-10				#40281-10				SR110-10				#40287-10				MR110-10				#40291-10				DR110-10				#40286-10				UR110-10	
us gpm	psi	15GPA	18GPA	20GPA	25GPA	30GPA	40GPA	50GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
0.71	**20**	14	12	11	8.4	7.0	5.3	4.2	VC	362	10%	88%																														#40292-10
0.79	**25**	16	13	12	9.4	7.8	5.9	4.7	C	341	12%	89%																														
0.87	**30**	17	14	13	10	8.6	6.4	5.1	C	325	14%	90%	XC	470	6%	62%																										
0.94	**35**	19	15	14	11	9.3	6.9	5.6	C	310	15%	91%	XC	445	7%	67%	UC	499	5%	56%	UC	596	5%	57%	UC	682															
1.00	**40**	20	17	15	12	10	7.4	5.9	C	298	17%	92%	XC	424	7%	70%	XC	478	5%	59%	UC	584	5%	55%	UC	658															
1.06	**45**	21	18	16	13	11	7.9	6.3	C	287	18%	92%	XC	405	8%	73%	XC	459	5%	62%	UC	574	5%	53%	UC	637															
1.12	**50**	22	18	17	13	11	8.4	6.6	M	277	19%	93%	XC	388	8%	75%	XC	442	6%	64%	UC	565	6%	51%	UC	620															
1.22	**60**	24	20	18	15	12	9.1	7.3	M	260	21%	94%	VC	358	9%	79%	XC	413	6%	67%	UC	550	6%	48%	UC	590															
1.27	**65**	25	21	19	15	13	10	7.6	M	253	21%	94%	C	345	10%	80%	XC	400	6%	69%	UC	543	6%	47%	UC	577															
1.32	**70**	26	22	20	16	13	10	7.9	M	246	22%	94%	C	333	10%	81%	XC	388	7%	70%	UC	537	6%	46%	UC	566															
1.41	**80**	28	23	21	17	14	11	8.4	F	234	23%	94%	C	311	11%	83%	VC	367	7%	72%	UC	525	6%	43%	UC	546															

110 -125 Nozzles

Flow	Boom	Sprayer Speed (on 20" spacing) @							ER110-125				#40281-125				SR110-125				#40287-125				MR110-125				#40291-125				DR110-125				#40286-125			
us gpm	psi	20GPA	25GPA	30GPA	35GPA	40GPA	45GPA	50GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
0.99	**25**	15	12	10	8.4	7.3	6.5	5.9	XC	421	9%	70%																												
1.08	**30**	16	13	11	9.2	8.0	7.1	6.4	XC	400	10%	74%	UC	501	4%	56%																								
1.17	**35**	17	14	12	10	8.7	7.7	6.9	XC	383	10%	76%	XC	471	5%	62%	UC	618	4%	39%	UC	647	3%	35%																
1.25	**40**	19	15	12	11	9.3	8.3	7.4	VC	369	11%	79%	XC	445	5%	66%	UC	593	4%	43%	UC	630	4%	37%																
1.33	**45**	20	16	13	11	10	8.8	7.9	VC	357	11%	80%	XC	423	6%	70%	UC	571	4%	47%	UC	616	4%	39%																
1.40	**50**	21	17	14	12	10	9.2	8.3	C	346	12%	82%	XC	403	6%	72%	UC	552	5%	49%	UC	603	4%	40%																
1.53	**60**	23	18	15	13	11	10	9.1	C	336	12%	83%	XC	386	7%	74%	UC	535	5%	52%	UC	592	4%	42%																
1.59	**65**	24	19	16	14	12	11	10	C	319	13%	85%	VC	355	7%	78%	UC	506	5%	55%	UC	572	5%	44%																
1.65	**70**	25	20	16	14	12	11	10	C	312	13%	85%	C	342	8%	79%	UC	493	5%	57%	UC	563	5%	45%																
1.77	**80**	26	21	18	15	13	12	11	C	305	14%	86%	C	329	8%	80%	UC	481	6%	58%	UC	555	5%	46%																

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.

	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER110-15		#40281-15		SR110-15		#40287-15		MR110-15		#40291-15		DR110-15		#40286-15	
	us gpm	psi	25GPA	30GPA	35GPA	40GPA	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	8.8	7.8	7.0	6.4	XC	416	10%	68%												
	1.30	**30**	15	13	11	10	8.6	7.7	7.0	XC	398	10%	72%	UC	538	5%	51%								
110 -15 Nozzles	1.40	**35**	17	14	12	10	9.3	8.3	7.6	XC	383	11%	74%	UC	515	5%	55%	UC	590	4%	43%	UC	641	4%	43%
	1.50	**40**	18	15	13	11	10	8.9	8.1	VC	370	12%	76%	UC	496	6%	58%	UC	574	4%	45%	UC	624	4%	46%
	1.59	**45**	19	16	14	12	11	10	8.6	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	9.1	C	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	C	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	C	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	C	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	C	302	15%	84%	XC	393	8%	72%	UC	493	5%	56%	UC	540	5%	58%

	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER110-20		#40281-20		SR110-20		#40287-20		MR110-20		#40291-20	
	us gpm	psi	30GPA	35GPA	40GPA	45GPA	50GPA	55GPA	60GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	1.58	**25**	16	13	12	10	9.4	8.5	7.8	XC	473	7%	60%								
	1.73	**30**	17	15	13	11	10	9.4	8.6	XC	453	8%	64%								
110 -20 Nozzles	1.87	**35**	19	16	14	12	11	10	9.3	XC	437	8%	66%	UC	497	6%	59%	UC	574	5%	45%
	2.00	**40**	20	17	15	13	12	11	10	XC	422	9%	68%	XC	479	6%	62%	UC	557	5%	48%
	2.12	**45**	21	18	16	14	13	11	11	XC	410	9%	70%	XC	463	7%	65%	UC	542	5%	50%
	2.24	**50**	22	19	17	15	13	12	11	XC	399	9%	72%	XC	449	7%	67%	UC	529	6%	52%
	2.45	**60**	24	21	18	16	15	13	12	XC	379	10%	74%	XC	424	8%	70%	UC	506	6%	55%
	2.55	**65**	25	22	19	17	15	14	13	VC	370	10%	75%	XC	413	8%	72%	UC	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	C	348	11%	78%	XC	385	8%	75%	XC	470	7%	59%

	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER110-25		#40281-25		SR110-25		#40287-25	
	us gpm	psi	35GPA	40GPA	45GPA	50GPA	55GPA	60GPA	70GPA	Class	VMD	<141	<600	Class	VMD	<141	<600
	1.98	**25**	17	15	13	12	11	10	8.4	XC	472	7%	60%				
	2.17	**30**	18	16	14	13	12	11	9.2	XC	453	7%	65%				
110 -25 Nozzles	2.34	**35**	20	17	15	14	13	12	10	XC	437	7%	68%	UC	484	6%	59%
	2.50	**40**	21	19	17	15	14	12	11	XC	422	7%	71%	XC	468	6%	62%
	2.65	**45**	23	20	18	16	14	13	11	XC	410	8%	73%	XC	453	7%	64%
	2.80	**50**	24	21	18	17	15	14	12	XC	399	8%	74%	XC	441	7%	66%
	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%
	3.31	**70**	28	25	22	20	18	16	14	VC	364	8%	79%	XC	400	8%	71%
	3.54	**80**	30	26	23	21	19	18	15	C	350	8%	81%	XC	384	8%	73%

	Flow	Boom	Sprayer Speed (on 20" spacing) @							ER110-30		#40281-30	
	us gpm	psi	40GPA	50GPA	60GPA	70GPA	80GPA	90GPA	100	Class	VMD	<141	<600
	2.37	**25**	18	14	12	10	8.8	7.8	7.0	UC	484	6%	58%
	2.60	**30**	19	15	13	11	10	8.6	7.7	XC	466	6%	61%
110 -30 Nozzles	2.81	**35**	21	17	14	12	10	9.3	8.3	XC	451	7%	63%
	3.00	**40**	22	18	15	13	11	10	8.9	XC	437	7%	65%
	3.18	**45**	24	19	16	14	12	11	10	XC	425	8%	67%
	3.35	**50**	25	20	17	14	12	11	10	XC	415	8%	68%
	3.67	**60**	27	22	18	16	14	12	11	XC	396	9%	70%
	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	367	9%	73%

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
****** 90% Drift Reduction**	DR110-03	1.0 - 1.5 BAR
	DR110-05	1.0 - 1.5 BAR
	DR110-06	1.0 - 3.0 BAR
	MR110-05	1.0 - 1.5 BAR
	MR110-06	1.0 - 1.5 BAR

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)

LERAP RATING	Nozzle	Pressure Range
***** 75% Drift Reduction**	DR110-025	1.0 - 2.5 BAR
	DR110-03	1.6 - 3.0 BAR
	DR110-04	1.0 - 5.0 BAR
	DR110-05	1.6 - 5.0 BAR
	DR110-06	3.1 - 5.0 BAR
	MR110-04	1.0 - 2.5 BAR
	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
**** 50% Drift Reduction**	DR110-025	2.6 - 3.5 BAR
	DR110-03	3.1 - 5.0 BAR
	MR110-04	2.6 - 3.5 BAR
	SR110-05	1.6 - 3.0 BAR

For the updated list on COMBO-JET 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 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)*
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.

- Fine (F)
- Medium (M)
- Coarse (C)
- Very Coarse (VC)
- Extremely Coarse (XC)
- 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.

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)**

Nozzle Size & Angle	Flow Rate USGPM	Boom PSI	Tip psi	Application Rate in US Gallons / Acre on 20" Nozzle Spacing @ Sprayer Speed in Miles / Hour				Spray Classification; VMD (Droplet Size in µ); %<141µ (Drift %); %<600µ (Small Droplets)															
								ER80° Series				SR80° Series				MR80° Series				DR80° Series			
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 2GPA	3GPA	4GPA	5GPA	ER80-005 Class	VMD	<141	<600	#40270-005 Class	VMD	<141	<600	SR80-005 Class	VMD	<141	<600	#40288-005 Class	VMD	<141	<600	MR80-005 Class	VMD	<141	<600	#40290-005 Class	VMD	<141	<600	DR80-005 Class	VMD	<141	<600	#40280-005 Class	VMD	<141	<600
80 -005 Nozzles	0.035	20	20	1.3-5.3	0.9-3.5	0.7-2.6	0.5-2.1	F	167	33%	100%													M	261	11%	99%					C	311	6%	100%				
	0.040	25	25	1.5-5.9	1-3.9	0.7-2.9	0.6-2.3	F	157	40%	100%													M	236	17%	98%					C	276	11%	100%				
	0.043	30	30	1.6-6.4	1.1-4.3	0.8-3.2	0.7-2.6	F	149	46%	100%													M	217	22%	97%					M	250	16%	100%				
	0.047	35	35	1.7-6.9	1.2-4.6	0.9-3.5	0.7-2.8	F	142	51%	100%													M	217	22%	97%					M	250	16%	100%				
	0.050	40	40	1.9-7.4	1.3-5	0.9-3.7	0.8-3	F	137	55%	100%													F	201	26%	96%					M	230	19%	100%				
	0.053	45	45	2-7.9	1.3-5.3	1-3.9	0.8-3.2	F	132	59%	100%													F	189	30%	95%					F	213	23%	100%				
	0.056	50	50	2.1-8.3	1.4-5.5	1.1-4.2	0.8-3.3	F	128	63%	100%													F	178	33%	94%					F	200	25%	100%				
	0.061	60	60	2.3-9.1	1.5-6.1	1.1-4.5	0.9-3.6	F	121	68%	100%													F	161	39%	93%					F	178	30%	100%				
	0.064	65	65	2.4-9.5	1.6-6.3	1.2-4.7	1-3.8	F	118	71%	100%													F	154	41%	92%					F	169	33%	100%				
	0.066	70	70	2.5-9.8	1.6-6.5	1.2-4.9	1-3.9	F	116	73%	100%													F	148	44%	91%					F	161	35%	100%				
	0.071	80	80	2.8-11	1.8-7	1.3-5.3	1.1-4.2	F	111	78%	100%													F	138	48%	90%					F	148	38%	100%				
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 2GPA	3GPA	4GPA	5GPA	ER80-0067 Class	VMD	<141	<600	#40270-0067 Class	VMD	<141	<600	SR80-0067 Class	VMD	<141	<600	#40288-0067 Class	VMD	<141	<600	MR80-0067 Class	VMD	<141	<600	#40290-0067 Class	VMD	<141	<600	DR80-0067 Class	VMD	<141	<600	#40280-0067 Class	VMD	<141	<600
80 -0067 Nozzles	0.047	20	20	1.8-7	1.2-4.7	0.9-3.5	0.7-2.8	F	199	21%	100%																												
	0.053	25	25	2-7.9	1.3-5.2	1-3.9	0.8-3.1	F	183	29%	100%													M	231	18%	99%					C	337	6%	100%				
	0.058	30	30	2.2-8.6	1.4-5.7	1.1-4.3	0.9-3.4	F	171	35%	100%													F	211	24%	98%					C	308	9%	100%				
	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%					C	285	11%	100%				
	0.067	40	40	2.5-9.9	1.7-6.6	1.3-5	1-4	F	153	45%	100%													F	182	33%	96%					M	267	13%	100%				
	0.071	45	45	2.8-11	1.8-7	1.3-5.3	1.1-4.2	F	147	49%	100%													F	171	37%	95%					M	252	15%	100%				
	0.075	50	50	2.8-11	1.9-7.4	1.4-5.6	1.1-4.4	F	141	52%	100%													F	162	40%	94%					M	239	17%	100%				
	0.082	60	60	3-12	2-8.1	1.5-6.1	1.2-4.9	F	131	58%	100%													F	148	46%	93%					M	218	20%	100%				
	0.085	65	65	3.3-13	2.1-8.5	1.6-6.3	1.3-5.1	F	128	61%	100%													F	142	49%	92%					F	210	21%	100%				
	0.089	70	70	3.3-13	2.2-8.8	1.7-6.6	1.3-5.3	F	124	63%	100%													F	136	51%	91%					F	202	22%	100%				
	0.095	80	80	3.5-14	2.4-9.4	1.8-7	1.4-5.6	F	118	68%	100%													F	127	55%	90%					F	189	24%	100%				
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 2GPA	3GPA	4GPA	5GPA	ER80-01 Class	VMD	<141	<600	#40270-01 Class	VMD	<141	<600	SR80-01 Class	VMD	<141	<600	#40288-01 Class	VMD	<141	<600	MR80-01 Class	VMD	<141	<600	#40290-01 Class	VMD	<141	<600	DR80-01 Class	VMD	<141	<600	#40280-01 Class	VMD	<141	<600
80 -01 Nozzles	0.07	20	20	2.5-10	1.8-7	1.3-5.2	1.1-4.2	F	176	28%	100%	C	293	8%	97%																								
	0.08	25	25	3-12	2-7.8	1.5-5.9	1.2-4.7	F	165	35%	100%	M	259	15%	97%																								
	0.09	30	30	3.3-13	2.2-8.6	1.6-6.4	1.3-5.1	F	156	41%	100%	M	234	20%	97%					M	219	23%	97%					C	312	10%	94%								
	0.09	35	35	3.5-14	2.3-9.2	1.7-6.9	1.4-5.5	F	149	45%	100%	F	215	25%	97%					F	204	27%	97%					C	292	12%	95%								
	0.10	40	40	3.8-15	2.5-9.9	1.9-7.4	1.5-5.9	F	144	49%	100%	F	199	29%	97%					F	192	30%	97%					C	275	14%	96%								
	0.11	45	45	4-16	2.5-10	2-7.9	1.6-6.3	F	139	53%	100%	F	187	33%	97%					F	182	33%	97%					M	261	15%	97%								
	0.11	50	50	4.3-17	2.8-11	2.1-8.3	1.7-6.6	F	135	56%	100%	F	176	36%	98%					F	173	36%	97%					M	249	17%	98%								
	0.12	60	60	4.5-18	3-12	2.3-9.1	1.8-7.3	F	128	61%	100%	F	159	41%	98%					F	159	40%	97%					M	230	19%	99%								
	0.13	65	65	4.8-19	3.3-13	2.4-9.4	1.9-7.6	F	125	64%	100%	F	152	44%	98%					F	153	42%	97%					M	221	20%	100%								
	0.13	70	70	5-20	3.3-13	2.5-9.8	2-7.8	F	122	66%	100%	F	146	46%	98%					F	148	44%	97%					F	214	21%	101%								
	0.14	80	80	5.3-21	3.5-14	2.5-10	2.1-8.4	F	117	70%	100%	F	135	50%	98%					F	139	48%	97%					F	202	23%	102%								
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 3GPA	4GPA	5GPA	6GPA	ER80-015 Class	VMD	<141	<600	#40270-015 Class	VMD	<141	<600	SR80-015 Class	VMD	<141	<600	#40288-015 Class	VMD	<141	<600	MR80-015 Class	VMD	<141	<600	#40290-015 Class	VMD	<141	<600	DR80-015 Class	VMD	<141	<600	#40280-015 Class	VMD	<141	<600
80 -015 Nozzles	0.11	20	20	2.5-10	2-7.8	1.6-6.3	1.3-5.2	F	200	21%	100%																												
	0.12	25	25	3-12	2.2-8.8	1.8-7	1.5-5.8	F	189	25%	100%	C	287	12%	94%																								
	0.13	30	30	3.3-13	2.4-9.6	1.9-7.7	1.6-6.4	F	180	29%	100%	M	264	16%	95%					C	324	10%	94%					VC	419	4%	87%								
	0.14	35	35	3.5-14	2.5-10	2.1-8.3	1.7-6.9	F	173	32%	100%	M	245	19%	96%					C	302	12%	95%					VC	398	5%	89%								
	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%					C	285	14%	96%					C	381	6%	90%								
	0.16	45	45	4-16	3-12	2.4-9.4	2-7.8	F	162	37%	100%	M	219	24%	97%					M	270	16%	97%					C	367	6%	91%								
	0.17	50	50	4.3-17	3-12	2.5-9.9	2.1-8.3	F	158	39%	100%	F	208	26%	97%					M	257	17%	97%					C	354	7%	92%								
	0.18	60	59	4.5-18	3.5-14	2.8-11	2.3-9.1	F	151	42%	100%	F	191	30%	97%					M	237	19%	98%					C	333	8%	94%								
	0.19	65	64	4.8-19	3.5-14	2.8-11	2.4-9.4	F	148	44%	100%	F	184	31%	97%					M	228	21%	98%					C	325	8%	94%								
	0.20	70	69	5-20	3.8-15	3-12	2.5-9.8	F	145	45%	100%	F	178	33%	98%					M	221	22%	99%					C	317	9%	95%								
	0.21	80	79	5.3-21	4-16	3.3-13	2.5-10	F	140	48%	100%	F	168	35%	98%					F	208	23%	99%					C	303	10%	95%								
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 3GPA	4GPA	5GPA	6GPA	ER80-02 Class	VMD	<141	<600	#40270-02 Class	VMD	<141	<600	SR80-02 Class	VMD	<141	<600	#40288-02 Class	VMD	<141	<600	MR80-02 Class	VMD	<141	<600	#40290-02 Class	VMD	<141	<600	DR80-02 Class	VMD	<141	<600	#40280-02 Class	VMD	<141	<600
80 -02 Nozzles	0.14	20	20	3.5-14	2.5-10	2.1-8.3	1.7-6.9	F	185	28%	100%																												
	0.16	25	25	4-16	3-12	2.3-9.3	2-7.8	F	177	31%	100%	C	275	12%	94%																								
	0.17	30	29	4.3-17	3.3-13	2.5-10	2.1-8.5	F	171	34%	100%	M	258	15%	95%					C	328	8%	94%					XC	456	3%	80%								
	0.19	35	34	4.5-18	3.5-14	2.8-11	2.3-9.2	F	166	36%	100%	M	245	18%	96%					C	312	10%	94%					VC	437	4%	82%								
	0.20	40	39	5-20	3.8-15	3-12	2.5-9.8	F	162	38%	100%	M	235	20%	96%					C	299	11%	94%					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	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%					C	279	13%	95%					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	15%	95%					C	376	6%	88%								
	0.25	65	64	6.3-25	4.8-19	3.8-15	3.3-13	F	148	45%	100%	F	199	28%	98%					M	257	16%	95%					C	368	6%	89%								
	0.26	70	69	6.5-26	4.8-19	4-16	3.3-13	F	146	47%	100%	F	194	29%	98%					M	251	17%	95%					C	361	7%	89%								
	0.28	80	79	7-28	5.3-21	4.3-17	3.5-14	F	142	49%	100%	F	186	32%	98%					M	240	19%	95%					C	347	7%	90%								

NOTE: [1]SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. [2]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 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.

- Fine (F)
- Medium (M)
- Coarse (C)
- Very Coarse (VC)
- Extremely Coarse (XC)
- 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.

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)**

80 -025 Nozzles

Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 3GPA	4GPA	5GPA	6GPA	ER80-025 Class	VMD	#40270-025 <141	<600	SR80-025 Class	VMD	#40288-025 <141	<600	MR80-025 Class	VMD	#40290-025 <141	<600	DR80-025 Class	VMD	#40280-025 <141	<600
0.17	**20**	19	4.3-17	3.3-13	2.5-10	2.2-8.6	M	234	17%	100%												
0.20	**25**	24	4.8-19	3.5-14	3-12	2.4-9.7	M	220	20%	100%	C	318	9%	91%								
0.21	**30**	29	5.3-21	4-16	3.3-13	2.8-11	F	210	23%	100%	C	299	11%	92%	VC	429	4%	80%	XC	463	3%	77%
0.23	**35**	34	5.8-23	4.3-17	3.5-14	2.8-11	F	202	25%	100%	C	283	13%	93%	VC	405	5%	83%	VC	446	4%	79%
0.25	**40**	39	6-24	4.5-18	3.8-15	3-12	F	195	28%	100%	M	270	15%	94%	C	386	6%	84%	VC	432	4%	80%
0.26	**45**	44	6.5-26	4.8-19	4-16	3.3-13	F	189	29%	100%	M	260	16%	95%	C	370	7%	86%	VC	420	5%	82%
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%
0.30	**60**	58	7.5-30	5.5-22	4.5-18	3.8-15	F	175	34%	100%	M	235	20%	96%	C	333	9%	88%	C	393	6%	84%
0.31	**65**	63	7.8-31	5.8-23	4.8-19	4-16	F	171	35%	100%	M	228	21%	96%	C	324	9%	89%	C	386	6%	85%
0.33	**70**	68	8-32	6-24	4.8-19	4-16	F	168	36%	100%	M	223	22%	97%	C	315	10%	90%	C	379	7%	86%
0.35	**80**	78	8.8-35	6.5-26	5.3-21	4.3-17	F	162	38%	99%	F	213	24%	97%	C	300	11%	91%	C	367	7%	87%

80 -03 Nozzles

Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 4GPA	5GPA	6.0GPA	8GPA	ER80-03 Class	VMD	#40270-03 <141	<600	SR80-03 Class	VMD	#40288-03 <141	<600	MR80-03 Class	VMD	#40290-03 <141	<600	DR80-03 Class	VMD	#40280-03 <141	<600
0.21	**20**	19	3.8-15	3-12	2.5-10	1.9-7.7	M	235	17%	99%												
0.23	**25**	24	4.3-17	3.5-14	3-12	2.2-8.6	M	224	20%	99%	C	373	7%	88%								
0.26	**30**	29	4.8-19	3.8-15	3.3-13	2.4-9.5	F	215	22%	99%	C	349	9%	89%	VC	437	4%	80%	XC	485	3%	71%
0.28	**35**	34	5-20	4-16	3.5-14	2.5-10	F	208	24%	99%	C	330	11%	90%	VC	414	5%	83%	XC	466	3%	74%
0.29	**40**	39	5.5-22	4.3-17	3.8-15	2.8-11	F	203	26%	99%	C	314	12%	91%	VC	395	6%	85%	VC	451	4%	76%
0.31	**45**	43	5.8-23	4.8-19	3.8-15	3-12	F	198	27%	99%	C	300	13%	91%	C	378	7%	86%	VC	437	5%	78%
0.33	**50**	48	6-24	5-20	4-16	3-12	F	193	29%	99%	C	289	14%	92%	C	364	8%	87%	VC	426	5%	80%
0.36	**60**	58	6.8-27	5.3-21	4.5-18	3.3-13	F	186	31%	99%	M	270	16%	93%	C	341	9%	89%	VC	406	6%	82%
0.38	**65**	63	7-28	5.5-22	4.8-19	3.5-14	F	183	32%	99%	M	262	17%	93%	C	332	10%	90%	C	398	6%	83%
0.39	**70**	68	7.3-29	5.8-23	4.8-19	3.5-14	F	180	33%	99%	M	255	18%	93%	C	323	10%	90%	C	391	7%	84%
0.42	**80**	77	7.8-31	6.3-25	5.3-21	3.8-15	F	175	35%	99%	M	242	19%	94%	C	308	11%	91%	C	378	7%	85%

80 -04 Nozzles

Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 4GPA	5GPA	7.5	10GPA	ER80-04 Class	VMD	#40270-04 <141	<600	SR80-04 Class	VMD	#40288-04 <141	<600	MR80-04 Class	VMD	#40290-04 <141	<600	DR80-04 Class	VMD	#40280-04 <141	<600
0.27	**20**	19	5-20	4-16	2.8-11	2-8.1	M	254	16%	99%												
0.31	**25**	23	5.8-23	4.5-18	3-12	2.3-9.1	M	242	18%	99%	C	377	5%	85%								
0.34	**30**	28	6.3-25	5-20	3.3-13	2.5-10	M	233	20%	99%	C	356	6%	86%	VC	428	5%	79%	XC	551	2%	60%
0.36	**35**	33	6.8-27	5.5-22	3.5-14	2.8-11	M	226	22%	99%	C	339	8%	88%	VC	409	6%	81%	XC	531	2%	64%
0.39	**40**	37	7.3-29	5.8-23	3.8-15	3-12	M	219	23%	99%	C	323	9%	89%	C	393	7%	83%	XC	515	3%	67%
0.41	**45**	42	7.5-30	6-24	4-16	3-12	F	214	24%	99%	C	310	10%	90%	C	379	8%	84%	XC	500	3%	69%
0.43	**50**	47	8-32	6.5-26	4.3-17	3.3-13	F	209	25%	99%	C	298	11%	90%	C	367	8%	86%	XC	488	3%	71%
0.47	**60**	56	8.8-35	7-28	4.8-19	3.5-14	F	201	27%	99%	C	277	13%	91%	C	348	10%	87%	XC	467	4%	74%
0.49	**65**	61	9.3-37	7.3-29	5-20	3.8-15	F	198	28%	99%	M	268	14%	92%	C	340	10%	88%	XC	458	4%	75%
0.51	**70**	66	9.5-38	7.5-30	5-20	3.8-15	F	195	29%	99%	M	260	14%	92%	C	332	11%	89%	VC	450	5%	76%
0.55	**80**	75	10-41	8.3-33	5.5-22	4-16	F	189	30%	99%	M	245	16%	93%	C	319	12%	90%	VC	436	5%	78%

80 -05 Nozzles

Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 6GPA	8GPA	10GPA	12GPA	ER80-05 Class	VMD	#40270-05 <141	<600	SR80-05 Class	VMD	#40288-05 <141	<600	MR80-05 Class	VMD	#40290-05 <141	<600	DR80-05 Class	VMD	#40280-05 <141	<600
0.34	**20**	18	4.3-17	3-12	2.5-10	2.1-8.3	C	303	10%	95%												
0.38	**25**	23	4.8-19	3.5-14	2.8-11	2.3-9.3	C	287	13%	95%	VC	424	4%	80%								
0.41	**30**	27	5-20	3.8-15	3-12	2.5-10	C	274	15%	95%	VC	400	6%	82%	XC	517	3%	65%	XC	587	1%	53%
0.45	**35**	32	5.5-22	4.3-17	3.3-13	2.8-11	M	263	17%	95%	C	380	8%	83%	XC	496	3%	69%	XC	567	2%	57%
0.48	**40**	36	6-24	4.5-18	3.5-14	3-12	M	255	19%	95%	C	362	9%	85%	XC	478	4%	71%	XC	551	2%	60%
0.50	**45**	41	6.3-25	4.8-19	3.8-15	3-12	M	247	20%	95%	C	347	10%	86%	VC	463	4%	74%	XC	536	2%	63%
0.53	**50**	45	6.5-26	5-20	4-16	3.3-13	M	241	21%	95%	C	333	11%	87%	VC	450	5%	75%	XC	524	3%	65%
0.58	**60**	54	7.3-29	5.5-22	4.3-17	3.5-14	M	230	23%	95%	C	309	13%	88%	VC	428	5%	78%	XC	503	3%	68%
0.61	**65**	59	7.5-30	5.8-23	4.5-18	3.8-15	M	225	24%	95%	C	299	13%	89%	VC	419	6%	79%	XC	494	3%	69%
0.63	**70**	63	7.8-31	5.8-23	4.8-19	4-16	M	221	25%	95%	C	289	14%	89%	C	410	6%	80%	XC	486	4%	71%
0.67	**80**	72	8.3-33	6.3-25	5-20	4.3-17	F	214	27%	95%	C	271	15%	90%	C	396	7%	82%	VC	471	4%	73%

80 -06 Nozzles

Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 7.5	10GPA	12GPA	15GPA	ER80-06 Class	VMD	#40270-06 <141	<600	SR80-06 Class	VMD	#40288-06 <141	<600	MR80-06 Class	VMD	#40290-06 <141	<600	DR80-06 Class	VMD	#40280-06 <141	<600
0.40	**20**	17	4-16	3-12	2.5-9.8	2-7.8	C	331	11%	92%												
0.44	**25**	22	4.5-18	3.3-13	2.8-11	2.2-8.8	C	316	13%	92%	XC	456	3%	76%								
0.48	**30**	26	4.8-19	3.5-14	3-12	2.4-9.6	C	305	15%	91%	VC	435	4%	79%	XC	544	2%	61%	XC	613	1%	48%
0.52	**35**	30	5.3-21	4-16	3.3-13	2.5-10	C	295	17%	91%	VC	418	5%	81%	XC	524	3%	64%	XC	595	1%	52%
0.56	**40**	35	5.5-22	4.3-17	3.5-14	2.8-11	C	287	18%	91%	VC	404	6%	82%	XC	509	3%	67%	XC	579	2%	54%
0.59	**45**	39	6-24	4.5-18	3.8-15	3-12	C	281	19%	91%	C	392	7%	84%	XC	495	3%	69%	XC	566	2%	56%
0.63	**50**	43	6.3-25	4.8-19	3.8-15	3-12	C	275	21%	91%	C	382	7%	85%	XC	483	4%	71%	XC	555	2%	58%
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%	XC	535	3%	61%
0.71	**65**	57	7-28	5.3-21	4.5-18	3.5-14	M	260	23%	90%	C	357	9%	87%	VC	454	5%	75%	XC	527	3%	63%
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	519	3%	64%
0.79	**80**	70	7.8-31	6-24	5-20	4-16	M	249	26%	90%	C	338	10%	89%	VC	433	5%	78%	XC	506	3%	66%

80 -08 Nozzles

Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 12GPA	15GPA	18GPA	20GPA	ER80-08 Class	VMD	#40270-08 <141	<600	SR80-08 Class	VMD	#40288-08 <141	<600	MR80-08 Class	VMD	#40290-08 <141	<600	DR80-08 Class	VMD	#40280-08 <141	<600
0.56	**25**	20	3.5-14	2.8-11	2.3-9.3	2.1-8.3	VC	368	12%	86%												
0.62	**30**	24	3.8-15	3-12	2.5-10	2.3-9.1	C	345	14%	88%	UC	524	6%	52%								
0.67	**35**	28	4-16	3.3-13	2.8-11	2.5-9.9	C	326	16%	90%	UC	502	7%	57%								
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	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%	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%
1.01	**80**	63	6.3-25	5-20	4.3-17	3.8-15	F	242	26%	95%	XC	383	11%	75%	XC	442	10%	77%	UC	534	5%	66%

NOTE: [1]SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. [2]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)*
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.

- Fine (F)
- Medium (M)
- Coarse (C)
- Very Coarse (VC)
- Extremely Coarse (XC)
- 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.

	Flow	Boom	Tip	Sprayer Speed (on 20" spacing) @				ER80-10		#40270-10		SR80-10		#40288-10		MR80-10		#40290-10		DR80-10		#40280-10	
	us gpm	psi	psi	15GPA	18GPA	20GPA	25GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
80 -10 Nozzles	0.73	**30**	21	3.5-14	3-12	2.8-11	2.2-8.6	XC	450	9%	78%												
	0.79	**35**	25	4-16	3.3-13	3-12	2.3-9.3	XC	429	10%	80%	UC	538	6%	49%								
	0.84	**40**	28	4.3-17	3.5-14	3-12	2.5-10	XC	412	11%	81%	UC	520	6%	54%								
	0.89	**45**	32	4.5-18	3.8-15	3.3-13	2.8-11	VC	398	12%	82%	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	385	13%	83%	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	364	15%	85%	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	C	356	15%	85%	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	348	16%	86%	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	334	17%	87%	XC	424	9%	70%	XC	476	7%	72%	UC	550	6%	62%
	Flow	Boom	Tip	Sprayer Speed (on 20" spacing) @				ER80-125		#40270-125		SR80-125		#40288-125		MR80-125		#40290-125		DR80-125		#40280-125	
	us gpm	psi	psi	15GPA	18GPA	20GPA	25GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
80 -125 Nozzles	0.91	**35**	21	4.5-18	3.8-15	3.5-14	2.8-11	XC	451	9%	77%												
	0.97	**40**	24	4.8-19	4-16	3.5-14	3-12	XC	436	10%	78%	UC	535	6%	50%								
	1.03	**45**	27	5-20	4.3-17	3.8-15	3-12	XC	423	11%	80%	UC	520	6%	53%								
	1.09	**50**	30	5.5-22	4.5-18	4-16	3.3-13	XC	412	11%	81%	UC	508	7%	55%								
	1.19	**60**	36	6-24	5-20	4.5-18	3.5-14	VC	393	12%	83%	UC	486	8%	59%	UC	566	6%	59%	UC	605	4%	53%
	1.24	**65**	39	6.3-25	5-20	4.5-18	3.8-15	VC	385	13%	83%	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	C	377	13%	84%	XC	467	8%	62%	UC	551	6%	61%	UC	589	5%	55%
	1.38	**80**	48	6.8-27	5.8-23	5-20	4-16	C	364	14%	85%	XC	451	9%	64%	UC	538	7%	63%	UC	577	5%	57%
	Flow	Boom	Tip	Sprayer Speed (on 20" spacing) @				ER80-15		#40270-15		SR80-15		#40288-15		MR80-15		#40290-15		DR80-15		#40280-15	
	us gpm	psi	psi	18GPA	20GPA	25GPA	30GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
80 -15 Nozzles	1.08	**40**	21	4.5-18	4-16	3.3-13	2.8-11	XC	459	7%	76%												
	1.14	**45**	23	4.8-19	4.3-17	3.5-14	2.8-11	XC	444	8%	77%												
	1.20	**50**	26	5-20	4.5-18	3.5-14	3-12	XC	430	9%	78%	UC	572	5%	44%								
	1.32	**60**	31	5.5-22	5-20	4-16	3.3-13	XC	408	10%	79%	UC	550	6%	48%								
	1.37	**65**	34	5.8-23	5-20	4-16	3.5-14	XC	399	11%	80%	UC	540	6%	50%	UC	500	8%	68%	UC	625	3%	50%
	1.43	**70**	36	6-24	5.3-21	4.3-17	3.5-14	XC	390	12%	80%	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	VC	375	13%	81%	UC	515	6%	54%	XC	476	9%	71%	UC	602	3%	54%
	Flow	Boom	Tip	Sprayer Speed (on 20" spacing) @				ER80-20		#40270-20		SR80-20		#40288-20		MR80-20		#40290-20		DR80-20		#40280-20	
	us gpm	psi	psi	15GPA	20GPA	30GPA	40GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
80 -20 Nozzles	1.37	**50**	19	6.8-27	5-20	3.5-14	2.5-10	UC	520	6%	66%												
	1.50	**60**	23	7.5-30	5.5-22	3.8-15	2.8-11	UC	496	7%	69%	UC	587	5%	41%								
	1.56	**65**	24	7.8-31	5.8-23	3.8-15	3-12	UC	486	8%	70%	UC	577	5%	43%								
	1.62	**70**	26	8-32	6-24	4-16	3-12	XC	477	8%	71%	UC	568	5%	45%								
	1.73	**80**	30	8.5-34	6.5-26	4.3-17	3.3-13	XC	460	9%	73%	UC	551	5%	48%	UC	564	5%	58%	UC	628	3%	50%

NOTE: [1]SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. [2]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

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

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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 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.

- Fine (F)
- Medium (M)
- Coarse (C)
- Very Coarse (VC)
- Extremely Coarse (XC)
- 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.

Nozzle Size & Angle	Flow Rate USGPM	Boom PSI	Tip psi	Application Rate in US Gallons / Acre on 20" Nozzle Spacing @ Sprayer Speed in Miles / Hour				Spray Classification; VMD (Droplet Size in µ); %<141µ (Drift %); %<600µ (Small Droplets)															
								ER110° Series				SR110° Series				MR110° Series				DR110° Series				UR Series	
	Flow us gpm	Boom psi	Tip psi	2GPA	3GPA	4GPA	5GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
110 -01 Nozzles				Sprayer Speed (on 20" spacing) @				ER110-01				#40281-01													
	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	2.9-12	2-7.8	1.5-5.9	1.2-4.7	F	144	48%	100%														
	0.09	**30**	30	3.3-13	2.2-8.6	1.6-6.4	1.3-5.1	F	140	51%	100%														
	0.09	**35**	35	3.5-14	2.3-9.2	1.7-6.9	1.4-5.5	F	136	53%	100%														
	0.10	**40**	40	3.8-15	2.5-9.9	1.9-7.4	1.5-5.9	F	133	56%	100%														
	0.11	**45**	45	3.9-16	2.5-10	2.0-7.9	1.6-6.3	F	131	58%	100%														
	0.11	**50**	50	4.2-17	2.8-11	2.1-8.3	1.7-6.6	F	128	59%	100%														
	0.12	**60**	60	4.6-18	3.0-12	2.3-9.1	1.8-7.3	F	124	62%	100%														
	0.13	**65**	65	4.7-19	3.2-13	2.4-9.4	1.9-7.6	F	123	63%	100%														
	0.13	**70**	70	4.9-20	3.3-13	2.5-9.8	2.0-7.8	F	121	65%	100%														
	0.14	**80**	80	5.3-21	3.5-14	2.5-10	2.1-8.4	F	118	67%	100%														
110 -015 Nozzles	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @				ER110-015				#40281-015				SR110-015				#40287-015				MR110-015			
				3GPA	4GPA	5GPA	6GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	#40291-015				DR110-015			
	0.11	**20**	20	2.5-10	2.0-7.8	1.6-6.3	1.3-5.2	F	153	40%	100%														
	0.12	**25**	25	2.9-12	2.2-8.8	1.8-7.0	1.5-5.8	F	148	44%	100%	M	226	21%	98%											
	0.13	**30**	30	3.2-13	2.4-9.6	1.9-7.7	1.6-6.4	F	145	47%	100%	F	216	24%	98%	C	323	11%	94%	C	368	7%	92%			
	0.14	**35**	35	3.5-14	2.5-10	2.1-8.3	1.7-6.9	F	142	49%	100%	F	207	26%	98%	C	298	14%	96%	C	346	8%	93%			
	0.15	**40**	40	3.7-15	2.8-11	2.2-8.9	1.9-7.4	F	139	51%	100%	F	200	28%	98%	C	279	16%	97%	C	329	10%	94%			
	0.16	**45**	45	3.9-16	3.0-12	2.4-9.4	2.0-7.8	F	137	53%	100%	F	194	30%	98%	M	262	18%	98%	C	315	11%	95%			
	0.17	**50**	50	4.1-17	3.1-12	2.5-9.9	2.1-8.3	F	135	55%	100%	F	188	32%	98%	M	248	20%	98%	C	302	12%	95%			
	0.18	**60**	59	4.5-18	3.5-14	2.8-11	2.3-9.1	F	131	58%	100%	F	178	34%	98%	M	226	23%	99%	C	282	14%	96%			
	0.19	**65**	64	4.7-19	3.5-14	2.8-11	2.4-9.4	F	129	59%	100%	F	173	36%	98%	F	217	24%	99%	C	273	15%	96%			
	0.20	**70**	69	4.9-20	3.8-15	3.0-12	2.5-9.8	F	128	61%	100%	F	169	37%	98%	F	209	25%	99%	M	265	15%	97%			
	0.21	**80**	79	5.2-21	3.9-16	3.3-13	2.5-10	F	125	63%	100%	F	162	39%	98%	F	195	27%	100%	M	252	17%	97%			
110 -02 Nozzles	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @				ER110-02				#40281-02				SR110-02				#40287-02				MR110-02			
				3GPA	4GPA	5GPA	6GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	#40291-02				DR110-02			
	0.14	**20**	20	3.5-14	2.5-10	2.1-8.3	1.7-6.9	F	173	32%	100%														
	0.16	**25**	25	3.9-16	2.9-12	2.3-9.3	2.0-7.8	F	166	36%	100%	M	228	20%	99%											
	0.17	**30**	29	4.3-17	3.3-13	2.5-10	2.1-8.5	F	160	39%	100%	M	220	22%	99%	C	317	11%	95%	VC	433	5%	82%			
	0.19	**35**	34	4.5-18	3.5-14	2.8-11	2.3-9.2	F	155	42%	100%	F	213	24%	99%	C	297	13%	96%	VC	412	6%	85%			
	0.20	**40**	39	4.9-20	3.8-15	3.0-12	2.5-9.8	F	151	45%	100%	F	207	26%	99%	C	281	15%	97%	VC	394	6%	87%			
	0.21	**45**	44	5.3-21	3.9-16	3.1-13	2.5-10	F	147	47%	100%	F	202	27%	99%	M	267	17%	97%	C	378	7%	88%			
	0.22	**50**	49	5.5-22	4.1-16	3.3-13	2.8-11	F	144	49%	100%	F	197	28%	99%	M	256	18%	97%	C	364	8%	90%			
	0.24	**60**	59	6.0-24	4.5-18	3.5-14	3.0-12	F	138	52%	100%	F	189	31%	99%	M	237	21%	98%	C	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%	C	328	10%	92%			
	0.26	**70**	69	6.5-26	4.8-19	3.9-16	3.3-13	F	133	55%	100%	F	182	32%	99%	M	222	23%	98%	C	318	10%	93%			
	0.28	**80**	79	7.0-28	5.3-21	4.3-17	3.5-14	F	129	58%	100%	F	176	34%	99%	F	210	25%	99%	C	299	11%	94%			
110 -025 Nozzles	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @				ER110-025				#40281-025				SR110-025				#40287-025				MR110-025			
				3GPA	4GPA	5GPA	6GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	#40291-025				DR110-025			
	0.17	**20**	19	4.3-17	3.3-13	2.5-10	2.2-8.6	F	194	28%	100%														
	0.20	**25**	24	4.8-19	3.5-14	2.9-12	2.4-9.7	F	190	29%	100%	M	246	17%	98%										
	0.21	**30**	29	5.3-21	4.0-16	3.3-13	2.8-11	F	187	29%	100%	M	237	19%	98%	C	353	8%	90%	VC	437	5%	79%			
	0.23	**35**	34	5.8-23	4.3-17	3.5-14	2.8-11	F	184	29%	100%	M	230	21%	98%	C	337	10%	92%	VC	418	6%	83%	UC	568	
	0.25	**40**	39	6.1-24	4.5-18	3.8-15	3.1-12	F	181	30%	100%	M	223	22%	98%	C	322	11%	93%	VC	401	6%	86%	UC	546	
	0.26	**45**	44	6.5-26	4.8-19	3.9-16	3.3-13	F	179	30%	100%	M	218	24%	98%	C	310	12%	94%	C	386	7%	88%	UC	526	
	0.28	**50**	49	6.8-27	5.1-21	4.1-17	3.5-14	F	177	30%	100%	F	213	25%	98%	C	299	13%	95%	C	373	8%	89%	UC	509	
	0.30	**60**	58	7.5-30	5.5-22	4.5-18	3.8-15	F	173	31%	100%	F	204	27%	98%	C	280	15%	96%	C	350	9%	91%	XC	478	
	0.31	**65**	63	7.8-31	5.8-23	4.8-19	3.9-16	F	172	31%	100%	F	200	28%	98%	C	271	16%	96%	C	340	9%	92%	XC	465	
	0.33	**70**	68	8.1-32	6.1-24	4.8-20	4.1-16	F	170	31%	100%	F	196	28%	98%	M	263	16%	96%	C	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%	F	190	30%	98%	M	249	18%	97%	C	314	10%	94%	XC	431	
110 -03 Nozzles	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @				ER110-03				#40281-03				SR110-03				#40287-03				MR110-03			
				4GPA	5GPA	6.0GPA	8GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	#40291-03				DR110-03			
	0.21	**20**	19	3.8-15	3-12	2.5-10	1.9-7.7	F	199	26%	99%														
	0.23	**25**	24	4.3-17	3.5-14	2.9-12	2.2-8.6	F	191	29%	99%	C	322	9%	93%										
	0.26	**30**	29	4.8-19	3.8-15	3.3-13	2.4-9.5	F	185	31%	99%	C	307	11%	95%	VC	399	6%	86%							
	0.28	**35**	34	5.1-20	4.1-16	3.5-14	2.5-10	F	179	33%	98%	C	293	13%	95%	C	380	7%	88%	XC	464	4%	77%	UC	618	
	0.29	**40**	39	5.5-22	4.3-17	3.7-15	2.8-11	F	175	34%	98%	C	282	14%	96%	C	364	8%	90%	VC	447	5%	79%	UC	596	
	0.31	**45**	43	5.8-23	4.8-19	3.9-15	2.9-12	F	170	36%	98%	C	272	16%	96%	C	350	9%	91%	VC	432	5%	82%	UC	576	
	0.33	**50**	48	6.1-24	4.9-20	4.1-16	3.1-12	F	167	37%	98%	M	263	17%	97%	C	337	10%	93%	VC	419	6%	83%	UC	558	
	0.36	**60**	58	6.8-27	5.3-21	4.5-18	3.3-13	F	160	39%	97%	M	247	19%	97%	C	315	11%	94%	C	396	6%	86%	UC	527	
	0.38	**65**	63	7.0-28	5.5-22	4.7-19	3.5-14	F	157	40%	97%	M	240	20%	97%	C	306	12%	95%	C	385	7%	87%	UC	514	
	0.39	**70**	68	7.3-29	5.8-23	4.8-19	3.6-14	F	155	41%	97%	M	234	20%	97%	C	297	13%	95%	C	376	7%	88%	UC	501	
	0.42	**80**	77	7.8-31	6.3-25	5.3-21	3.8-15	F	150	42%	97%	M	223	22%	98%	C	281	14%	96%	C	359	8%	89%	XC	478	

NOTE: [1]SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. [2]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

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

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)**

110 -04 Nozzles

Flow	Boom	Tip	Sprayer Speed (on 20" spacing) @				ER110-04		#40281-04		SR110-04		#40287-04		MR110-04		#40291-04		DR110-04		#40286-04		UR110-04	
us gpm	psi	psi	4GPA	5GPA	7.5	10GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
0.27	**20**	19	5-20	4-16	2.8-11	2-8.1	M	243	18%	97%													#40292-04	
0.31	**25**	23	5.8-23	4.5-18	3-12	2.3-9.1	M	235	20%	97%	C	335	9%	92%										
0.34	**30**	28	6.3-25	5-20	3.3-13	2.5-10	M	228	21%	97%	C	319	10%	93%	VC	425	4%	83%	XC	519	3%	67%		
0.36	**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
0.39	**40**	37	7.3-29	5.8-23	3.8-15	3-12	M	217	24%	97%	C	294	13%	95%	C	386	6%	88%	XC	478	4%	74%	UC	611
0.41	**45**	42	7.5-30	6-24	4-16	3-12	F	213	25%	96%	C	284	14%	95%	C	370	7%	90%	VC	462	4%	77%	UC	593
0.43	**50**	47	8-32	6.5-26	4.3-17	3.3-13	F	209	26%	96%	C	275	15%	96%	C	355	8%	91%	VC	447	5%	79%	UC	577
0.47	**60**	56	8.8-35	7-28	4.8-19	3.5-14	F	202	27%	96%	M	259	17%	96%	C	330	9%	93%	VC	421	6%	82%	UC	549
0.49	**65**	61	9.3-37	7.3-29	5-20	3.8-15	F	199	28%	96%	M	252	18%	97%	C	319	9%	94%	VC	410	6%	83%	UC	537
0.51	**70**	66	9.5-38	7.5-30	5-20	3.8-15	F	196	29%	96%	M	245	18%	97%	C	309	10%	95%	C	400	6%	84%	UC	526
0.55	**80**	75	10-41	8.3-33	5.5-22	4-16	F	191	30%	95%	M	233	19%	97%	C	291	11%	95%	C	381	7%	86%	UC	505

110 -05 Nozzles

Flow	Boom	Tip	Sprayer Speed (on 20" spacing) @				ER110-05		#40281-05		SR110-05		#40287-05		MR110-05		#40291-05		DR110-05		#40286-05		UR110-05	
us gpm	psi	psi	6GPA	8GPA	10GPA	12GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
0.34	**20**	18	4.3-17	3-12	2.5-10	2.1-8.3	M	253	17%	95%													#40292-05	
0.38	**25**	23	4.8-19	3.5-14	2.8-11	2.3-9.3	M	242	19%	95%	C	388	6%	88%										
0.41	**30**	27	5-20	3.8-15	3-12	2.5-10	M	233	21%	95%	C	367	7%	90%	XC	501	3%	69%						
0.45	**35**	32	5.5-22	4.3-17	3.3-13	2.8-11	M	225	23%	95%	C	349	9%	92%	XC	478	4%	73%	XC	525	2%	64%	UC	652
0.48	**40**	36	6-24	4.5-18	3.5-14	3-12	M	219	25%	95%	C	334	10%	93%	VC	459	4%	76%	XC	513	3%	66%	UC	634
0.50	**45**	41	6.3-25	4.8-19	3.8-15	3-12	F	213	26%	95%	C	320	11%	94%	VC	442	5%	78%	XC	502	3%	68%	UC	618
0.53	**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
0.58	**60**	54	7.3-29	5.5-22	4.3-17	3.5-14	F	199	29%	95%	C	287	14%	95%	C	400	6%	83%	XC	475	3%	73%	UC	582
0.61	**65**	59	7.5-30	5.8-23	4.5-18	3.8-15	F	195	30%	95%	C	277	15%	96%	C	389	6%	84%	XC	467	3%	74%	UC	572
0.63	**70**	63	7.8-31	5.8-23	4.8-19	4-16	F	191	31%	95%	M	269	15%	96%	C	378	7%	85%	XC	460	4%	75%	UC	563
0.67	**80**	72	8.3-33	6.3-25	5-20	4.3-17	F	185	32%	95%	M	253	17%	97%	C	359	7%	87%	VC	448	4%	77%	UC	547

110 -06 Nozzles

Flow	Boom	Tip	Sprayer Speed (on 20" spacing) @				ER110-06		#40281-06		SR110-06		#40287-06		MR110-06		#40291-06		DR110-06		#40286-06		UR110-06	
us gpm	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
0.44	**25**	22	4.5-18	3.3-13	2.8-11	2.2-8.8	C	278	15%	94%													#40292-06	
0.48	**30**	26	4.8-19	3.5-14	3-12	2.4-9.6	M	268	16%	94%	VC	438	5%	81%										
0.52	**35**	30	5.3-21	4-16	3.3-13	2.5-10	M	260	18%	94%	VC	414	6%	84%	XC	506	3%	68%	XC	563	2%	58%		
0.56	**40**	35	5.5-22	4.3-17	3.5-14	2.8-11	M	253	19%	94%	C	393	7%	87%	XC	490	3%	71%	XC	547	2%	61%	UC	653
0.59	**45**	39	6-24	4.5-18	3.8-15	3-12	M	247	20%	94%	C	375	8%	88%	XC	477	4%	74%	XC	532	2%	63%	UC	636
0.63	**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
0.69	**60**	52	6.8-27	5-20	4.3-17	3.5-14	M	233	23%	95%	C	330	11%	92%	VC	443	5%	79%	XC	496	3%	69%	UC	597
0.71	**65**	57	7-28	5.3-21	4.5-18	3.5-14	M	228	23%	95%	C	318	11%	93%	VC	434	5%	80%	XC	486	3%	70%	UC	587
0.74	**70**	61	7.3-29	5.5-22	4.5-18	3.8-15	M	225	24%	95%	C	306	12%	93%	VC	426	5%	81%	XC	476	3%	71%	UC	578
0.79	**80**	70	7.8-31	6-24	5-20	4-16	F	218	25%	95%	C	285	13%	94%	VC	410	5%	83%	XC	460	3%	73%	UC	561

110 -08 Nozzles

Flow	Boom	Tip	Sprayer Speed (on 20" spacing) @				ER110-08		#40281-08		SR110-08		#40287-08		MR110-08		#40291-08		DR110-08		#40286-08		UR110-08	
us gpm	psi	psi	12GPA	15GPA	18GPA	20GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
0.56	**25**	20	3.5-14	2.8-11	2.3-9.3	2.1-8.3	C	328	14%	90%													#40292-08	
0.62	**30**	24	3.8-15	3-12	2.5-10	2.3-9.1	C	312	15%	92%	UC	489	4%	59%										
0.67	**35**	28	4-16	3.3-13	2.8-11	2.5-9.9	C	298	17%	93%	XC	465	5%	64%										
0.71	**40**	32	4.5-18	3.5-14	3-12	2.8-11	C	286	18%	93%	XC	445	6%	68%	UC	522	4%	54%	UC	606	3%	42%		
0.75	**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
0.79	**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
0.87	**60**	47	5.5-22	4.3-17	3.5-14	3.3-13	M	249	21%	95%	XC	382	8%	78%	XC	455	6%	65%	UC	543	4%	50%	UC	623
0.91	**65**	51	5.5-22	4.5-18	3.8-15	3.3-13	M	242	22%	96%	VC	370	9%	79%	XC	442	6%	67%	UC	530	4%	52%	UC	610
0.94	**70**	55	5.8-23	4.8-19	4-16	3.5-14	M	235	23%	96%	VC	359	9%	80%	XC	430	6%	69%	UC	519	4%	53%	UC	598
1.01	**80**	63	6.3-25	5-20	4.3-17	3.8-15	F	223	24%	96%	C	338	10%	83%	XC	408	7%	71%	UC	498	4%	56%	UC	578

110 -10 Nozzles

Flow	Boom	Tip	Sprayer Speed (on 20" spacing) @				ER110-10		#40281-10		SR110-10		#40287-10		MR110-10		#40291-10		DR110-10		#40286-10		UR110-10	
us gpm	psi	psi	15GPA	18GPA	20GPA	25GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
0.73	**30**	21	3.5-14	3-12	2.8-11	2.2-8.6	VC	357	11%	88%													#40292-10	
0.79	**35**	25	4-16	3.3-13	3-12	2.3-9.3	C	343	12%	89%	UC	502	5%	56%										
0.84	**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%						
0.89	**45**	32	4.5-18	3.8-15	3.3-13	2.8-11	C	319	15%	91%	XC	461	6%	64%	UC	514	4%	54%	UC	604	5%	58%		
0.94	**50**	35	4.8-19	4-16	3.5-14	2.8-11	C	310	16%	91%	XC	444	7%	67%	UC	497	5%	57%	UC	595	5%	56%	UC	680
1.03	**60**	42	5-20	4.3-17	3.8-15	3-12	C	293	17%	92%	XC	414	8%	72%	XC	468	5%	61%	UC	580	5%	54%	UC	648
1.07	**65**	46	5.3-21	4.5-18	4-16	3.3-13	C	285	18%	92%	XC	401	8%	73%	XC	456	5%	62%	UC	573	5%	53%	UC	634
1.11	**70**	49	5.5-22	4.5-18	4.3-17	3.3-13	C	278	19%	93%	XC	389	8%	75%	XC	444	6%	64%	UC	566	5%	51%	UC	621
1.19	**80**	56	6-24	5-20	4.5-18	3.5-14	M	266	20%	93%	VC	368	9%	78%	XC	423	6%	66%	UC	555	6%	49%	UC	599

110 -125 Nozzles

Flow	Boom	Tip	Sprayer Speed (on 20" spacing) @				ER110-125		#40281-125		SR110-125		#40287-125		MR110-125		#40291-125		DR110-125		#40286-125	
us gpm	psi	psi	15GPA	18GPA	20GPA	25GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
0.84	**30**	18	4.3-17	3.5-14	3.3-13	2.5-10	XC	447	8%	64%												
0.91	**35**	21	4.5-18	3.8-15	3.5-14	2.8-11	XC	430	8%	68%												
0.97	**40**	24	4.8-19	4-16	3.5-14	3-12	XC	416	9%	71%	UC	529	4%	50%								
1.03	**45**	27	5-20	4.3-17	3.8-15	3-12	XC	403	9%	73%	UC	506	4%	55%								
1.09	**50**	30	5.5-22	4.5-18	4-16	3.3-13	XC	392	10%	75%	UC	487	5%	59%	UC	633	4%	37%				
1.19	**60**	36	6-24	5-20	4.5-18	3.5-14	XC	383	10%	77%	XC	469	5%	62%	UC	616	4%	40%	UC	646	3%	35%
1.24	**65**	39	6.3-25	5-20	4.5-18	3.8-15	VC	366	11%	79%	XC	439	6%	67%	UC	587	4%	44%	UC	626	4%	37%
1.29	**70**	42	6.3-25	5.3-21	4.8-19	3.8-15	VC	358	11%	80%	XC	425	6%	69%	UC	574	4%	46%	UC	618	4%	39%
1.38	**80**	48	6.8-27	5.8-23	5-20	4-16	C	351	12%	81%	XC	413	6%	71%	UC	562	5%	48%	UC	609	4%	40%

110 -15 Nozzles

Flow	Boom	Tip	Sprayer Speed (on 20" spacing) @				ER110-15		#40281-15		SR110-15		#40287-15		MR110-15		#40291-15		DR110-15		#40286-15	
us gpm	psi	psi	18GPA	20GPA	25GPA	30GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
1.08	**40**	21	4.5-18	4-16	3.3-13	2.8-11	XC	434	9%	65%												
1.14	**45**	23	4.8-19	4.3-17	3.5-14	2.8-11	XC	423	9%	67%												
1.20	**50**	26	5-20	4.5-18	3.5-14	3-12	XC	413	10%	69%	UC	561	4%	46%								
1.32	**60**	31	5.5-22	5-20	4-16	3.3-13	XC	395	11%	72%	UC	534	5%	52%	UC	604	4%	41%				
1.37	**65**	34	5.8-23	5-20	4-16	3.5-14	XC	387	11%	73%	UC	522	5%	54%	UC	595	4%	42%	UC	646	4%	42%
1.43	**70**	36	6-24	5.3-21	4.3-17	3.5-14	XC	380	11%	74%	UC	511	5%	56%	UC	586	4%	44%	UC	637	4%	43%
1.52	**80**	41	6.3-25	5.8-23	4.5-18	3.8-15	VC	367	12%	76%	UC	491	6%	59%	UC	570	5%	46%	UC	620	4%	46%

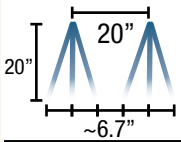
110 -20 Nozzles

Flow	Boom	Tip	Sprayer Speed (on 20" spacing) @				ER110-20		#40281-20		SR110-20		#40287-20		MR110-20		#40291-20	
us gpm	psi	psi	15GPA	20GPA	30GPA	40GPA	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
1.37	**50**	19	6.8-27	5-20	3.5-14	2.5-10	UC	504	6%	54%								
1.50	**60**	23	7.5-30	5.5-22	3.8-15	2.8-11	UC	484	7%	58%	UC	557	5%	46%				
1.56	**65**	24	7.8-31	5.8-23	3.8-15	3-12	XC	476	7%	60%	UC	546	5%	48%				
1.62	**70**	26	8-32	6-24	4-16	3-12	XC	468	7%	61%	UC	536	5%	51%				
1.73	**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

Cap Includes:

COMBO-JET® Metering Orifices

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

40249-00
50 Mesh Strainer

Available in -08 size & up

Short style orifices are compatible with Combo-Jet snap-in strainers.

40285-04 40285-15

*Some metering orifices have long stems, 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.

40292-27

Combo-Jet Streamer Nozzle Size	Metering Orifice Size	Pres. (PSI)	Flow Rate (us gpm)	10" Outlet Spacing Application Rates (GPA) @			12" Outlet Spacing Application Rates (GPA) @			15" Outlet Spacing Application Rates (GPA) @			20" Outlet Spacing Application Rates (GPA) @			30" Outlet Spacing Application Rates (GPA) @		
				4.5 MPH	5.0 MPH	6.5 MPH	4.5 MPH	5.0 MPH	6.5 MPH	4.5 MPH	5.0 MPH	6.5 MPH	7.5 MPH	10 MPH	15 MPH	4.5 MPH	5.0 MPH	6.5 MPH
Using Tip Wizard makes selecting metering orifices & streamer caps easy! TIP WIZARD TRY IT FREE AT WWW.WILGER.NET Download on the App Store GET IT ON Google Play	-005 COMBO-JET Metering Orifice 40285-005	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
		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
		25	0.04	5.2	4.7	3.6	4.3	3.9	3.0	3.5	3.1	2.4	1.7	1.3	0.9	1.7	1.6	1.2
		30	0.04	5.7	5.1	3.9	4.7	4.3	3.3	3.8	3.4	2.6	1.8	1.4	0.9	1.9	1.7	1.3
		35	0.05	6.1	5.5	4.2	5.1	4.6	3.5	4.1	3.7	2.8	2	1.5	1	2.0	1.8	1.4
		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
		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
	-0067 COMBO-JET Metering Orifice 40285-007	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
		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
		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
		30	0.06	7.7	6.9	5.3	6.4	5.7	4.4	5.1	4.6	3.5	2.5	1.9	1.2	2.6	2.3	1.8
		35	0.06	8.3	7.4	5.7	6.9	6.2	4.8	5.5	5.0	3.8	2.7	2	1.3	2.8	2.5	1.9
		40	0.07	8.8	8.0	6.1	7.4	6.6	5.1	5.9	5.3	4.1	2.8	2.1	1.4	2.9	2.7	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
	-01 COMBO-JET Metering Orifice 40285-01	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
		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
		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
		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
		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
		40	0.10	13	12	9	11	10	7.7	8.8	8.0	6.1	4.2	3.2	2.1	4.4	4.0	3.1
		45	0.11	14	13	10	12	11	8.1	9.4	8.4	6.5	4.4	3.3	2.2	4.7	4.2	3.2
40443-015	-015 COMBO-JET Metering Orifice 40285-015	15	0.09	12	11	8.4	10	9.1	7.0	8.1	7.3	5.6	4.2	3.2	2.1	4.0	3.6	2.8
		20	0.11	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
		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
		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
		35	0.14	19	17	13	15	14	11	12	11	8.6	5.9	4.5	3	6.2	5.6	4.3
		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
		45	0.16	21	19	15	18	16	12	14	13	10	6.6	5	3.3	7.0	6.3	4.8
40443-02	-02 COMBO-JET Metering Orifice 40285-02	15	0.12	16	15	11	13	12	9.3	11	10	7.4	5.6	4.2	2.8	5.4	4.8	3.7
		20	0.14	19	17	13	16	14	11	12	11	8.6	6.2	4.7	3.1	6.2	5.6	4.3
		25	0.16	21	19	14	17	16	12	14	12	10	6.8	5.1	3.4	6.9	6.2	4.8
		30	0.17	23	21	16	19	17	13	15	14	11	7.4	5.5	3.7	7.6	6.8	5.3
		35	0.19	25	22	17	21	18	14	16	15	11	7.9	5.9	4	8.2	7.4	5.7
		40	0.20	26	24	18	22	20	15	18	16	12	8.4	6.3	4.2	8.8	7.9	6.1
		45	0.21	28	25	19	23	21	16	19	17	13	8.8	6.6	4.4	9.3	8.4	6.4
40443-025	-025 COMBO-JET Metering Orifice 40285-025	15	0.15	20	18	14	17	15	12	13	12	9.3	7	5.2	3.5	6.7	6.1	4.7
		20	0.18	23	21	16	19	17	13	16	14	11	7.8	5.9	3.9	7.8	7.0	5.4
		25	0.20	26	23	18	22	20	15	17	16	12	8.6	6.4	4.3	8.7	7.8	6.0
		30	0.22	29	26	20	24	21	16	19	17	13	9.2	6.9	4.6	10	8.6	6.6
		35	0.23	31	28	21	26	23	18	21	18	14	9.9	7.4	4.9	10	9.2	7.1
		40	0.25	33	30	23	27	25	19	22	20	15	10	7.9	5.2	11	10	7.6
		45	0.26	35	31	24	29	26	20	23	21	16	11	8.3	5.5	12	10	8.1
40443-03	-03 COMBO-JET Metering Orifice 40285-03	15	0.18	24	22	17	20	18	14	16	15	11	8.4	6.3	4.2	8.1	7.3	5.6
		20	0.21	28	25	19	23	21	16	19	17	13	9.4	7	4.7	9.3	8.4	6.5
		25	0.24	31	28	22	26	23	18	21	19	14	10	7.7	5.1	10	9.4	7.2
		30	0.26	34	31	24	29	26	20	23	21	16	11	8.3	5.6	11	10	7.9
		35	0.28	37	33	26	31	28	21	25	22	17	12	8.9	5.9	12	11	8.6
		40	0.30	40	36	27	33	30	23	26	24	18	13	9.5	6.3	13	12	9.1
		45	0.32	42	38	29	35	32	24	28	25	19	13	10	6.6	14	13	10
40443-04	-04 COMBO-JET Metering Orifice 40285-04	15	0.24	32	29	22	27	24	19	22	19	15	11	8.4	5.6	11	10	7.5
		20	0.28	37	34	26	31	28	22	25	22	17	13	9.4	6.3	12	11	8.6
		25	0.32	42	38	29	35	31	24	28	25	19	14	10	6.9	14	13	10
		30	0.35	46	41	32	38	34	26	30	27	21	15	11	7.4	15	14	11
		35	0.37	49	44	34	41	37	28	33	30	23	16	12	7.9	16	15	11
		40	0.40	53	47	37	44	40	30	35	32	24	17	13	8.4	18	16	12
		45	0.42	56	50	39	47	42	32	37	34	26	18	13	8.8	19	17	13
40443-05	-05 COMBO-JET Metering Orifice 40285-05	15	0.31	40	36	28	34	30	23	27	24	19	12	9.1	6.1	13	12	9.3
		20	0.35	47	42	32	39	35	27	31	28	22	14	11	7	16	14	11
		25	0.40	52	47	36	43	39	30	35	31	24	16	12	7.8	17	16	12
		30	0.43	57	51	40	48	43	33	38	34	26	17	13	8.6	19	17	13
		35	0.47	62	56	43	51	46	36	41	37	28	19	14	9.3	21	19	14
		40	0.50	66	59	46	55	49	38	44	40	30	20	15	9.9	22	20	15
		45	0.53	70	63	48	58	53	40	47	42	32	21	16	11	23	21	16

COMBO-JET® Metering Orifices & Fertilizer Streamer Caps

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

	Metering Orifice Size	Pres. (PSI)	Flow Rate (us gpm)	10" Outlet Spacing Application Rates (GPA) @			12" Outlet Spacing Application Rates (GPA) @			15" Outlet Spacing Application Rates (GPA) @			20" Outlet Spacing Application Rates (GPA) @			30" Outlet Spacing Application Rates (GPA) @		
				4.5 MPH	5.0 MPH	6.5 MPH	4.5 MPH	5.0 MPH	6.5 MPH	4.5 MPH	5.0 MPH	6.5 MPH	7.5 MPH	10 MPH	15 MPH	4.5 MPH	5.0 MPH	6.5 MPH
 40443-06	 -06 COMBO-JET Metering Orifice 40285-06	15	0.37	49	44	34	40	36	28	32	29	22	15	11	7.3	16	15	11
		20	0.42	56	50	39	47	42	32	37	34	26	17	13	8.4	19	17	13
		25	0.47	63	56	43	52	47	36	42	38	29	19	14	9.4	21	19	14
		30	0.52	69	62	48	57	51	40	46	41	32	21	15	10	23	21	16
		35	0.56	74	67	51	62	56	43	49	44	34	22	17	11	25	22	17
		40	0.60	79	71	55	66	59	46	53	48	37	24	18	12	26	24	18
		45	0.64	84	76	58	70	63	48	56	50	39	25	19	13	28	25	19
 40443-08	Short*   -08 COMBO-JET [Short] 40285-08s [Long] 40285-08	15	0.49	65	58	45	54	49	37	43	39	30	19	15	9.7	22	19	15
		20	0.57	75	67	52	62	56	43	50	45	34	22	17	11	25	22	17
		25	0.63	84	75	58	70	63	48	56	50	39	25	19	13	28	25	19
		30	0.69	91	82	63	76	69	53	61	55	42	27	21	14	30	27	21
		35	0.75	99	89	68	82	74	57	66	59	46	30	22	15	33	30	23
		40	0.80	106	95	73	88	79	61	70	63	49	32	24	16	35	32	24
		45	0.85	112	101	78	93	84	65	75	67	52	34	25	17	37	34	26
 40443-10	Short*   -10 COMBO-JET [Short] 40285-10s [Long] 40285-10	15	0.62	81	73	56	68	61	47	54	49	37	24	18	12	27	24	19
		20	0.71	94	84	65	78	70	54	63	56	43	28	21	14	31	28	22
		25	0.79	105	94	73	87	79	60	70	63	48	31	24	16	35	31	24
		30	0.87	115	103	80	96	86	66	77	69	53	34	26	17	38	34	27
		35	0.94	124	112	86	103	93	72	83	74	57	37	28	19	41	37	29
		40	1.00	133	119	92	111	99	77	88	80	61	40	30	20	44	40	31
		45	1.07	141	127	97	117	105	81	94	84	65	42	32	21	47	42	32
 40443-125	Short*   -125 COMBO-JET [Short] 40285-125s [Long] 40285-125	15	0.76	101	91	70	84	76	58	67	60	47	30	23	15	34	30	23
		20	0.88	116	105	81	97	87	67	78	70	54	35	26	17	39	35	27
		25	0.99	130	117	90	108	98	75	87	78	60	39	29	20	43	39	30
		30	1.08	143	128	99	119	107	82	95	86	66	43	32	21	48	43	33
		35	1.17	154	139	107	128	115	89	103	92	71	46	35	23	51	46	36
		40	1.25	165	148	114	137	123	95	110	99	76	49	37	25	55	49	38
		45	1.32	175	157	121	145	131	101	116	105	81	52	39	26	58	52	40
 40443-15	 -15 COMBO-JET [Long] 40285-15	15	0.92	121	109	84	101	91	70	81	73	56	36	27	18	40	36	28
		20	1.06	140	126	97	117	105	81	93	84	65	42	32	21	47	42	32
		25	1.19	157	141	108	131	117	90	104	94	72	47	35	23	52	47	36
		30	1.30	172	154	119	143	129	99	114	103	79	51	39	26	57	51	40
		35	1.40	185	167	128	154	139	107	124	111	86	56	42	28	62	56	43
		40	1.50	198	178	137	165	149	114	132	119	91	59	45	30	66	59	46
		45	1.59	210	189	145	175	158	121	140	126	97	63	47	32	70	63	48
 40443-20	 -20 COMBO-JET [Long] 40285-20	15	1.22	161	145	112	135	121	93	108	97	75	48	36	24	54	48	37
		20	1.41	186	168	129	155	140	108	124	112	86	56	42	28	62	56	43
		25	1.58	208	188	144	174	156	120	139	125	96	63	47	31	69	63	48
		30	1.73	228	206	158	190	171	132	152	137	105	69	51	34	76	69	53
		35	1.87	247	222	171	206	185	142	164	148	114	74	55	37	82	74	57
		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
	 -25 COMBO-JET [Long] 40285-25	15	1.53	202	182	140	168	152	117	135	121	93	61	45	30	67	61	47
		20	1.77	233	210	162	194	175	135	156	140	108	70	53	35	78	70	54
		25	1.98	261	235	181	217	196	151	174	157	120	78	59	39	87	78	60
		30	2.17	286	257	198	238	214	165	191	171	132	86	64	43	95	86	66
		35	2.34	309	278	214	257	232	178	206	185	142	93	69	46	103	93	71
		40	2.50	330	297	228	275	247	190	220	198	152	99	74	49	110	99	76
		45	2.65	350	315	242	292	263	202	233	210	162	105	79	53	117	105	81
	 -30 COMBO-JET [Long] 40285-30	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
		25	2.37	313	282	217	261	235	181	209	188	145	94	70	47	104	94	72
		30	2.60	343	309	238	286	257	198	229	206	158	103	77	51	114	103	79
		35	2.81	371	334	257	309	278	214	247	222	171	111	83	56	124	111	86
		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
	 -40 COMBO-JET [Long] 40285-40	15	2.45	323	291	224	269	242	186	215	194	149	97	73	48	108	97	75
		20	2.83	373	336	258	311	280	215	249	224	172	112	84	56	124	112	86
		25	3.16	417	375	289	347	313	241	278	250	192	125	94	63	139	125	96
		30	3.46	457	411	316	381	343	263	304	274	211	137	103	69	152	137	105
		35	3.74	493	444	342	411	370	285	329	296	228	148	111	74	164	148	114
		40	4.00	527	475	365	439	396	304	352	316	243	158	119	79	176	158	122
		45	4.24	559	503	387	466	420	323	373	336	258	168	126	84	186	168	129
	 -50 COMBO-JET [Long] 40285-50	15	3.06	405	364	280	337	303	233	270	243	187	121	91	61	135	121	93
		20	3.54	467	420	323	389	350	269	311	280	216	140	105	70	156	140	108
		25	3.96	522	470	362	435	392	301	348	313	241	157	118	78	174	157	121
		30	4.33	572	515	396	477	429	330	381	343	264	172	129	86	191	172	132
		35	4.68	618	556	428	515	463	356	412	371	285	185	139	93	206	185	143
		40	5.00	661	595	457	550	495	381	440	396	305	198	149	99	220	198	152
		45	5.31	701	631	485	584	525	404	467	420	323	210	158	105	234	210	162

*Short and long pre-orifices are intended to be used as replacement. If a long pre-orifice is used in a spray nozzle, replace it with the same length pre-orifice.

NEW COMBO-JET® Narrow-Angle Nozzles for 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

The DX (drift redux) & ER (fine spray) narrow angle spray nozzles.

Nozzle Size	Flow Rate USGPM	Boom PSI	Tip psi	Application Rate in US Gallons / Acre on 10" Nozzle Spacing *using solenoid for ON/OFF control* @ Sprayer Speed in Miles / Hour	20° Nozzles	40° Nozzles	60° Nozzles

For smaller 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 to support the new improvements to maximize effectiveness.

	Flow us gpm	Boom psi	Tip psi*	Sprayer Speed (on 10" spacing) @ 5gpa	7.5gpa	10gpa	12.5gpa	Drift Reduction DX20-015 #42220-015	Drift Reduction DX40-015 #42240-015	Drift Reduction DX60-015 #42260-015
-015	0.13	30	30	15.4	10.2	7.7	6.1			
	0.15	40	40	17.7	11.8	8.9	7.1			
	0.17	50	50	19.8	13.2	9.9	7.9	Fine Spray ER20-015 #42120-015	Fine Spray ER40-015 #42140-015	Fine Spray ER60-015 #42160-015
	0.18	60	59	21.7	14.5	10.9	8.7			
	0.20	70	69	23.5	15.7	11.7	9.4			
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 10" spacing) @ 7.5gpa	10gpa	12.5gpa	15gpa	Drift Reduction DX20-02 #42220-02	Drift Reduction DX40-02 #42240-02	Drift Reduction DX60-02 #42260-02
-02	0.17	30	29	13.6	10.2	8.2	6.8			
	0.20	40	39	15.7	11.8	9.4	7.9			
	0.22	50	49	17.6	13.2	10.5	8.8	Fine Spray ER20-02 #42120-02	Fine Spray ER40-02 #42140-02	Fine Spray ER60-02 #42160-02
	0.24	60	59	19.2	14.4	11.5	9.6			
	0.26	70	69	20.8	15.6	12.5	10.4			
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 10" spacing) @ 7.5gpa	10gpa	12.5gpa	15.0gpa	Drift Reduction DX20-025 #42220-025	Drift Reduction DX40-025 #42240-025	Drift Reduction DX60-025 #42260-025
-025	0.21	30	29	16.9	12.7	10.2	8.5			
	0.25	40	39	19.6	14.7	11.7	9.8			
	0.28	50	49	21.9	16.4	13.1	10.9	Fine Spray ER20-025 #42120-025	Fine Spray ER40-025 #42140-025	Fine Spray ER60-025 #42160-025
	0.30	60	58	23.9	18.0	14.4	12.0			
	0.33	70	68	25.9	19.4	15.5	12.9			
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 10" spacing) @ 10gpa	12.5gpa	15gpa	17.5gpa	Drift Reduction DX20-03 #42220-03	Drift Reduction DX40-03 #42240-03	Drift Reduction DX60-03 #42260-03
-03	0.26	30	29	15.2	12.1	10.1	8.7			
	0.29	40	39	17.5	14.0	11.7	10.0			
	0.33	50	48	19.6	15.7	13.0	11.2	Fine Spray ER20-03 #42120-03	Fine Spray ER40-03 #42140-03	Fine Spray ER60-03 #42160-03
	0.36	60	58	21.4	17.2	14.3	12.3			
	0.39	70	68	23.2	18.5	15.4	13.2			
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 10" spacing) @ 12.5gpa	15gpa	17.5gpa	20gpa	Drift Reduction DX20-04 #42220-04	Drift Reduction DX40-04 #42240-04	Drift Reduction DX60-04 #42260-04
-04	0.34	30	28	15.9	13.3	11.4	10.0			
	0.39	40	37	18.4	15.3	13.1	11.5			
	0.43	50	47	20.6	17.1	14.7	12.9	Fine Spray ER20-04 #42120-04	Fine Spray ER40-04 #42140-04	Fine Spray ER60-04 #42160-04
	0.47	60	56	22.5	18.8	16.1	14.1			
	0.51	70	66	24.3	20.3	17.4	15.2			
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 10" spacing) @ 15gpa	17.5gpa	20gpa	22.5gpa	Drift Reduction DX20-05 #42220-05	Drift Reduction DX40-05 #42240-05	Drift Reduction DX60-05 #42260-05
-05	0.41	30	27	16.3	14.0	12.2	10.9			
	0.48	40	36	18.8	16.2	14.1	12.6			
	0.53	50	45	21.1	18.1	15.8	14.1	Fine Spray ER20-05 #42120-05	Fine Spray ER40-05 #42140-05	Fine Spray ER60-05 #42160-05
	0.58	60	54	23.1	19.8	17.3	15.4			
	0.63	70	63	24.9	21.4	18.7	16.6			
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 10" spacing) @ 17.5gpa	20gpa	22.5gpa	25gpa	Drift Reduction DX20-06 #42220-06	Drift Reduction DX40-06 #42240-06	Drift Reduction DX60-06 #42260-06
-06	0.48	30	26	16.5	14.4	12.8	11.5			
	0.56	40	35	19.0	16.6	14.8	13.3			
	0.63	50	43	21.2	18.6	16.5	14.9	Fine Spray ER20-06 #42120-06	Fine Spray ER40-06 #42140-06	Fine Spray ER60-06 #42160-06
	0.69	60	52	23.3	20.4	18.1	16.3			
	0.74	70	61	25.1	22.0	19.5	17.6			
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 10" spacing) @ 22.5gpa	25gpa	27.5gpa	30gpa	Drift Reduction DX20-08 #42220-08	Drift Reduction DX40-08 #42240-08	Drift Reduction DX60-08 #42260-08
-08	0.62	30	24	16.3	14.6	13.3	12.2			
	0.71	40	32	18.8	16.9	15.4	14.1			
	0.79	50	39	21.0	18.9	17.2	15.7	Fine Spray ER20-08 #42120-08	Fine Spray ER40-08 #42140-08	Fine Spray ER60-08 #42160-08
	0.87	60	47	23.0	20.7	18.8	17.2			
	0.94	70	55	24.8	22.4	20.3	18.6			
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 10" spacing) @ 27.5gpa	30gpa	32.5gpa	35gpa	Drift Reduction DX20-10 #42220-10	Drift Reduction DX40-10 #42240-10	Drift Reduction DX60-10 #42260-10
-10	0.73	30	21	15.7	14.4	13.3	12.4			
	0.84	40	28	18.2	16.6	15.4	14.3			
	0.94	50	35	20.3	18.6	17.2	16.0	Fine Spray ER20-10 #42120-10	Fine Spray ER40-10 #42140-10	Fine Spray ER60-10 #42160-10
	1.03	60	42	22.2	20.4	18.8	17.5			
	1.11	70	49	24.0	22.0	20.3	18.9			
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 10" spacing) @ 30gpa	35gpa	40gpa	45gpa	Drift Redux DX20-125 #42220-125	Drift Redux DX40-125 #42240-125	Drift Redux DX60-125 #42260-125
-125	0.97	40	24	19.3	16.5	14.5	12.9			
	1.09	50	30	21.5	18.5	16.2	14.4	Fine Spray ER20-125 #42120-125	Fine Spray ER40-125 #42140-125	Fine Spray ER60-125 #42160-125
	1.19	60	36	23.6	20.2	17.7	15.7			
	1.29	70	42	25.5	21.9	19.1	17.0			

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.

*NOTE: This chart takes into account a relative pressure drop through commonly used PWM solenoids to illustrate some potential flow restriction for larger spot spraying nozzles.

Spot & Broadcast spraying with the same nozzles? Consider COMBO-JET® 80° Nozzles

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 & means to use cost-prohibitive herbicide regimens, the means to differentiate plants at application time and development of the computing power and learning mechanisms are continually under development.

What is the DX series spray nozzle?

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

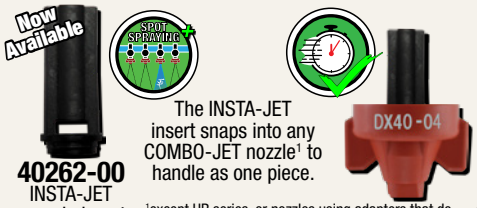
Since optical/spot sprayers are typically subject to minimized speeds and narrow spacing, Wilger developed the DX series as a sweet-spot between drift reduction and coverage in those nozzle sizes and angles.

Are they still PWM-spray system compatible? Absolutely! PWM APPROVED

Speed up spray nozzle responsivity with *INSTA-JET*

Faster nozzle pattern generation, faster shut-off, and increased time with an optimal spray pattern are ways to tune in your spot spraying application.

The Insta-jet insert helps improve responsiveness of your nozzle by significantly reducing the amount of cavity space within a nozzle body outlet, such that there is less cavity space to charge between pulses. This means faster ON and OFF time of the nozzle's spray, providing more optimal spraying time.

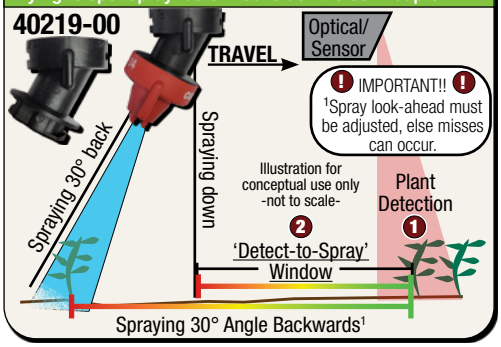


40262-00
INSTA-JET snap-in insert

The INSTA-JET insert snaps into any COMBO-JET nozzle[1] to handle as one piece.

[1]except UR series, or nozzles using adapters that do not allow for use of a snap-in strainer/insta-jet

Trying to spot spray faster? Consider the 30° Adapter.



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), provide new functions, or a mix thereof. All adapters self-align cap to common nozzle offset angle.

COMBO-JET 50/30 Adapter

NEW

40442-00
COMBO-JET outlet to 30° & 50° front/back COMBO-JET outlets
-Quarter Turn-

COMBO-JET 30/30 Y-Adapter

40440-00
COMBO-JET outlet to dual 30° front/back COMBO-JET outlets
-Quarter Turn-

30° COMBO-JET to COMBO-JET

NEW

40219-00
COMBO-JET to COMBO-JET, 30° incline (front or back)
-Quarter Turn-

COMBO-JET DOUBLE-DOWN

40441-00
COMBO-JET outlet to dual COMBO-JET outlets straight down
-Quarter Turn-

Square Lug to COMBO-JET®

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

Square Lug to DOUBLE-DOWN

NEW

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

COMBO-JET to Square Lug

NEW DESIGN

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

30° COMBO-JET to Square Lug

NEW

40220-00
COMBO-JET to Square Lug, 30° incline (front or back)
-Quarter Turn-

JACTO to COMBO-JET

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

AGRIFAC to COMBO-JET

NEW

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

AGRIFAC to DOUBLE-DOWN

40203-00 + 40441-00
Converts Agrifac Outlet to Double COMBO-JET
-Quarter Turn-

AGRIFAC to 30/30 Y-Adapter

NEW

*"AG" molded into the cap designates for Agrifac outlet only

40213-00
Converts Agrifac Outlet to COMBO-JET Y-adapter Outlets
-TWIST-LOCK-

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.

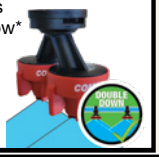
Read the 'Tip Guide for Double Nozzle Spraying'

PWM-Ready Double Nozzle Spraying

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

For example: MR110-04 + SR110-06 = 110-10 size

*PWM solenoid pressure drop would be based on combined size (e.g. -10)



HARDI to COMBO-JET

40202-00
HARDI Outlet to COMBO-JET
-Semi-permanent snap on adapter-

Radialock Slotted Caps & ER spray tip capsules (80° & 110°)

Wilger manufacturers caps for using flanged spray tip capsules onto any Combo-Jet nozzle outlets. Gasket is required.

Gasket for Slotted Caps

40160-00
Rubber Gasket for Radialock slotted caps
40160-V0 for Viton

3/8" Slot[1]

40269-05
For 3/8" Teejet/Hypro spray tips[1]

1/2" Round Slot[1]

40271-05
For 1/2" round spray tips[1]

7/16" Wide Slot[2]

40276-05
For larger Teejet/Hypro spray tips[2]

HARDI Tip Slot[2]

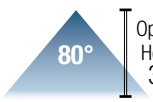
40275-05
For HARDI spray tips[2]

[1]May be available in colors: Grey (-09), Orange (-08), Brown (-07), Blue (-06), Black (-05), Yellow (-04), Green (-03), White (-02), Red (-01)

[2]May be available in colors*: Black (-05), Yellow (-04), Green (-03), White (-02), Red (-01) *Check factory availability of non-black colors.

ER Stainless spray tips with 3/8" capsules

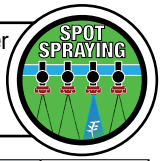
40170-04



40169-04

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

Looking for narrower 20°, 40° or 60° ER nozzle capsules? Contact Wilger.



Tip Size	-005	-0067	-01	-015	-02	-025	-03	-04	-05	-06	-08
80° ER Tip Part #	ER80-005 40170-005	ER80-007 40170-007	ER80-01 40170-01	ER80-015 40170-015	ER80-02 40170-02	ER80-025 40170-025	ER80-03 40170-03	ER80-04 40170-04	ER80-05 40170-05	ER80-06 40170-06	ER80-08 40170-08
110° ER Tip Part #	- -	- -	ER110-01 40169-01	ER110-015 40169-015	ER110-02 40169-02	ER110-025 40169-025	ER110-03 40169-03	ER110-04 40169-04	ER110-05 40169-05	ER110-06 40169-06	ER110-08 40169-08

For flow rate & spray quality charts, and more information on ER 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

40272-B5

Plug Cap	
Assembled Plug	Cap Only
40272-B5	40272-05

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.

COMBO-JET Cap O-rings

40260-00
FKM

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

40260-V0
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 a metering orifice or cap for an assembly that handles as 'one-piece'

40250-00 | 40251-00 | 40249-00 | 40248-00

Mesh Size	Slotted Strainer	Stainless Mesh	Color
100 mesh	-	#40251-00	Green
	use 100 mesh for -02 nozzles or smaller		
50 mesh	40249-00	#40250-00	Blue
	use 50 mesh for -025 or larger nozzles		
25 mesh	40248-00	-	Yellow
16 mesh	40247-00	-	Gray

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.

Threaded Outlet Adapters

Combo-Jet Cap with NPT-F threaded port

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

'-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.

New Hose Drop & Extension Caps

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

Outlet	Length	Part #
Combo-Jet to Combo-Jet	2"	40210-00
	5"	40211-00
Combo-Jet Cap to 1/4" NPT-M	16"	22026-00
	24"	22036-00
	36"	22038-00
	48"	22048-00

40210-00
2" Combo-Jet Cap Extension

40211-00
5" Combo-Jet Cap Extension

22021-00

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

Fertilizer Streamer Caps

3-hole Fertilizer Streamer Caps [Molded]

3-hole fertilizer streamer (FS3) nozzle improves stream consistency across higher pressure ranges

Color-coded, Single part number ordering

VISIT PAGE 28-29 for both FS3 Fertilizer Streamer Caps & metering orifice charts

2-hole Streamer Caps [Drilled]

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

3-hole Streamer Caps [Drilled]

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 Cap
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	40433-104

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. O-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.*

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

Plug Cap

40197-05
Square Lug nozzle outlet plug cap

3/8" Slot Cap

40159-05
For 3/8" wide flanged spray tips

Threaded Cap

40164-00
45° 1/4" NPT-F thread

Flanged Strainers

40150-00 | 40158-00 | 40151-00
Stainless Steel Strainers for Square-Lug Caps & Nozzles

Cap Gaskets

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

Gaskets are required to seal all Square Lug Caps

WILGER Dual-Spray 4+1 [DS41] Nozzle Bodies

The DS41 Advantage

Ultra-compact turret arms & narrow nozzle body

Designed for dual solenoid use for spot spraying

SPOT SPRAYING

BRAND NEW NOZZLE BODY DESIGN

NEW

Spring-Lock Turret Positive Turret Positioning

Polypropylene and stainless components resist acid and harsh chemicals

DOUBLE STACKED

Ability to spray with one or both nozzles independent of each-other.

Robust design with easy maintenance

21/32" HIGH FLOW Nozzle Inlet

Both 3/8" & 21/32" High flow inlet sizes are available

PWM-controlled solenoid on either or both nozzle position.

PWM

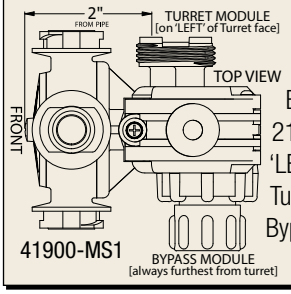
Dual Spray 4+1 [DS41] Nozzle Bodies

The DS41 nozzle body is the next generation of compact nozzle body. Many significant design changes have been made to improve turret position, durability and strength, and reliability in some of the most challenging environments in spraying.

Boom Pipe/Tube Size	Nozzle Outlet Configuration	Inlet Hole Size	DS41 Nozzle Bodies with 5/16" Bolt Mount Upper Clamp			
			Turret Control Module Position[1]	Module Configuration & Assembly Part#		
				-00 MSO on BOTH Bypass & Turret	-MS1 MSO on Bypass No Module on Turret	-NM No modules on Bypass & Turret
1" (1.315" OD)	4 CJ (Turret) + 1 CJ (Bypass)	3/8" Inlet	LEFT	41902-00	41902-MS1	41902-NM
			RIGHT	41903-00	41903-MS1	41903-NM
		High Flow 21/32" Inlet	LEFT	41900-00	41900-MS1	41900-NM
			RIGHT	41901-00	41901-MS1	41901-NM
	4 SqLug (Turret) + 1 CJ (Bypass)	3/8" Inlet	LEFT	41912-00	41912-MS1	41912-NM
			RIGHT	41913-00	41913-MS1	41913-NM
		High Flow 21/32" Inlet	LEFT	41910-00	41910-MS1	41910-NM
			RIGHT	41911-00	41911-MS1	41911-NM

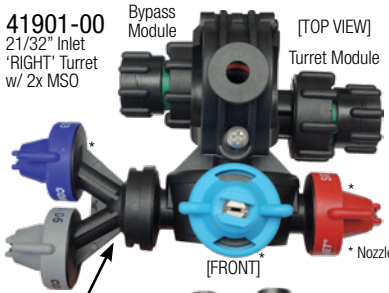
[1]DS41 LEFT & RIGHT bodies are dictated by position of turret module relative to the front faceplate. For ease of ordering, recommended to order 50% LEFT & RIGHT for sprayer retrofits. Bypass' module is always opposite the turret's module.

Ordering DS41 as -MS1 with MSO (bypass) + PWM (Turret)



Example:
21/32" Inlet
'LEFT' Turret
Turret: PWM
Bypass: MSO

41901-00
21/32" Inlet
'RIGHT' Turret
w/ 2x MSO



41900-MS1
21/32" Inlet
'LEFT' Turret
w/ 1x MSO
on bypass

* Nozzles & adapter not included

41910-MS1
21/32" Inlet
'LEFT' Turret 'MS1'
4 Square Lug Turret
+ 1 COMBO-JET bypass

Use the DS41 with new QF100 elbows for even more compact configurations

NEW 30/50 Adapter for angled spraying with the DS41

Given the DS41 is ultra compact, the 30/50 was designed to spin on the turret with the 30° angle forward[1].

50° Backward 30° Forward

40442-00
Perfect for cereal fungicide application

[1]When using the 50° nozzle angle forward, removal of the adapter will be required due to the compact nature of the DS41.

COMBO-JET® Nozzle Bodies

The COMBO-JET® Advantage

- **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**
- **KWIKSTOP™ raised inlet option available to reduce nozzle run-on**
- **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**

KWIKSTOP™ Raised Inlet Available

Single Outlet COMBO-JET® Nozzle Bodies

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

Boom Pipe	Inlet Size	Outlets	Style	Part#
3/4" (1.05" OD)	3/8"	1 CJ	Check Valve	40611-00
1" (1.315" OD)	3/8"	1 CJ	Check Valve	40621-00
			Manual On/Off	40621-MS
			No Module	40621-NM
	21/32"	1 CJ	No Module	40626-NM

40621-00
Single

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

Commonly used in liquid fertilizer metering manifolds mounted on plumbed pipe

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	Inlet Size	Outlets	Style	Part#
3/4" (1.05" OD)	3/8"	2 CJ	Check Valve	40612-00
1" (1.315" OD)	3/8"	2 CJ	Check Valve	40622-00
			Manual On/Off	40622-MS
			No Module	40622-NM
	21/32"	2 CJ	No Module	40627-NM

40622-00
Dual Swivel Combo-Jet

40622-NM
Dual Swivel w/o Check Valve

Commonly used to cost effectively retrofit a sprayer to a PWM spray system

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	Inlet Size	Outlets	Style	Part#
3/4" (1.05" OD)	3/8"	3 CJ	Check Valve	40613-00
1" (1.315" OD)	3/8"	3 CJ	Check Valve	40623-00
			Manual On/Off	40623-MS
			No Module	40623-NM
	21/32"	3 CJ	No Module	40628-NM

40623-00
Triple Swivel Combo-Jet

40628-NM
High Flow **21/32" Inlet** Triple Swivel w/o Check Valve

Commonly used to cost effectively retrofit a sprayer to a PWM spray system

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

40631-00
Single w/ KWIKSTOP Raised inlet

Smooth Clamp Bodies

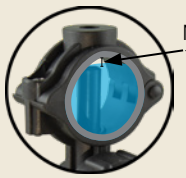
Swivel bodies have been switched to a standard bolt-mount hinge clamp.

Old-style smooth clamp

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

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

KWIKSTOP™ is a trademark, owned by BRANDT INDUSTRIES LTD.

High/Low PSI Check Valves

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

4 PSI '-P4' [BLUE] | 10 PSI '-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)

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" (1.05" OD)	1 Square Lug	Check Valve	40651-00
		No Check	40140-00
1" (1.315" OD)	1 Square Lug	Check Valve	40661-00
		Manual On/Off	40661-MS
		No Module	40661-NM
		No Check	40141-00

40661-00
Single

Commonly used in liquid fertilizer metering manifolds mounted on plumbed pipe

40141-00
No Check Valve Sq. Lug

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" (1.05" OD)	2 Square Lug	Check Valve	40652-00
1" (1.315" OD)	2 Square Lug	Check Valve	40662-00
		Manual On/Off	40662-MS
		No Module	40662-NM

40662-00
Dual Swivel Sq. Lug

40662-NM
Dual Swivel Sq. Lug

Commonly used to cost effectively retrofit a sprayer to a PWM spray system

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" (1.05" OD)	3 Square Lug	Check Valve	40653-00
1" (1.315" OD)	3 Square Lug	Check Valve	40663-00
		Manual On/Off	40663-MS
		No Module	40663-NM

40663-00
Triple Swivel Combo-Jet

40663-NM
Triple Swivel w/o Check Valve

Commonly used to cost effectively retrofit a sprayer to a PWM spray system

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.

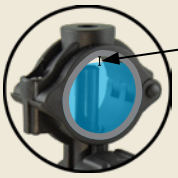
Boom Pipe	Outlets	Style	Part#
1" (1.315" OD)	1 Square Lug	KWIKSTOP	40671-00
	2 Square Lug	KWIKSTOP	40672-00
	3 Square Lug	KWIKSTOP	40673-00

40671-00
Single w/ KWIKSTOP Raised inlet

40672-00
Dual Swivel w/ KWIKSTOP Raised Inlet

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

KWIKSTOP™ is a trademark, owned by BRANDT INDUSTRIES LTD.

High/Low PSI Check Valves

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

4 PSI '-P4' [BLUE]

10 PSI '-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)

Swivel Body Replacement Parts - For ALL TYPES Swivel Bodies

40166-04	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	O-ring, 3/8" inlet seal, #110, FKM, Duro 70
20455-04	O-ring, Pressure Pad, Replacement (pairs with 40155-07)
40155-07	Diaphragm Rubber Seal, EPDM (use w/ #20455-04)
40155-12	Diaphragm Rubber Seal, VITON® (use w/ #20455-04)

3/8" Nozzle body inlet o-ring

20455-07

Hi-Lo screw for Swivel Bodies

40193-02

CJ Nozzle Body Repair Kits* (up to 6 bodies)

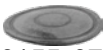
	BUNA-N Kit incl.	viton Kit incl.
6x Pressure Pad O-rings	#20455-04	#20455-V4
24x Inner-body O-rings	#40155-09	#40155-13
6x Diaphragms	#40155-07	#40155-12

*Kits will include either a pair of #20455-04 & #40155-07, or #40155-23. Both serve the same function.

NEW

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

20455-04



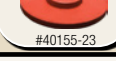
40155-07*
*Also requires 20455-04 pressure pad o-ring

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 Single-Piece Molded Diaphragm



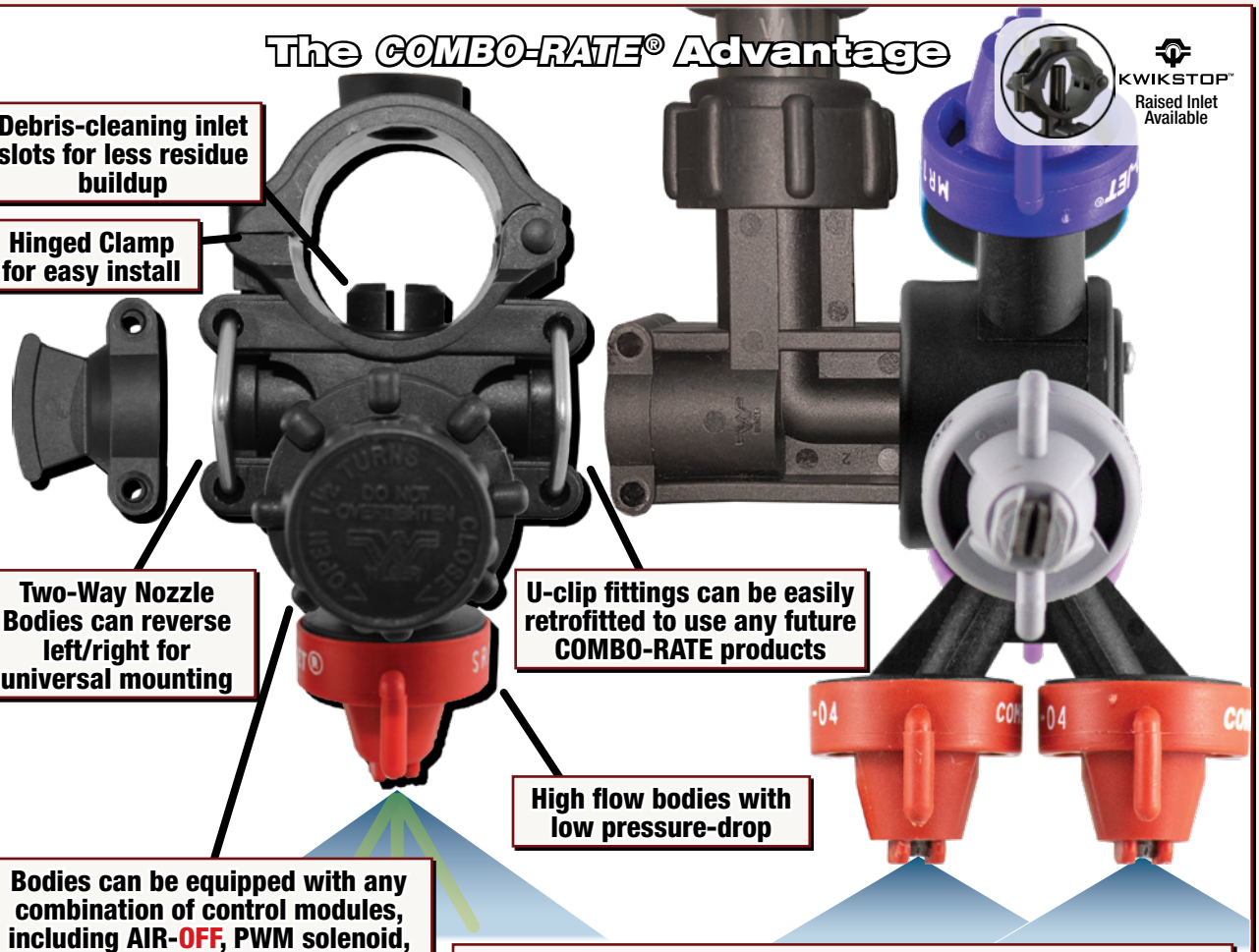
#40155-23

[Bottom View*]

*May be black, red or brown(viton)

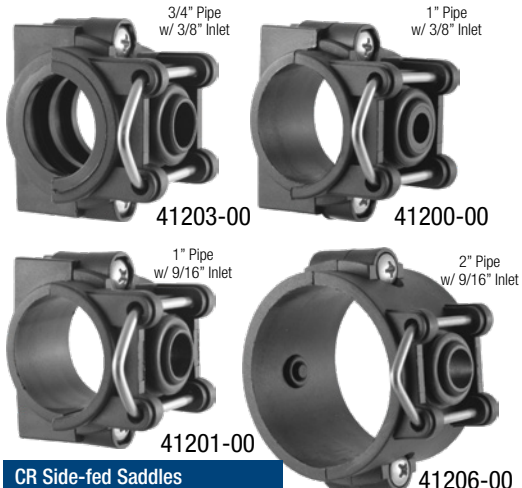
COMBO-RATE® Stacking Nozzle Bodies

The COMBO-RATE® Advantage



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



CR Side-fed Saddles

Boom Size	Inlet Size	Part#
3/4" Pipe (1.05" OD)	3/8" inlet	41203-00
1" Pipe (1.315" OD)	3/8" inlet	41200-00
	9/16" inlet	41201-00
2" Pipe (2.375" OD)	9/16" inlet	41206-00

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.

CRII One-Way Stacking Saddles

Boom Size	Inlet Size	Part#
1/2" Pipe (0.84" OD)	3/8" inlet	41471-00
1" Pipe (1.315" OD)	3/8" inlet	41475-00
	9/16" inlet	41477-00
	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 (1.315" OD)	3/8" inlet	41476-00
	9/16" inlet	41478-00

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.

KWIKSTOP™ Raised Inlet Available

41433-00

KWIKSTOP™ Raised Inlets Naturally aspirate the boom, reducing nozzle run-on

41453-00

HOW THEY WORK: Manual ON/OFF Check Valves

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

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

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

Nozzle Body Specifications

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	FKM (viton avail.)
Materials	SS (screws) Glass-Reinforced Polypropylene (body)

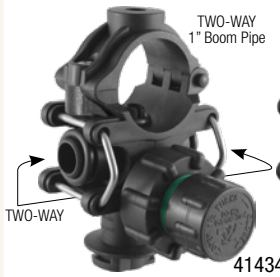
* 10PSI minimum with 10PSI check valve

Boom Size	Sch40 Pipe Outside Diameter	Inlet Size	Stacking Direction	Nozzle Bodies with 5/16" Bolt Mount Upper Clamp — Module Description & Part#			
				Dia. Check Valve	Manual ON/OFF	Air-Off Operated[2]	PWM (w/o Nut)**
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
1"	1.315"	3/8" Inlet	One-Way	41431-00	41433-00	41435-00	41437-00
		9/16" Inlet	One-Way	41441-00	41443-00	41445-00	41447-00
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.

KWIKSTOP™ Raised Inlet Available



41434-00

41438-00

41414-00

High Flow Nozzle Bodies

For very high flow requirements, use the 21/32" inlet size nozzle bodies.

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

Boom Size	Sch40 Pipe Outside Diameter	Inlet Size	Stacking Direction	Nozzle Bodies with 5/16" Bolt Mount Upper Clamp — Module Description & Part#			
				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
		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

Combo-Rate Body, Turret Replacement & Auxiliary Parts

40200-02	O-ring, CR Inter-body, #206, FKM
20455-07	O-ring, 3/8" Nozzle Body Inlet Stem, #110, FKM
40200-02	O-ring, 9/16" Nozzle Body Inlet Stem, #206, FKM
41361-02	O-ring, 21/32" Nozzle Body Inlet Stem, #115, FKM
20460-04	U-clip, 304SS
41331-03	Screw, Hi Lo, 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
41502-10	CR Turret Outlet Arm, Square Lug Outlet
41502-13	CR Turret Outlet Arm, Double-Down Combo-Jet Outlet
41502-05	CR Turret Outlet Arm, Plug
40155-23	Diaphragm, Molded, FKM (Replaces #40155-07 + 20455-04)
41100-15	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)
41593-00	Plug, CR Clamp to plug 21/32" inlet hole on 1" pipe

* Requires #20455-07 O-Ring

NEW

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

NEW

41593-00 21/32" Inlet Plug Clamp

41331-03

20460-04

40155-23 Molded Diaphragm + pad o-ring

Replaces

41285-00 Plug

41502-05* Turret Arm Plug

40200-02 Inter-body O-ring

20455-07 Turret Arm O-ring

NEW

41286-00 Keeps chemical out of a CRII side port hole

20455-04

40155-07 Diaphragm

41502-04* Combo-Jet® Turret Arm

41502-10* Square Lug Turret Arm

41502-13* Double-Down Turret Arm

NEW

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

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

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

	Standard Kit includes	viton Kit incl.
6x Pressure Pad O-rings	#20455-04	#20455-V4
6x Inter-body O-rings	#40200-02	#40200-V2
6x Diaphragms	#40155-07	#40155-12

*Repair kits may include a pair(s) of #40155-07 and #20455-04, or a single #40155-23. Both serve the same purpose. Ensure to remove the pressure pad o-ring if #40155-23 is being used.

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.

Manual ON/OFF Check Valve — 41110-00

Air-Off Operated Check Valve — 41125-00

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

Manual ON/OFF Check Valve — 41111-00

PWM w/o nut** (For PWM Solenoids, or equivalent control) — 41136-00

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

CR Swivel End Bodies

End bodies that can be fixed in 15° increments for fence-row & crop adapted spraying applications. Attaches to any combo-clip female port.

NEW — 41137-00

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

Combo-Rate Stacking Body Specification

Operating Pressure	O-ring Seals	Materials	Flow Rate
10*-100PSI *(80PSI for air-off)	FKM (viton avail.)	Glass-reinforced Polypropylene	2.1 us gpm (end & thru), 1.6 us gpm (swivel body)

COMBO-RATE® Turrets

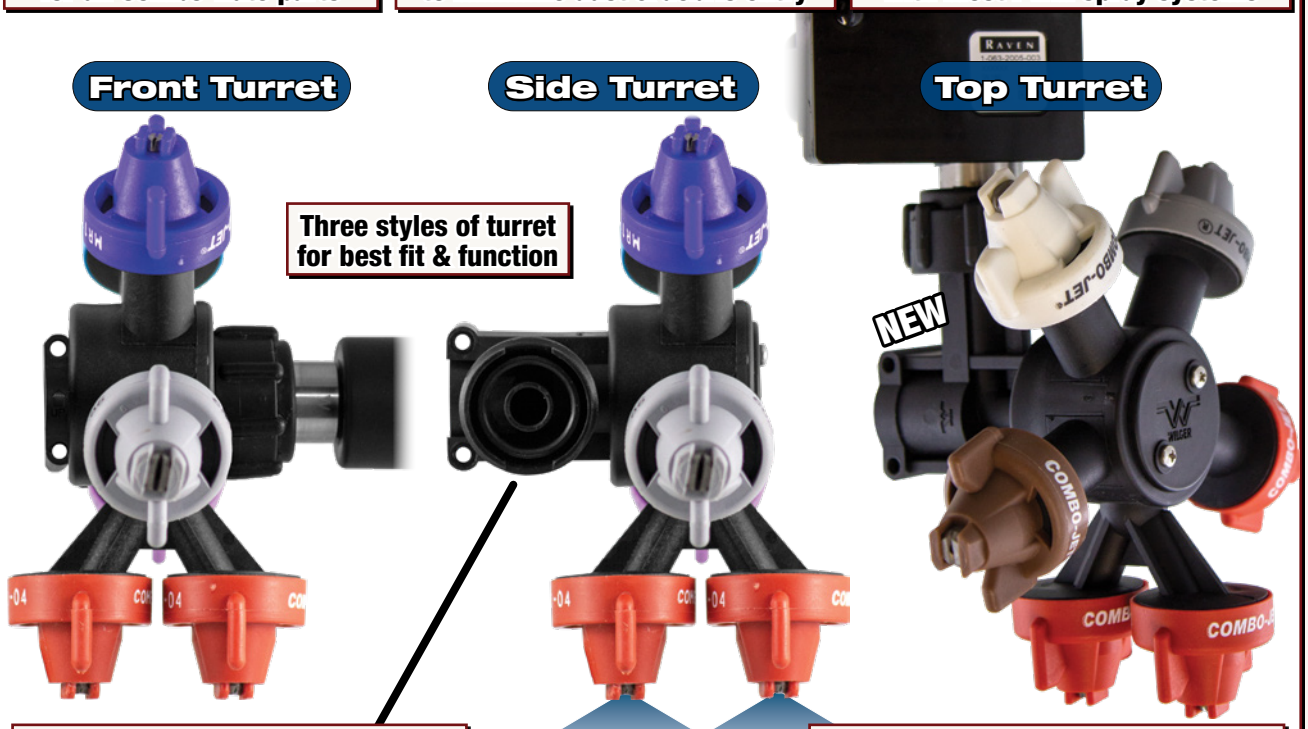
The COMBO-RATE® Turret Advantage

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**



Three styles of turret for best fit & function

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

Multiple options for Single CJ, Square Lug, or Double-Down outlets

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

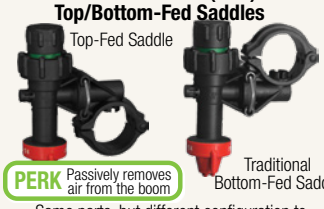
***COMBO-RATE* turrets provide you options to configure a desired turret configuration, allowing it to be a universal turret for any brand of sprayer or nozzles.**

COMBO-RATE® Stacking Component Examples

COMBO-RATE® Side-Fed Saddles

Side-Fed saddle with a thru and end body

COMBO-RATE® II (CRII) Top/Bottom-Fed Saddles



PERK Passively removes air from the boom

Same parts, but different configuration to solve sprayer issues.

COMBO-RATE® II Bottom-Fed Nozzle Body

CRII integral body with end body and turret

CR Turrets

COMBO-RATE® Stacking Components

PERK Can be fixed in 15° increments

Thru Bodies

End Bodies

NEW

Swivel End Bodies
For Fence-row nozzles

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.

Number of Outlets	Description & Part #			
	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

41515-00
Manual ON/OFF Check Valve Module

41535-00

Open module thread must have 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 OPEN, it acts as a standard 10 PSI check valve.

When the knob is CLOSED, it turns off flow 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.

Number of Outlets	Description & Part #			
	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

41602-07 Side-Turret Core Replacement kit for Teejet Threaded PWM Solenoid
41602-09 Side-Turret Core Replacement kit for Arag /Hypro Threaded PWM Solenoid

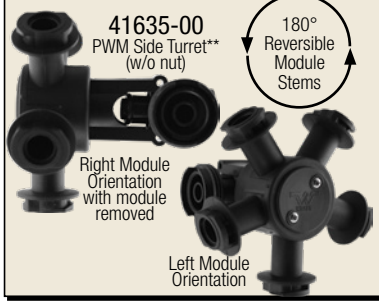
41615-00
Manual ON/OFF Module

41602-07
Kit for Teejet PWM Solenoids

41602-09
Kit for Hypro/Arag PWM Solenoids

Reversing Orientation

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



NEW 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.

Number of Outlets	Description & Part #			
	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

NEW

Solenoid gasket (Seats on wilger modules to seal on solenoid base)

41133-03
Solenoid Gasket Seal (replaces O-ring if req'd)

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

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

PWM READY

41836-00
No module nut (for PWM Solenoid) with double-down outlet

NEW Double-Down Turrets

Double nozzles from a single turret outlet. Great for double-down PWM spraying.

PWM APPROVED

41836-00
4+1 Double-Down **Top Turret** w/ solenoid & nozzles
(solenoid sold sep.)

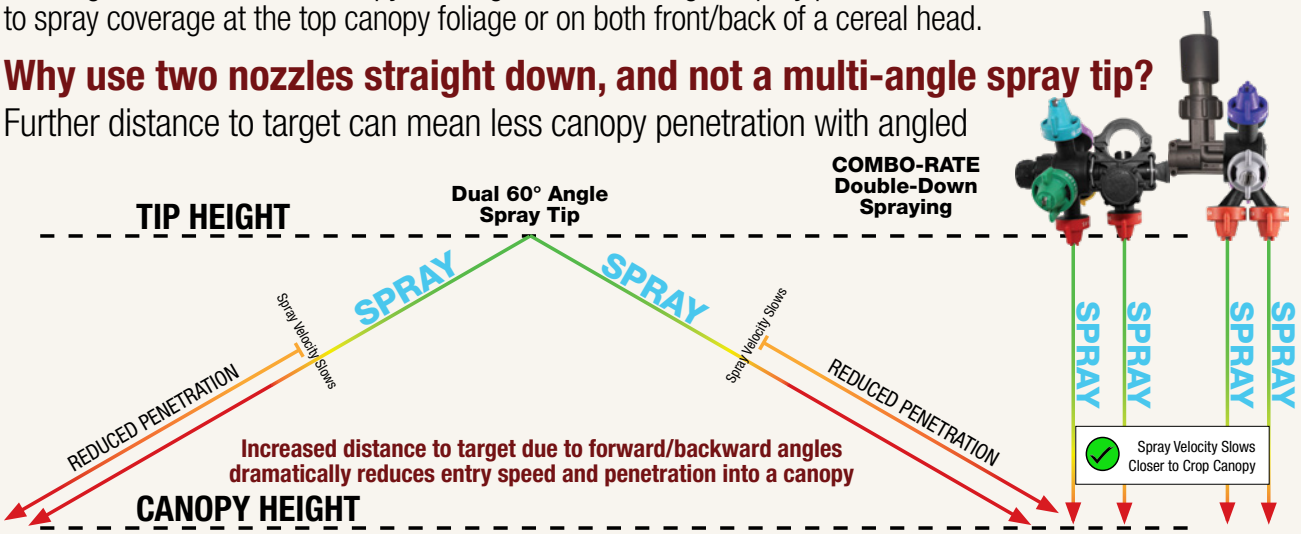
Increasing Coverage with Crop-Adapted Spraying

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 less-ideal 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.**

Options for Double-Down Spraying

Stacked bodies	*Double-Down Adapters*		*Double-Down Turrets*
	#40206-00 for Non-Wilger Bodies	#40441-00 for COMBO-JET & COMBO-RATE Bodies	

Examples of *Tough to Penetrate* Crop Canopies

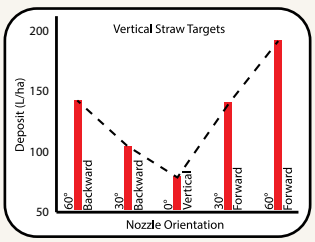
Picking Nozzles for Double-Down Spraying?

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*.



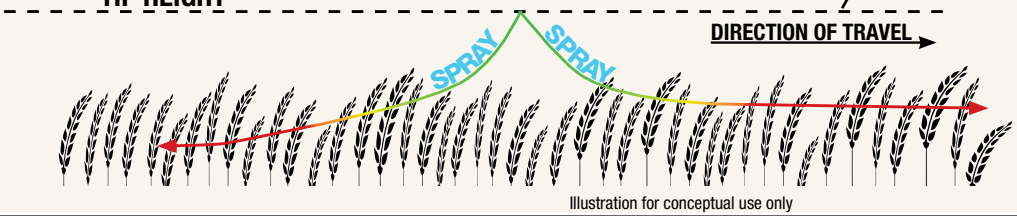


Illustration for conceptual use only

Vertical Target Spraying
e.g. Applying Fungicide on Wheat

Dry Boom Nozzle Bodies & Accessories

Compact Nozzle Bodies

Compact Bodies have many uses, as in-line 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.

Outlet Adapter

40498-00
3/8" NPT-F inlet

Inlet	Part #
1/4"	40497-00
3/8"	40498-00

Adapts a threaded port to a Combo-Jet outlet

1/4" Push-in Tube Bodies

40502-NM *solenoid or control module must be used on -NM assemblies

40502-00
1/4" Quick Connect inlet

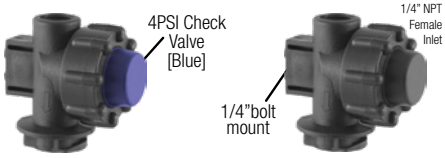
Inlet (O.D.)	10PSI Check	4PSI Check	No Module
1/4"	40502-00	40502-P4	40502-NM

Adapts a 1/4" O.D. tube inlet to a Combo-Jet outlet

Threaded Inlet Bodies

40501-P4

40501-00
1/4" NPT Female Inlet

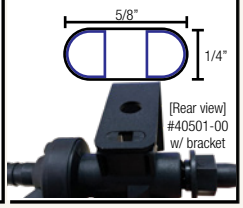


Thread	10PSI Check	4PSI Check	No Module
1/8" NPT-F	40500-00	40500-P4	40500-NM
1/4" NPT-F	40501-00	40501-P4	40501-NM

Adapts a female thread inlet to a Combo-Jet outlet

Mounting

A 5/8"x1/4" slotted profile is used to mount compact bodies with 1/4" bolts



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.

Add a 3/8" NPT hose shank adapter

40311-00

40352-00

COMBO-JET Square-Mount Bodies

40352-00

Outlets	Part #
Single CJ	40352-00
Dual CJ	40353-00
Triple CJ	40354-00

40353-00

40354-00

Square Lug Square-Mount Bodies

Square Lug Outlets (Teejet/Hypro/etc.) with dust shield

Outlets	Part #
Dual Sq. L	40152-00
Triple Sq. L	40153-00

40152-00

40153-00

3/8" NPT-M Hose Shank Adapters

40311-00 40312-00 40313-00

Fitting	One-Way	Two-Way	Three-Way
3/8"HB x 3/8" NPT-M	40301-00	40302-00	-
1/2"HB x 3/8" NPT-M	40306-00	40307-00	-
3/4"HB x 3/8" NPT-M	40311-00	40312-00	40313-00

Combo-Jet Outlet Swivel Turret Adapters

Turret Adapters intended for slow movement applications without risk of being struck

40471-00

40470-00

Swivel Outlets	Dual Turret	Triple Turret
Combo-Jet Outlet	40470-00	40471-00

40473-00

40472-00

Swivel Outlets	Dual Turret	Triple Turret
Square Lug Outlet	40472-00	40473-00

High Mount Dry Boom Nozzle Bodies with Hose Shank Feed

High Mount Flange

Flange Mount bodies mount right above the nozzle cap, with a round hole with notches cut to fix nozzle orientation

40461-00

40464-00

Inlet(s)	One-Way	Two-Way
3/8" Hose Barb	40460-00	40461-00
1/2" Hose Barb	40462-00	40463-00
3/8" HB x 1/4" NPT-M	-	40464-00

5/8" Square Mount Nozzle Bodies

5/8" Square Mount nozzle bodies attach to a clamp with a 5/8" square mount

40451-00

40450-00

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

Sq Mt w/o check

Square Mount Compact Bodies without check valves

40406-00

40407-00

Inlet(s)	One-Way	Two-Way
1/2" HB	40406-00	40407-00

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

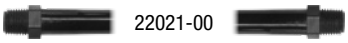
Rotating Adjustable Swivel Bodies & Hose Drop Assemblies

Hose Drop Adapters

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

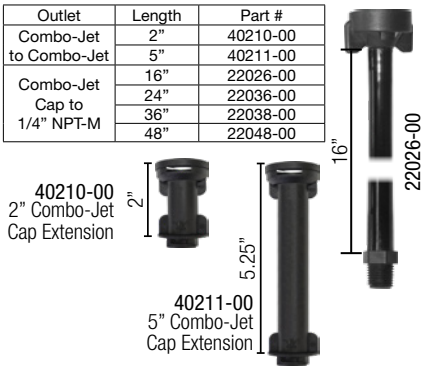
Hose Drop Adapters

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


22021-00

Hose Drop & Extension Caps

Outlet	Length	Part #
Combo-Jet to Combo-Jet	2"	40210-00
	5"	40211-00
Combo-Jet Cap to 1/4" NPT-M	16"	22026-00
	24"	22036-00
	36"	22038-00
	48"	22048-00



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

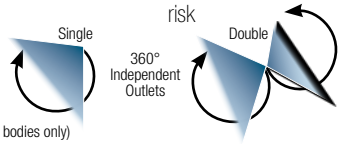
Swivel Bodies can be rotated front to back 360° use for Crop Adapted Spraying or other targeting

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

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

Crop Adapted Spraying

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



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.

Inlet Size	One-Way [Left]	One-Way [Right]	Two-Way
3/8" HB	40360-00	40361-00	40362-00
1/2" HB	40365-00	40366-00	40367-00
3/4" HB	40370-00	40371-00	40372-00

40155-21 Module Retainer, Replacement
40199-00 Lock Nut, 11/16" Thread

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.

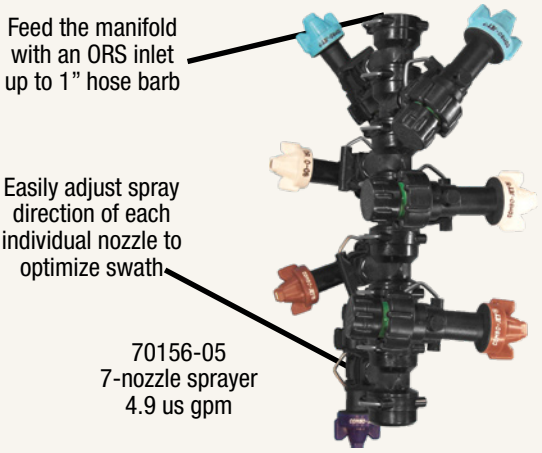
Inlet Size	One-Way [Left]	One-Way [Right]	Two-Way	Three-Way
3/8" HB	40380-00	40381-00	40382-00	40383-00
1/2" HB	40385-00	40386-00	40387-00	40388-00
3/4" HB	40390-00	40391-00	40392-00	N/A

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.



Alternate style boomless nozzle assembly using COMBO-RATE fittings

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

Adjustable swath distance charts online

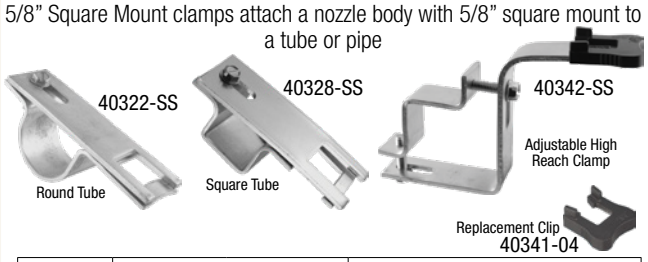
Easy-to-follow charts are online to help you figure out how to get the swath distance for your application needs.

Find them at
WWW.WILGER.NET

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 a tube or pipe



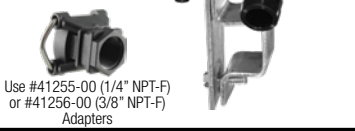
Mount Size	Standard 5/8" Square Mount Clamp (SS)		Adjustable High-Reach 5/8" Square Mount Clamp (SS)
	for Round Tube	for Square Tube	for either Round Tube or Square Tube
1/2"	40320-SS	N/A	3/4" Tube Extra High Reach 40343-SS
3/4"	40321-SS	40325-SS	
1"	40322-SS	40326-SS	3/4" to 1-1/4" 40341-SS
1-1/4"	N/A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

40341-04 Replacement Lock Clip, Plastic

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

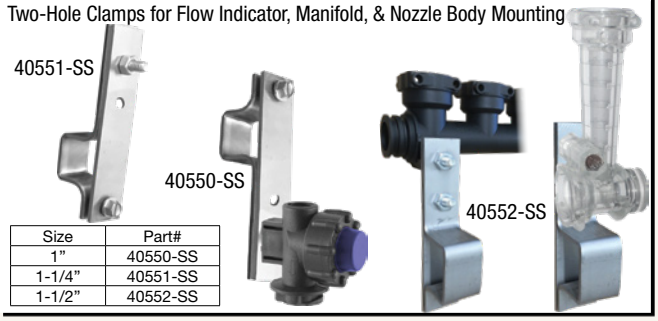
Example of 3/4" Square mount clamp and adapters, mounting to a Combo-Rate u-clip port
41261-SS



Use #41255-00 (1/4" NPT-F) or #41256-00 (3/8" NPT-F) Adapters

Two-Hole Bolt-Mount Clamps for Sq. Tube

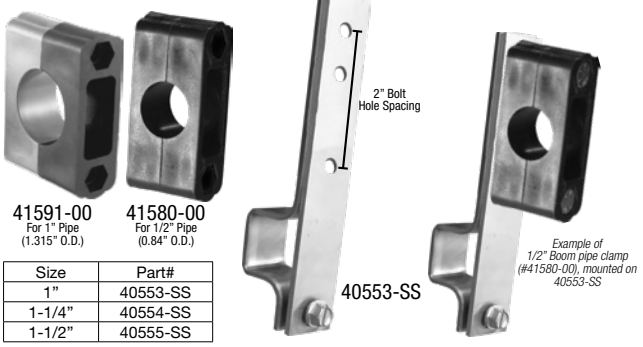
Two-Hole Clamps for Flow Indicator, Manifold, & Nozzle Body Mounting



Size	Part#
1"	40550-SS
1-1/4"	40551-SS
1-1/2"	40552-SS

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.



Size	Part#
1"	40553-SS
1-1/4"	40554-SS
1-1/2"	40555-SS

Nozzle Body Accessories & Replacement Parts

Combo-Rate Control Modules & Nuts

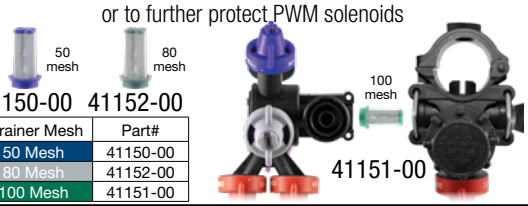
Wilger manufacturers a few styles of control modules that can be swapped between any Combo-Rate or Combo-Jet nozzle bodies

Check Valve Type	Extra Information	Module Assembly Part# (no diaphragm/o-ring incl.) 10 PSI (Standard)	4 PSI (Blue Knob)	15 PSI (Red Knob)
Diaphragm	Drip check, use w/ body nut #41100-02 (separate)	41100-03	41100-12	41100-11
Manual ON/OFF	In 'Off' position, closes check valve (no flow)	41110-01	41110-07	41110-08
Air-OFF	When air is applied*, closes check valve (no flow)	41125-01	-	-

* Recommended to apply 20PSI more than spray pressure for ideal operation & quick shut-off

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



Strainer Mesh	Part#
50 Mesh	41150-00
80 Mesh	41152-00
100 Mesh	41151-00

Diaphragm Seals

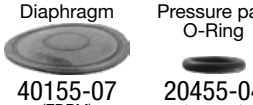
Rubber Diaphragms are used in ALL control modules to seal the flow within the check valve

40155-23 (FKM)

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

The bottom of the control modules have a groove for a pressure pad o-ring or all-in-one diaphragm

Two-piece diaphragm & pressure pad o-ring



40155-07 (EDPM)
40155-12 (viton)
20455-04 (Buna-N)
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 40155-23 diaphragm is used. For low pressure & flow, the two-piece may perform better.

O-ring Seals

O-ring seals are commonly used on many component parts.
FKM material is standard, viton is available.

O-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	O-ring Seal (ORS) fittings	20460-03	20460-15
#214	Boom end flush valve core	-	25175-08
#219	QN100 O-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
	5/16" x 5/16" x 1/4" O.D.	20457-00
Reducer	3/8" x 1/4" O.D.	20456-00

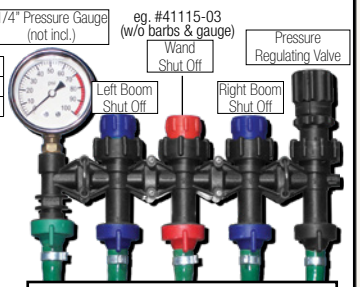
Estate Sprayer Manifolds, Accessories & Adapters

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.

Outlets	Manifold Assy
2	41115-02
3	41115-03

Manifold Assemblies do not include pressure gauge, or COMBO-JET hose barb caps.)



COMBO-JET Hose Barb Caps not included. Available in sizes up to 1/2" Hose Barb See NOZZLES section of Catalog.

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

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

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

Connection	Outlet	Part #
Combo-Clip Male	Plug	41285-00
	1/4" NPT-F	41275-00
	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 Female w/ 3/4" Sq Mount	1/4" NPT-F	41255-00
	3/8" NPT-F	41256-00

Clamps for 3/4" Square-Mount Adapters

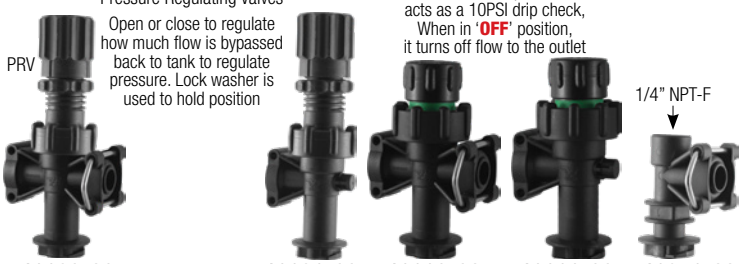
Square Tube Size	3/4" Sq. Mount Nozzle Body Clamps
1"	41261-SS
1-1/4"	41262-SS
1-1/2"	41263-SS
2"	41264-SS

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

Regulating & Manual On/Off Manifold Valves

Pressure Regulating Valves
Open or close to regulate how much flow is bypassed back to tank to regulate pressure. Lock washer is used to hold position

When in '**ON**' position, acts as a 10PSI drip check,
When in '**OFF**' position, it turns off flow to the outlet



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.

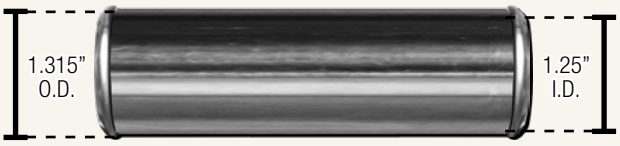
Custom tube lengths, spacing and inlet holes are available by order.

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



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

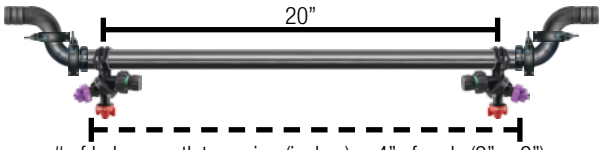
Different sprayer boom configurations require different combinations of lengths of tube.

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”)

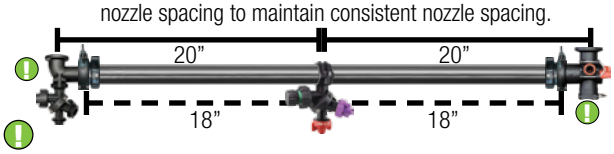
Tubes that have 2” of tube after the last nozzle body are commonly used with QN100 or QF100 plumbing parts.



# of holes **x** outlet spacing (inches) + 4” of ends (2” + 2”)

Super Compact Nozzle Body Ends (18”)

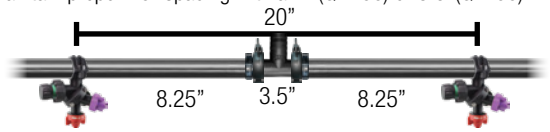
The CR BEFV & QF100 w/ CR clamp integrates the last nozzle for a super compact boom end. The tube should be 2” shorter than the intended nozzle spacing to maintain consistent nozzle spacing.



NOTE: For <u>each</u> CR BEFV/Integrated Elbow, tube will be 1 inlet hole “short”.

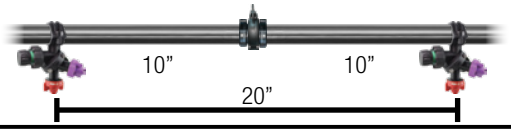
Center-fed Section Ends (8” or 8.25”)

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.

Available for 1” boom sizes.

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.

Available in both 1” & 1/2” boom sizes.

Quick-Flange Fittings & Fluid Supply System

The Quick-Flange Advantage

- Perfect Recirc. Booms
- Stronger Compact Fittings
- Compact Boom End Options
- No Threads or Sealant Required
- Cutting out Boom Contamination

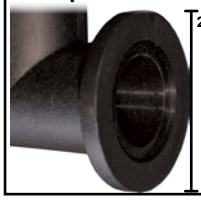
Retrofitting & Flange Compatibility

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

Can be Outfitted for:

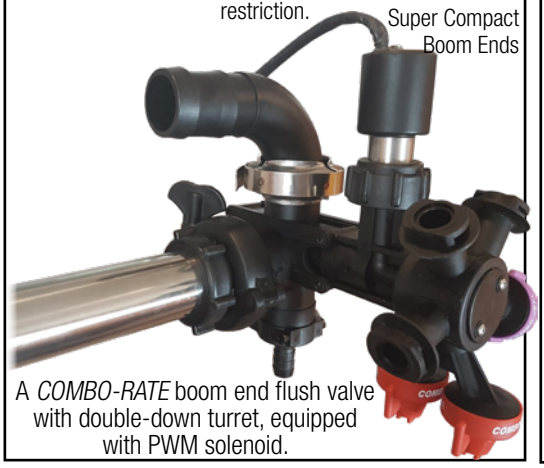
- *1" sch40 Pipe (1.315" OD)*
- *Any 1" Flanged Fittings*
- *Wilger Stainless Tubing*
- *Case Thin Wall Stainless*

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 restriction.

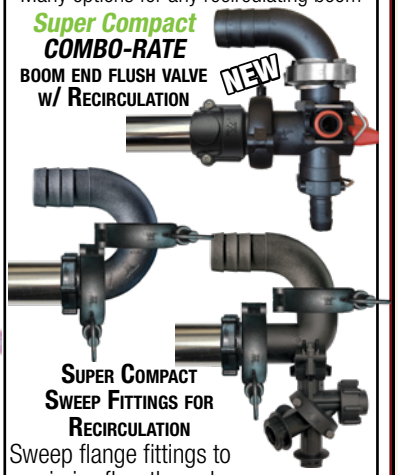


A *COMBO-RATE* boom end flush valve with double-down turret, equipped with PWM solenoid.

Recirculation Made Easy

Many options for any recirculating boom

Super Compact ***COMBO-RATE*** BOOM END FLUSH VALVE W/ RECIRCULATION NEW



Super Compact Sweep Fittings for Recirculation

Sweep flange fittings to maximize flow through a sprayer

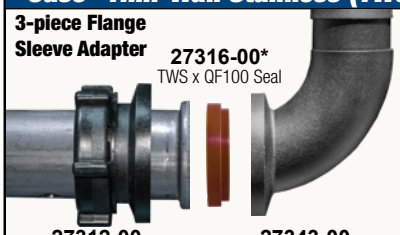
Quick-Flange Adapters for Different Sprayer Tubing Types

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

3-piece Flange Sleeve Adapter



27316-00* TWS x QF100 Seal

27312-00 3-piece flange adapter end

27343-00 QF100 x 1-1/4" HB, 90°

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

*For greater anti-twist resistance, the skirted 27316-SK gasket is available

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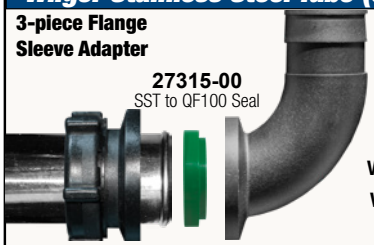
Wilger Stainless Steel Tube (SST) to Quick-Flange

3-piece Flange Sleeve Adapter



27315-00 SST to QF100 Seal

27312-00 3-piece flange adapter end

27343-00 QF100 x 1-1/4" HB, 90°

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

Through-Pipe to CR BEFV & Thru Elbow

Through-Pipe Flange End Adapter

NEW

Super Flexible
Up to 3/4" of excess tube material can fit into a CR BEFV

27382-00 QF100 through-pipe adapter kit

27360-00 CR BEFV for with flange sleeve removed

Two half-clamps mount on a boom tube, securing to the tube-end adapter. The result is a flanged tube end with up to 1/4-1" of excess tube material sticking out of the adapter. This excess length slides into a CR BEFV (or Elbow w/ top clamp #2737#-00 series), providing greater flexibility.

Cut-Pipe to Quick-Flange

Cut-Pipe Flange End Adapter

27317-00 Flange to Flange Seal

NEW

27381-00 QF100 cut-pipe adapter kit

27343-00 QF100 x 1-1/4" HB, 90°

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.

STEP 1 Determine tube lengths & spacing required for each section. Simply count the number of outlets on each 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.

STEP 3 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)

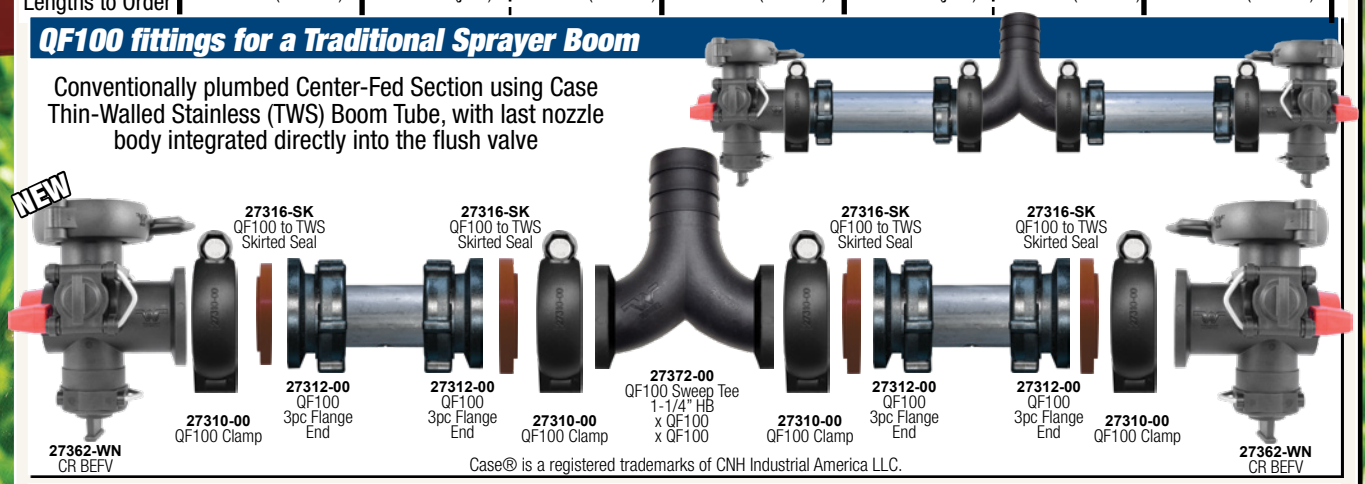
STEP 4 Determine the tube end spacing depending on the fittings used.
CR BEFV requires 18" tube end. Tube Joint requires 10" tube end. Regular fittings requires 2" end.

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 nozzles		10 nozzles	20 nozzles		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 -2 (CR BEFV) 8 hole tube	10 hole -1 (CR BEFV) 9 hole tube + joint	10 hole -1 (CR BEFV) 9 hole tube + joint	11 hole -2 (CR BEFV) 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)	9 hole tube with 18" End (CR BEFV) & 10" End (joint)	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



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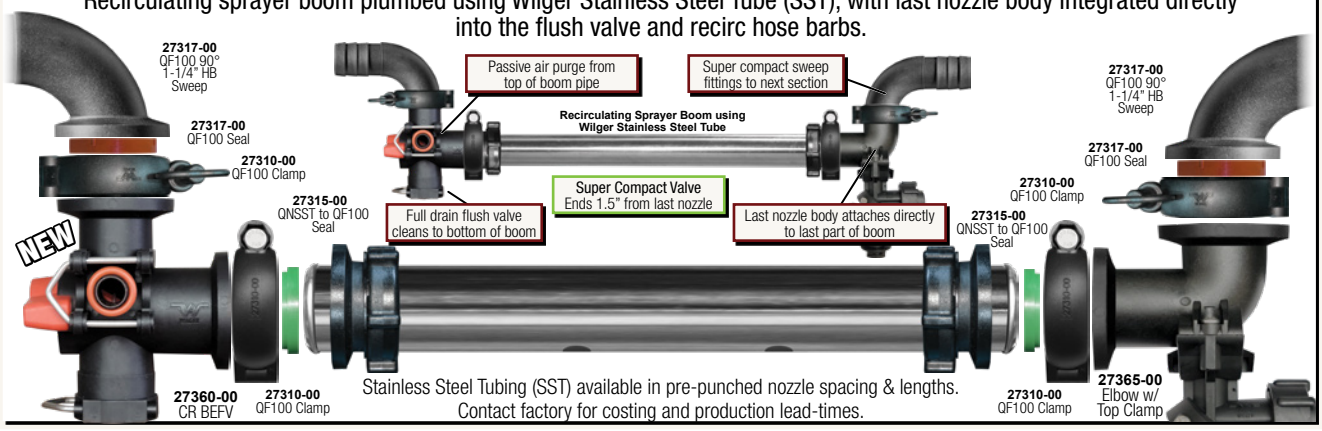
QF100 fittings for a Recirculating Sprayer Boom

Recirculating sprayer boom plumbed using Wilger Stainless Steel Tube (SST), with last nozzle body integrated directly into the flush valve and recirc hose barbs.



Stainless Steel Tubing (SST) available in pre-punched nozzle spacing & lengths. Contact factory for costing and production lead-times.

Quick-Flange Tube-End Adapters, Seals & Kits

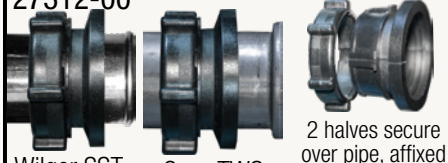
QF100 Tube-End & Pipe-End Adapters, Seals & Kits

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

3pc End Adapter

Max Pressure 150PSI/10BAR

27312-00



Wilger SST | Case TWS | 2 halves secure over pipe, affixed with binding nut

Seals Used

Wilger SST uses flared taper gasket

OR

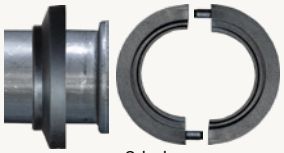
27315-SK [skirt]
27315-00 [std]

2pc End Adapter

Max Pressure 100PSI/7BAR

27313-00

for non-mobile applications, requiring low pressure



Case TWS | 2 halves secure over SST

Case TWS uses stepped or skirted gasket

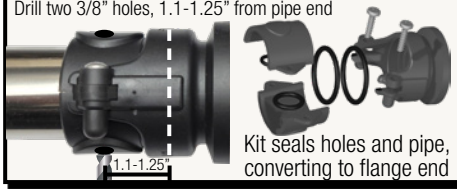
OR

27316-SK [skirt]
27316-00 [std]

Cut Pipe End Adapter Kit

27381-00 For any 1.315" OD pipe/tube

Drill two 3/8" holes, 1.1-1.25" from pipe end

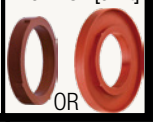


Kit seals holes and pipe, converting to flange end

Seals Used

Uses QF100 Standard Gasket

27317-00 [std]
27317-SK [skirt]

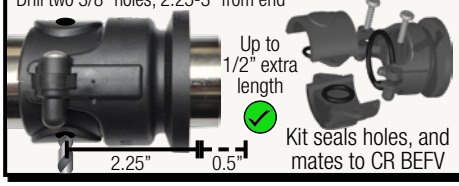


OR

Through Pipe Adapter Kit

27382-00 For any 1.315" OD pipe/tube

Drill two 3/8" holes, 2.25-3" from end



Up to 1/2" extra length

Kit seals holes, and mates to CR BEFV

Most Robust

Use with CR BEFV or 'Through-Pipe' Elbows

Threaded Pipe Adapter

For male national pipe threaded (NPT) pipes

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

QF100 x 1/2" NPT-F | QF100 x 3/4" NPT-F | QF100 x 1" NPT-F

27357-00 | 27358-00 | 27359-00

Threaded

Uses QF100 Standard Gasket

27317-00 [std]
27317-SK [skirt]

OR

Adapters & Kits

Boom End/Tube Type		Adapter/Kit
Wilger SST rolled end OR Case TWS flared end		[3pc] 27312-00 [2pc] 27313-00
Cut pipe end kit [9pc]		27381-00
Through pipe end kit [9pc]		27382-00
NPT-F Threaded Pipe Adapters	1/2" NPT-F	27357-00
	3/4" NPT-F	27358-00
	1" NPT-F	27359-00

QF100 Gasket Seals

Seal Type	Standard Seal Part#	Skirted* Seal Part#
SST Tube x Flange	27315-00	27315-SK
TWS Tube x Flange	27316-00	27316-SK
Flange x Flange	27317-00	27317-SK
Wilger SST to SST	27318-00	27318-SK
Case TWS to TWS	27319-00	27319-SK

*Skirted gaskets are used when more robust sealed connections are required

Tube to Flange End Seals

Material: FKM

Gasket seal against a formed tube end profile

Tube to Flange Seals	Standard Seal Part#	Skirted* Seal Part#
SST Tube x Flange	27315-00	27315-SK
TWS Tube x Flange	27316-00	27316-SK

*Skirted gaskets are used when more robust connections are required

SST Tube x Flange

27315-00

TWS Tube x Flange

27316-00 Standard Gasket

27316-SK Skirted Gasket*

Looking for 27316-02? It's been replaced by #27316-SK

Flange to Flange Fitting Seal

Material: FKM

Gasket seals common 1" flange fitting ends

Flange Seal	Standard Seal Part#	Skirted* Seal Part#
Flange x Flange	27317-00	27317-SK

27317-00 | 27317-SK

Tube End to Tube End Seals

Material: FKM

Gasket seals between two butt ends of tube

Tube to Tube Seals	Standard Seal Part#	Skirted* Seal Part#
Wilger SST to SST	27318-00	27318-SK
Case TWS to TWS	27319-00	27319-SK

TWS End x TWS End

27318-00

27318-SK

SST End x SST End

27319-00

Quick-Flange Clamps

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

Poly Clamp	Part#
Butterfly Nut & Bolt	27310-00
Nut & Bolt	27311-00

Butterfly Nut Flange Clamp 27310-00

Nut & Bolt Flange Clamp 27311-00

Polypropylene Clamp & Stainless Hardware

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 Thread Adapter	QF100 x 1/2" NPT-F	27357-00
	QF100 x 3/4" NPT-F	27358-00
	QF100 x 1" NPT-F	27359-00
Male Thread Adapter	QF100 x QN100-M Thread	27351-00
	QF100 x TWS-M Thread	27352-00

QF100 Cap

27353-00

27351-00 QF100 to QN100

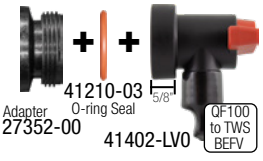
27357-00

27358-00

27359-00

27352-00 QF100 to TWS

E.g. QF100 to QN100 Flush Valve



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


27326-00
Elbow, 45°


27324-00
Elbow, 90°


27331-00
1" HB, Straight


27332-00
1" HB, 45°


27333-00
1" HB
Elbow, 90°


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


27342-00
1-1/4" HB, 45°


High Flow Sweep Fittings

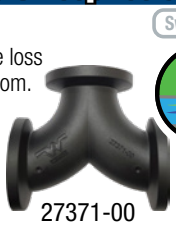

27343-00
1-1/4" HB
Elbow, 90°

QF100 Sweep Tee & Regular Tee Fittings

Sweep Tees

Compact & high flow sweep fittings for less pressure loss & higher flow capability for an improved sprayer boom.

Tee Fittings	Sweep Tee Part#	Regular Tee Part#
QF100 x QF100 x QF100	27371-00	27321-00
QF100 x QF100 x 1-1/4" HB	27372-00	27322-00
QF100 x QF100 x 1" HB	27373-00	27323-00


27371-00


Sweep Tees


27372-00
Sweep Tee, QF100 x QF100 x 1-1/4" HB

Regular Tees

Compact tees for flat bottom drainage.


27322-00


27321-00

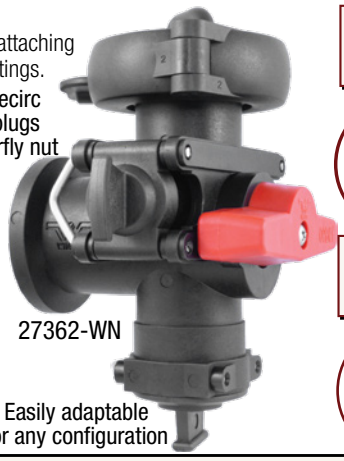
NEW — COMBO-RATE Boom End Flush Valve (CR BEFV)

The Better Boom End Nozzle Body & Valve

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#
Base Model w/o plugs	27360-00
Recirc Model w/ plugs	27361-00
Non-Recirc model w/ plugs	27362-00
Non-recirc w/ butterfly nut	27362-WN


27360-00
1" flange inlet/outlet
COMBO-RATE u-clip port x2
Full Flush Boom End Flush Valve
O-ring Seal outlet
[compatible with any Wilger ORS fittings]


Non-recirc with plugs & Butterfly nut
27362-WN
Easily adaptable for any configuration

Designed for Recirculating Booms
Designed to incorporate an in-line 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

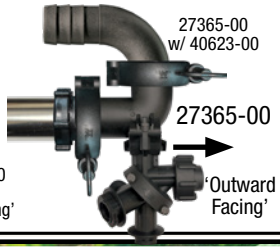
QF100 Flange Elbow with Nozzle Body Upper Clamp

Flange Elbows w/ Body Clamp

Compact flanged elbows with built-in nozzle body clamp

Flange to Flange	Compact Elbow Module Orientation		Offset Ext. Elbow
	Outward	Inward	Inward
3/8" Inlet	27365-00	27366-00	27370-00
21/32" High Flow Inlet	27367-00	27368-00	27369-00


27366-00
27366-00 w/ 41438-00
'Inward Facing'


27365-00 w/ 40623-00
27365-00
'Outward Facing'

Super Compact Boom Ends

Offset Extended Elbow w/ Body Clamp

NEW


27369-00
21/32" High Flow Inlet

The offset flange allows for free use of flange fittings for recirculating sprayers ahead of the last nozzle body.
Nozzle bodies would be 'inward' facing.

Designed for Recirculating Booms

#27382-00

'Through Pipe' Elbow w/ Body Clamp

Use with #27382-00 'Through Pipe' Boom End Adapters ONLY

#27382-00 to Flange	Module Orientation	
	Outward Facing	Inward Facing
3/8" Inlet	27375-00	27376-00
21/32" Inlet	27377-00	27378-00

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

The Quick-Nut Fitting & SST Advantage

Lighter Booms - Wilger SST
weighs 66% of aluminum
weighs 23% of sch40 pipe
Lighter than hose

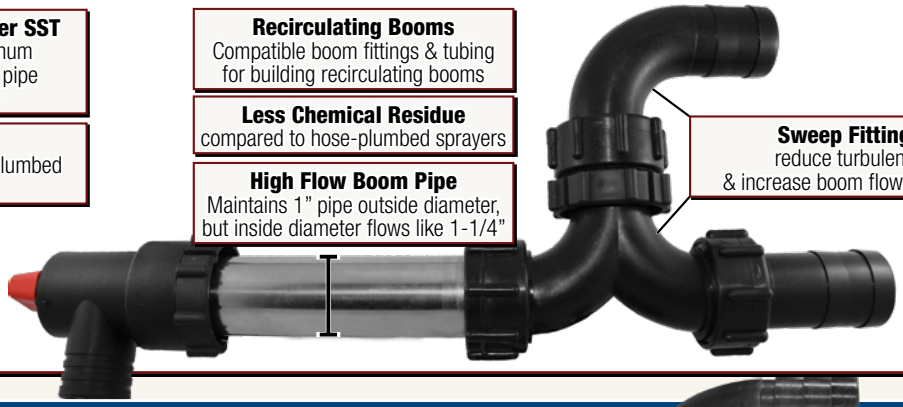
Lower Cost
compared to other pipe plumbed sprayer booms

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"

Sweep Fittings
reduce turbulence
& increase boom flow capacity



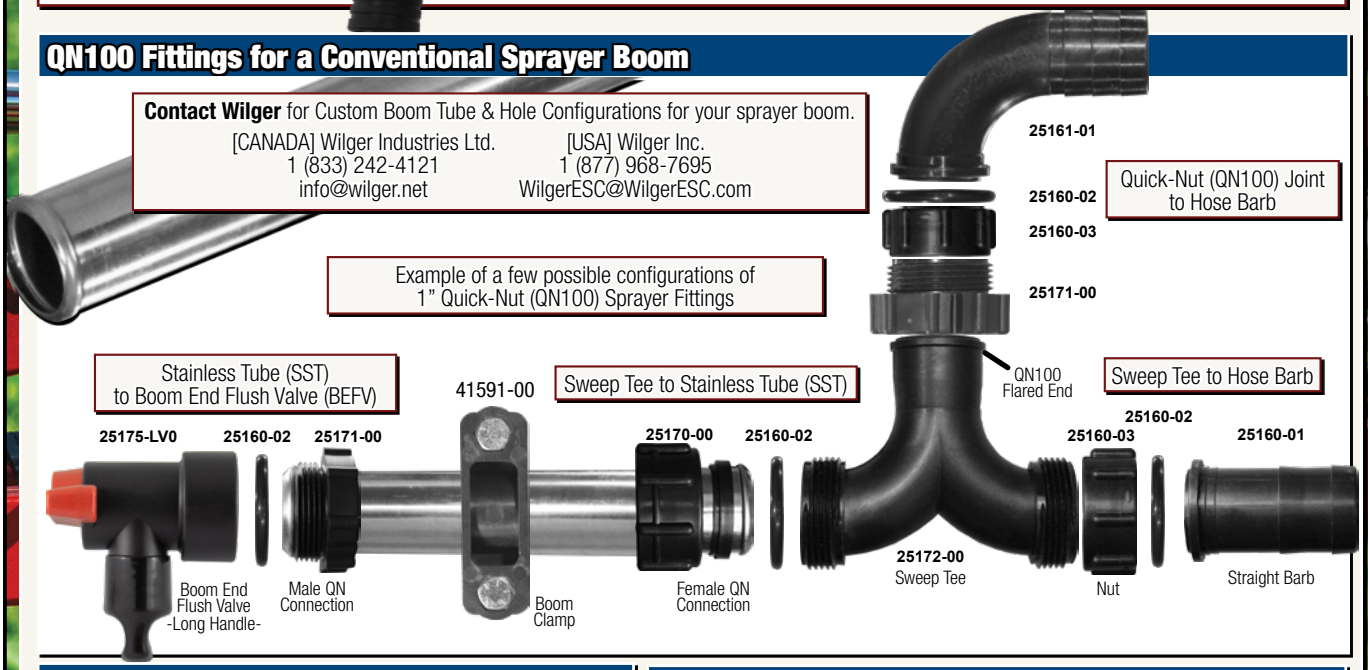
QN100 Fittings for a Conventional Sprayer Boom

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

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



QN100 Connectors & Components

Easy to use boom end fittings and connectors to adapt 1" Wilger Stainless Steel Tubing (SST) to QN100 fittings.

Component	Description	Part#
SS Tube End Adapters	Female Thread End, 2pc	25170-00
	Male Thread End, split ring	25171-00
Quick Nut	Nut with QN100-F Thread	25160-03
Plug	QN100 x Plug Cap	25163-01
O-ring for QN100 Connections	#219 O-ring, FKM	25160-02
	#219 O-ring, viton	25160-v2
Threaded Adapters	QN100 x 3/4" NPT-F Thread	25164-01
	1" NPT-F x QN100M Bushing	25137-00
Boom Tube Clamps	Half Clamp, for 1" SST (1.31" OD)	41591-00
	Half Clamp, for 1-1/4" Tube	41590-00
Replacement Parts	BEFV Cover Cap	25175-10
	BEFV Seal Repair Kit (2 valves)	25175-11
	BEFV Handle, Long	25175-13
	BEFV Handle, Short	25175-03

For QN100 Connections

25160-02

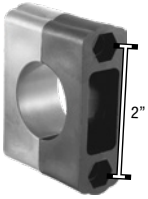
25160-03

25164-01

25163-01

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

25171-00
Split-ring male thread



2x 41591-00

QN100 to 1" Bushing
25137-00

25175-10

25175-03
Compact Handle

25175-13
Long Handle

QN100 Tee Fittings

Compact & lightweight sweep tees for any sprayer boom configuration.

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

25169-00 25172-00

QN100 Hose Barb Fittings

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

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

25162-01

25160-01 25161-01

QN100 & 1" NPT Boom End Flush Valves

Compact valve for full-drain flushing of booms.

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-LV0 25176-V0

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

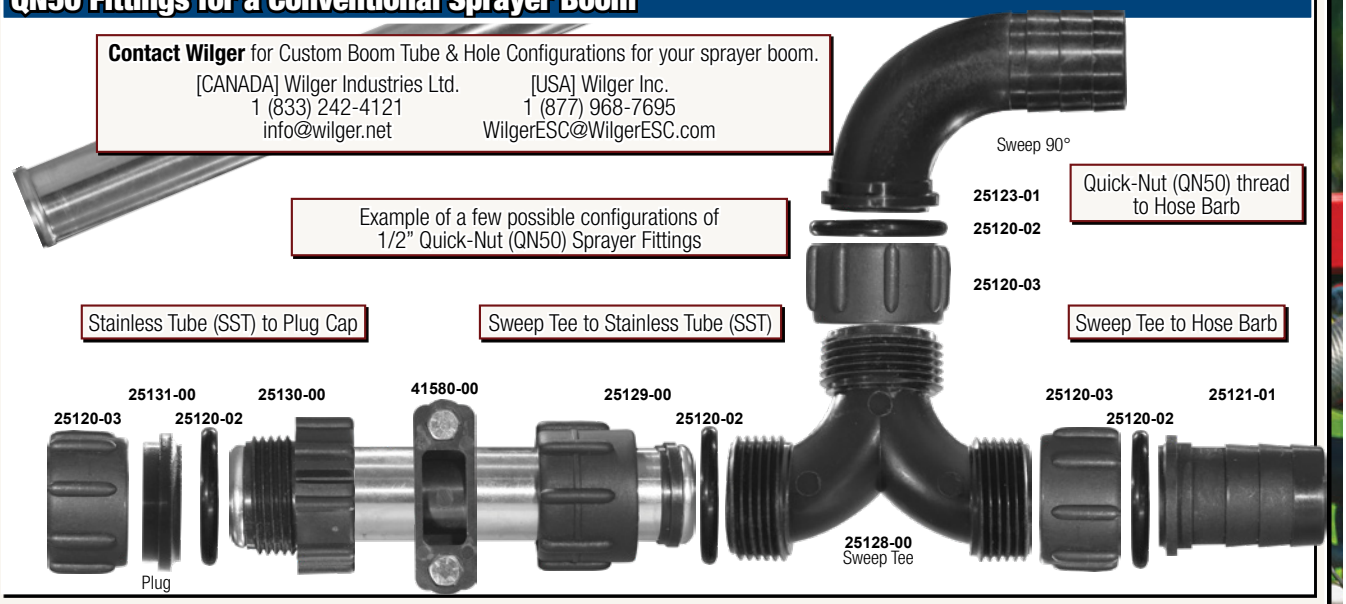
QN50 Fittings for a Conventional Sprayer Boom

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

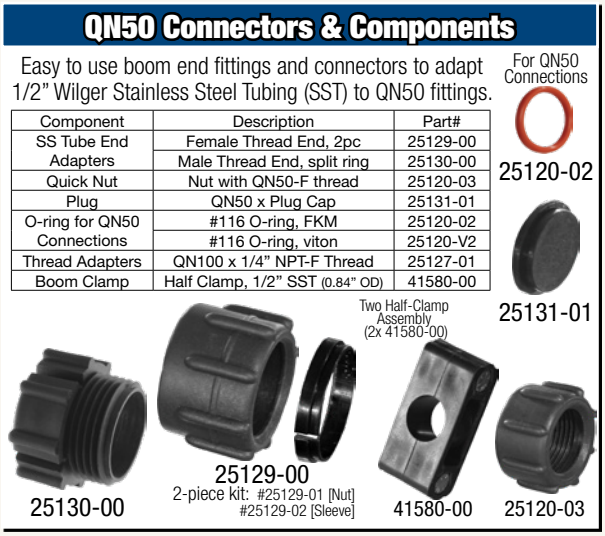
Example of a few possible configurations of 1/2" Quick-Nut (QN50) Sprayer Fittings



QN50 Connectors & Components

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

Component	Description	Part#
SS Tube End Adapters	Female Thread End, 2pc	25129-00
	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 Connections	#116 O-ring, FKM	25120-02
	#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



QN50 Tee & Hose Barb Fittings

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 Barb x QN50	QN50 x 1/2" HB, Straight	25120-01
	QN50 x 1/2" HB, 45° Sweep	25124-01
	QN50 x 1/2" HB, 90° Sweep	25122-01
3/4" Hose Barb x QN50	QN50 x 3/4" HB, Straight	25121-01
	QN50 x 3/4" HB, 45° Sweep	25125-01
	QN50 x 3/4" HB, 90° Sweep	25123-01

Case® Thin Wall Stainless (TWS) Tube Fittings

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 End Adapter (3pc)	Male End Adapter, Left Thread	41400-04
	Male End Adapter, Right Thread	41400-05
	Male End Adapter, Binding Nut	41400-02
Coupler	TWS-F to QN100-F Coupler	41401-01
Quick Nut	TWS Nut, use with QN100 HB	41400-03
O-ring for TWS Connections	#209 square O-ring, FKM	25160-04
	#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 w/ o-ring	41403-v0
Boom Clamp	Half Clamp, for 1" TWS (1.31" OD)	41591-00
Boom End Flush Valves (BEFV) & Replacement Parts	Flush Valve, Short Handle	41402-V0
	Flush Valve, Long Handle	41402-LV0
	BEFV Seal Repair Kit (2 valves)	25175-11
	BEFV Cover Cap	25175-10
	BEFV Handle, Long	25175-13
	BEFV Handle, Short	25175-03

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

Hose Barb Fittings for TWS

TWS Connectors are compatible with QN100 Hose Barb Fittings & Accessories

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

TWS to QN100 Coupler

Couples TWS-M and QN100M ends

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

O-ring Seal (ORS) Fittings & Components

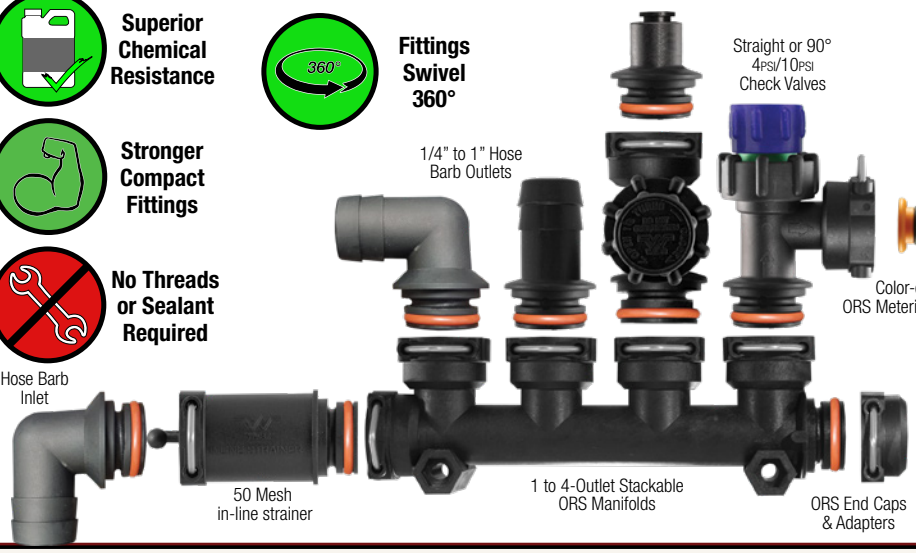
The O-ring Seal (ORS) Fitting Advantage

Superior Chemical Resistance

Fittings Swivel 360°

Stronger Compact Fittings

No Threads or Sealant Required



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

Standard FKM O-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


4 PSI Manual ON/OFF Check Valve
20551-P4


10 PSI Manual ON/OFF Check Valve, 90°
20551-00


10 PSI Diaphragm Check Valve, 90°
20550-00

10 PSI Manual ON/OFF Check Valve, Straight
20556-00


NEW

Check Valve Style	90° Outlet	Straight
Dia. Check Valve	20550-00	20555-00
[10PSI] Manual On/Off	20551-00	20556-00
[4PSI] Manual On/Off	20551-P4	20556-P4
Air-Off Operated	20552-00	20557-00
For PWM/no-check	20553-00	20558-00

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

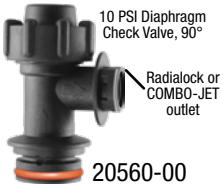
Manual ON/OFF Valves

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

When the knob is CLOSED, it turns off flow to that outlet ONLY. It does not turn off flow to any other outlets.

ORS to *COMBO-JET* Check Valves

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


10 PSI Diaphragm Check Valve, 90°
Radialock or COMBO-JET outlet
20560-00


10 PSI Manual ON/OFF Check Valve, 90°
20561-00

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

COMBO-JET Caps & Metering Orifices

A variety of radialock or COMBO-JET caps & metering orifices are available for hose barb, push-in-tube, spray tips, and other adapters.

ORS Hose Barb Inlets/Outlets

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

Hose Barbs	Orientation	Part#
1/4"	Straight	20500-00
3/8"	Straight	20501-00
	90°	20511-00
1/2"	Straight	20502-00
	90°	20512-00
5/8"	90°	20514-00
3/4"	Straight	20503-00
	90°	20513-00
1"	Straight	20504-00
	90°	20515-00


NEW 1/4" Hose Barb Straight
20500-00
1/2" Hose Barb Straight
20502-00
NEW 1" Hose Barb Straight
20504-00
3/8" 90°
20511-00
1/2" 90°
20512-00
3/4" 90°
20513-00

ORS Outlet Adapters & Plugs

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


20518-00


20519-00


20529-00


NEW
20549-00

Type	Orientation	Part#
1/4" NPT-F	Straight	20519-00
	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). [1]Ensure hoses connected are supported well.

ORS End Caps & Adapters

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

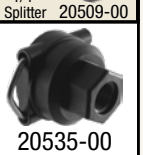
Style & Size		Part#
End Cap		20521-00
Straight Hose Barb	3/8"	20544-00
	1/2"	20545-00
	3/4"	20547-00
	1"	20548-00
Push-in Tube (seals on O.D.)	1/4"	20540-00
	5/16"	20541-00
	3/8"	20542-00
NPT-F Thread	1/4"	20535-00
	3/8"	20536-00
	1/2"	20537-00
NPT-M Thread	1/4"	20530-00

ORS Splitters & Couplers

Use ORS outlet & end caps to make swiveling, robust o-ring seal splitters, couplers and reducers.


20540-00 + e.g. 1/4" Splitter 20509-00


20530-00


20535-00


20521-00


NEW
20540-00


NEW 3/4" HB
20547-00

ORS Push-in-Tube Outlets

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


Ensure tubes are fully pushed in (at least 5/8" inside housing) for proper sealing and performance
20516-V0 (order -V0 for viton)


NEW Double 1/4" Push-in-tube Splitter
20509-00


NEW 1/4" Straight Push-In Tube
20506-00

Tube O.D.	Orientation	Part#
1/4"	Straight	20506-00
	Double	20509-00
	90°	20516-00
5/16"	Straight	20508-00
	90°	20528-00
3/8"	Straight	20507-00
	90°	20517-00


1/4" 90° Push-In Tube
20516-00

O-ring Seal (ORS) Parts & Manifolds

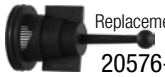
PRO TIP: *Lubricate ORS fittings before assembly*

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

NEW ORS In-line Strainer

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

20576-00
Strainer Assembly [50 Mesh]



Replacement Strainer
20576-02

20576-05

Description	Part#
ORS Strainer Assembly [50 Mesh]	20576-00
Replacement Strainer [50 Mesh]	20576-02
2" ORS Spacer Assy [no strainer]	20576-05

ORS Tees & Other Fittings

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

20524-00
[Port is open]

20523-00
[Port is blocked]

20520-00

20527-00

1/4" NPT-F Port can be drilled out for pressure gauge installation

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 [F x F x M]	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

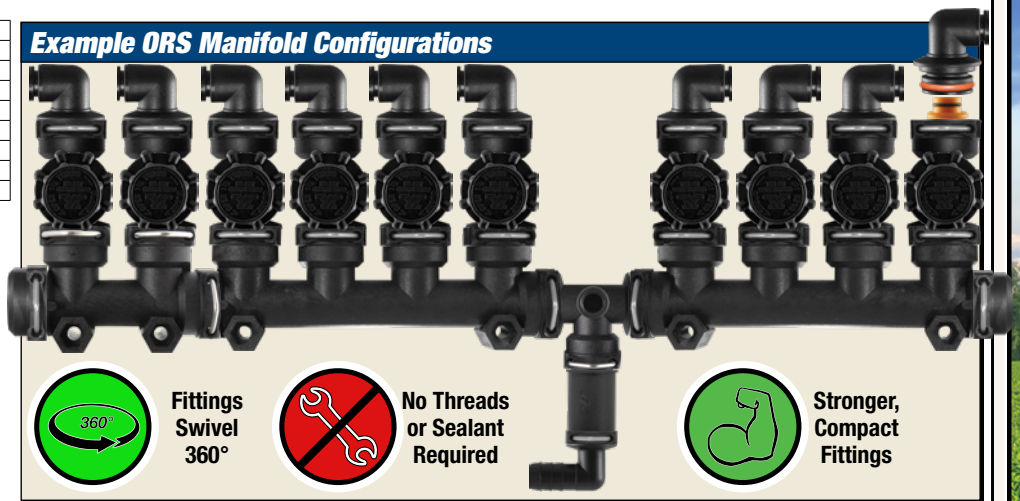
20573-00

20574-00

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

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

Example ORS Manifold Configurations



Fittings Swivel 360°

No Threads or Sealant Required

Stronger, Compact Fittings

Replacement Parts for ORS & Flow Indicator Fittings

Replacement components for ORS Fittings/Kits

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

20460-02

20460-04

20460-03

20460-11*

40225-04

*Manifold Kits include: 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)

Mounting Clamps for ORS

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

NEW
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.

Drilled Orifices

21XXX-00

Molded Orifices

21500-V01

Color-coded Consistent Rust-proof Easy to Handle

Metering Orifice type, seal & ORS Orifice Part#	Molded ORS Orifice	Custom Drilled Orifice	Blank Orifice/Plug
	VITON O-ring	FKM/viton O-ring	FKM/viton O-ring
	21500-VXXX	21XXX-00/21XXX-V0	21000-00/2100-V0
Color	Color-coded*	Black	Black

Use TIP WIZARD for metering orifice selection

Available on

TRY IT FREE AT WWW.WILGER.NET

Download on the App Store

GET IT ON Google Play

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

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 specific gravity/weight of liquid

$$\textbf{GPM (per outlet)} = \frac{\text{GPA} \times \text{mph} \times W \times \text{conv}}{5940} \qquad \text{GPA} = \frac{5940 \times \text{GPM (per outlet)}}{\text{mph} \times W \times \text{conv}}$$

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

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

Orifice Part#*	Flow Rate (US gallons/minute)						
	10PSI	15PSI	20PSI	25PSI	30PSI	35PSI	40PSI
21009-XX	0.005	0.006	0.007	0.008	0.009	0.010	0.010
21011-XX	0.008	0.010	0.011	0.013	0.014	0.015	0.016
21013-XX	0.011	0.013	0.016	0.017	0.019	0.021	0.022
21015-XX	0.014	0.018	0.020	0.023	0.025	0.027	0.029
21500-V003	0.015	0.018	0.021	0.024	0.026	0.028	0.030
21018-XX	0.021	0.025	0.029	0.033	0.036	0.039	0.042
21500-V005	0.025	0.030	0.035	0.039	0.043	0.046	0.050
21020-XX	0.026	0.032	0.037	0.041	0.045	0.049	0.052
21022-XX	0.031	0.037	0.043	0.048	0.053	0.057	0.061
21500-V007	0.033	0.041	0.047	0.053	0.058	0.063	0.067
21025-XX	0.039	0.048	0.056	0.062	0.068	0.073	0.079
21026-XX	0.043	0.053	0.061	0.068	0.075	0.081	0.087
21027-XX	0.046	0.056	0.065	0.072	0.079	0.085	0.091
21028-XX	0.049	0.060	0.069	0.078	0.085	0.092	0.098
21500-V01	0.050	0.062	0.071	0.079	0.087	0.094	0.100
21029-XX	0.064	0.078	0.090	0.100	0.110	0.119	0.127
21031-XX	0.064	0.078	0.090	0.100	0.110	0.119	0.127
21500-V015	0.075	0.092	0.106	0.119	0.130	0.140	0.150
21035-XX	0.081	0.099	0.114	0.128	0.140	0.151	0.162
21037-XX	0.087	0.106	0.122	0.137	0.150	0.162	0.173
21039-XX	0.098	0.120	0.139	0.155	0.170	0.184	0.196
21500-V02	0.104	0.127	0.147	0.164	0.180	0.194	0.208
21041-XX	0.110	0.134	0.155	0.173	0.190	0.205	0.219
21043-XX	0.115	0.141	0.163	0.183	0.200	0.216	0.231
21500-V025	0.127	0.156	0.180	0.201	0.220	0.238	0.254
21046-XX	0.133	0.163	0.188	0.210	0.230	0.248	0.266
21047-XX	0.139	0.170	0.196	0.219	0.240	0.259	0.277
21049-XX	0.150	0.184	0.212	0.237	0.260	0.281	0.300
21500-V03	0.150	0.184	0.212	0.237	0.260	0.281	0.300
21051-XX	0.162	0.198	0.229	0.256	0.280	0.302	0.323
21052-XX	0.167	0.205	0.237	0.265	0.290	0.313	0.335
21055-XX	0.191	0.233	0.269	0.301	0.330	0.356	0.381
21500-V04	0.202	0.247	0.286	0.320	0.350	0.378	0.404
21060-XX	0.225	0.276	0.318	0.356	0.390	0.421	0.450
21061-XX	0.231	0.283	0.327	0.365	0.400	0.432	0.462
21063-XX	0.248	0.304	0.351	0.393	0.430	0.464	0.497
21500-V05	0.254	0.311	0.359	0.402	0.440	0.475	0.508
21064-XX	0.254	0.311	0.359	0.402	0.440	0.475	0.508
21065-XX	0.260	0.318	0.367	0.411	0.450	0.486	0.520
21067-XX	0.277	0.339	0.392	0.438	0.480	0.518	0.554
21500-V06	0.300	0.368	0.425	0.475	0.520	0.562	0.600
21070-XX	0.306	0.375	0.433	0.484	0.530	0.572	0.612
21073-XX	0.329	0.403	0.465	0.520	0.570	0.616	0.658

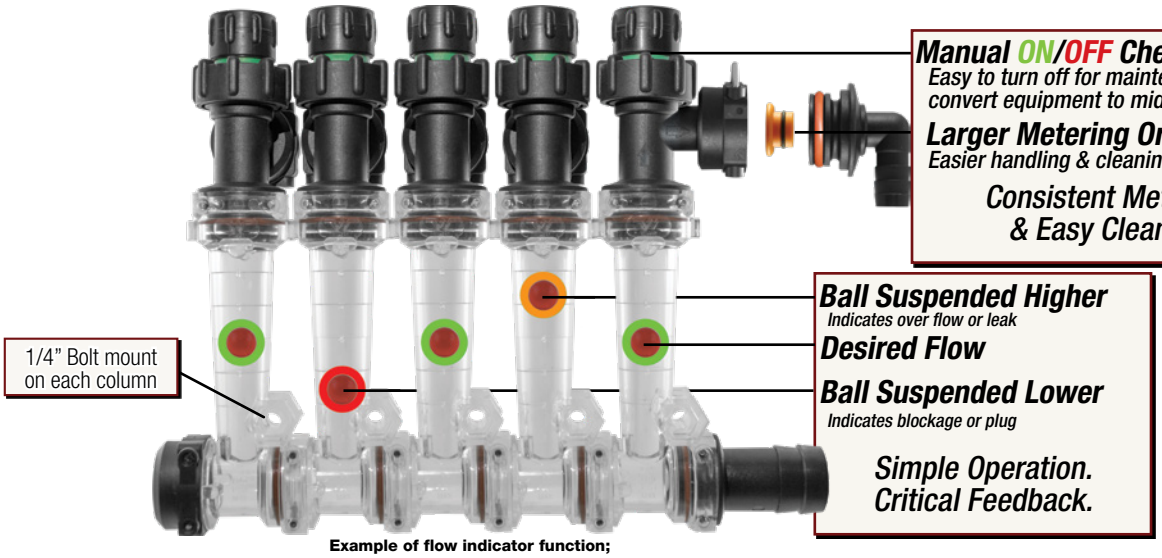
Orifice Part#*	Flow Rate (US gallons/minute)						
	10PSI	15PSI	20PSI	25PSI	30PSI	35PSI	40PSI
21075-XX	0.346	0.424	0.490	0.548	0.600	0.648	0.693
21078-XX	0.387	0.474	0.547	0.612	0.670	0.724	0.774
21500-V08	0.398	0.488	0.563	0.630	0.690	0.745	0.797
21081-XX	0.410	0.502	0.580	0.648	0.710	0.767	0.820
21083-XX	0.450	0.552	0.637	0.712	0.780	0.842	0.901
21086-XX	0.468	0.573	0.661	0.739	0.810	0.875	0.935
21089-XX	0.491	0.601	0.694	0.776	0.850	0.918	0.981
21500-V10	0.502	0.615	0.710	0.794	0.870	0.940	1.00
21091-XX	0.525	0.643	0.743	0.831	0.910	0.983	1.05
21093-XX	0.548	0.672	0.776	0.867	0.950	1.03	1.10
21096-XX	0.589	0.721	0.833	0.931	1.02	1.10	1.18
21500-V125	0.624	0.764	0.882	0.986	1.08	1.17	1.25
21102-XX	0.652	0.799	0.923	1.03	1.13	1.22	1.30
21104-XX	0.675	0.827	0.955	1.07	1.17	1.26	1.35
21107-XX	0.733	0.898	1.037	1.16	1.27	1.37	1.47
21500-V15	0.751	0.919	1.061	1.19	1.30	1.40	1.50
21110-XX	0.774	0.948	1.094	1.22	1.34	1.45	1.55
21113-XX	0.820	1.00	1.16	1.30	1.42	1.53	1.64
21116-XX	0.860	1.05	1.22	1.36	1.49	1.61	1.72
21120-XX	0.889	1.09	1.26	1.41	1.54	1.66	1.78
21125-XX	0.981	1.20	1.39	1.55	1.70	1.84	1.96
21500-V20	0.999	1.22	1.41	1.58	1.73	1.87	2.00
21128-XX	1.02	1.25	1.45	1.62	1.77	1.91	2.04
21130-XX	1.06	1.30	1.50	1.68	1.84	1.99	2.12
21136-XX	1.19	1.46	1.68	1.88	2.06	2.23	2.38
21140-XX	1.26	1.55	1.79	2.00	2.19	2.37	2.53
21144-XX	1.31	1.61	1.85	2.07	2.27	2.45	2.62
21147-XX	1.35	1.65	1.90	2.13	2.33	2.52	2.69
21150-XX	1.44	1.77	2.04	2.28	2.50	2.70	2.89
21152-XX	1.49	1.82	2.11	2.36	2.58	2.79	2.98
21156-XX	1.55	1.90	2.20	2.46	2.69	2.91	3.11
21161-XX	1.63	2.00	2.31	2.58	2.83	3.06	3.27
21166-XX	1.71	2.10	2.42	2.71	2.97	3.21	3.43
21172-XX	1.88	2.31	2.66	2.98	3.26	3.52	3.76
21177-XX	2.00	2.45	2.83	3.16	3.46	3.74	4.00
21182-XX	2.08	2.55	2.95	3.30	3.61	3.90	4.17
21187-XX	2.21	2.70	3.12	3.49	3.82	4.13	4.41
21196-XX	2.45	3.00	3.46	3.87	4.24	4.58	4.90
21205-XX	2.65	3.25	3.75	4.19	4.59	4.96	5.30
21213-XX	2.85	3.49	4.03	4.51	4.94	5.34	5.70
21218-XX	2.98	3.65	4.21	4.71	5.16	5.57	5.96
21234-XX	3.47	4.25	4.91	5.49	6.01	6.49	6.94
21250-XX	4.00	4.90	5.66	6.33	6.93	7.49	8.00

Wilger Visual Ball Flow Indicators

The Flow Indicator Advantage

See Any Application Accurately

- **Fittings Swivel 360°**
- **Clear Sight Column**
- **Superior Chemical Resistance**
- **Simple, without Electronics**
- **No Threads or Sealant Required**

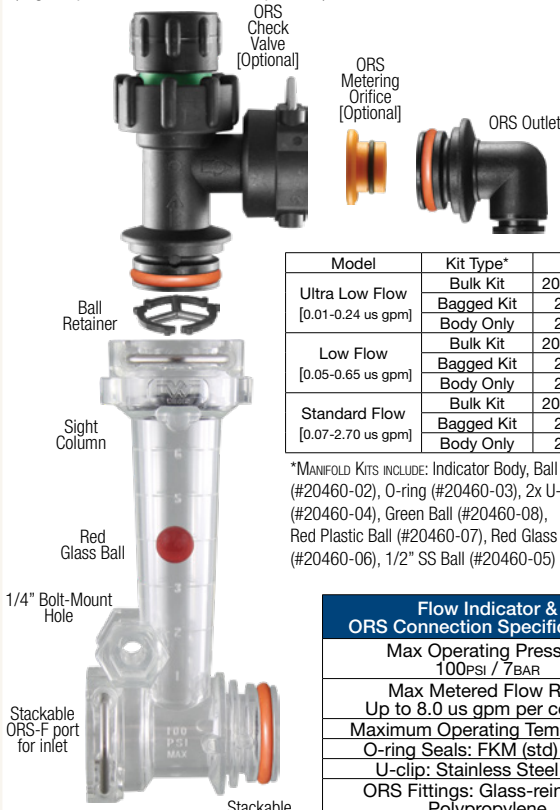


Example of flow indicator function; Overlay colors are for visual purposes only

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)



Model	Kit Type*	Part#
Ultra Low Flow [0.01-0.24 us gpm]	Bulk Kit	20475-BULK
	Bagged Kit	20475-00
	Body Only	20475-01
Low Flow [0.05-0.65 us gpm]	Bulk Kit	20470-BULK
	Bagged Kit	20470-00
	Body Only	20470-01
Standard Flow [0.07-2.70 us gpm]	Bulk Kit	20460-BULK
	Bagged Kit	20460-00
	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 Connection Specifications*
Max Operating Pressure: 100PSI / 7BAR
Max Metered Flow Rate: Up to 8.0 us gpm per column
Maximum Operating Temp: 185°F
O-ring Seals: FKM (std) / Viton
U-clip: Stainless Steel (302)
ORS Fittings: Glass-reinforced Polypropylene
Flow Column Material: TPX™ (Polymethylpentene)

Isolated Feed - Ball Flow Indicators

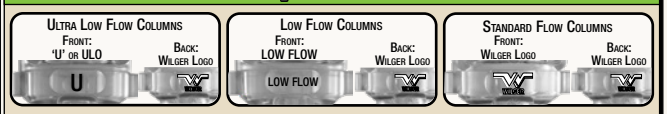
For monitoring single lines from individual feeds
(e.g. Squeeze pump monitoring, chemical injector pumps)

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 (#20460-05)

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

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

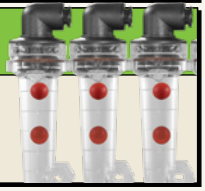


Required Storage for Flow Indicator Columns

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 adapt to cover changes in rate & speed*



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.

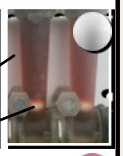
Ball Description & Color	Part #	Flow Indicator Columns & Flow Ranges*		
		Ultra Low Flow	Low Flow	Standard Flow
Orange Polypropylene Ball*	20460-13	0.01-0.04 us gpm	0.05-0.12 us gpm	0.07-0.25 us gpm
Green Polypropylene Ball*	20460-08	0.01-0.04 us gpm	0.05-0.12 us gpm	0.07-0.25 us gpm
Red Celcon Ball*	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

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

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 liquids.



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

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 5 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 in-line 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 6 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.

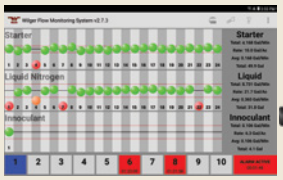
STEP 8 ORS End Caps & Adapters
A variety of end caps are available as adapters which can be used for many situations, but typical an ORS end cap would be used. Two end caps are required per manifold if a Tee fitting is used.

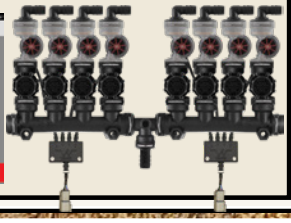
Do you plant at night or in low visibility? Take a look at Wilger's Electronic Flow Monitoring (EFM) System

Wilger's row-by-row flowmeter uses the same ORS parts and manifolds, and can be simply added in-line 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 196 rows), for flow rates of 0.04-1.53 us gpm.

Flowmeter can also be installed on flow indicators to provide greater accuracy





Wilger Electronic Flow Monitoring System

The Electronic Flow Monitoring Advantage

See Any Application with Row-by-Row Accuracy

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

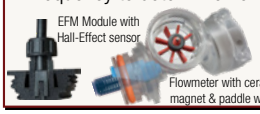
- **Fittings Swivel 360°**
- **Crystal Clear Flowmeter**
- **Superior Chemical Resistance**
- **Serviceable Flowmeter for Ag.**
- **High Accuracy Flowmeter**

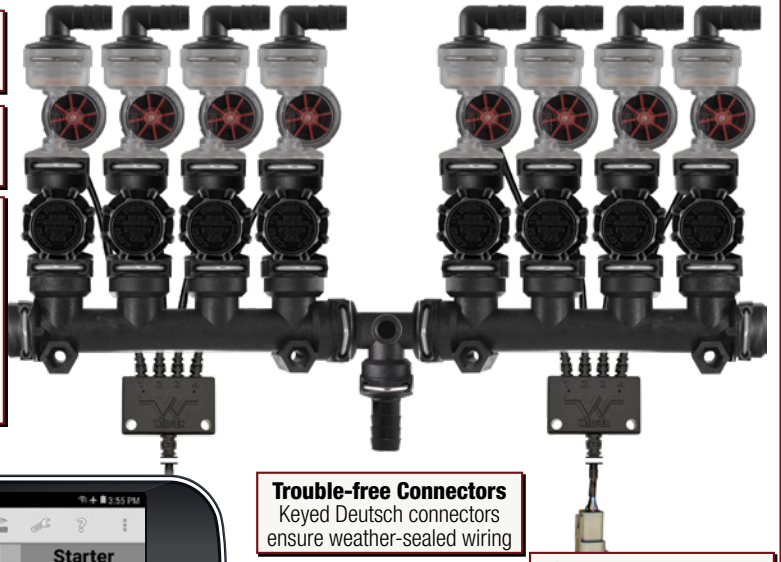
Patented Flowmeter Jets
Canadian Patent No. 2951789
AUS Patent No. 2017376849
U.S. Patent No.10,845,228

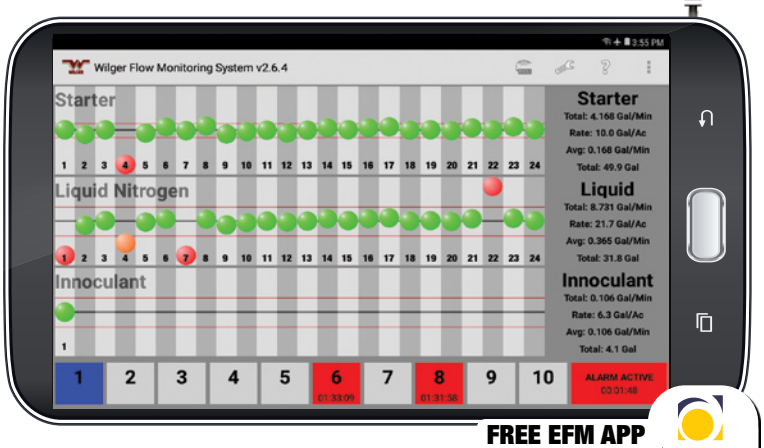
Crystal Clear Flowmeters
Enables easy system troubleshooting & verification

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







FREE EFM APP POWERED BY AGTRON

The Electronic Flow Monitoring system (powered by Agtron) requires an Android 10 OS Tablet or newer.

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 Alarms
Customize 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

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

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. It just takes a minute.

Need help with EFM system SETUP, USE & Troubleshooting? Check www.wilger.net

EFM System Manual

The manual is accessible online (wilger.net) and within the EFM app via the (?) button. It contains Setup, Troubleshooting, Considerations, Maintenance and more.

Video Setup Guide

The video describes in detail considerations and how to reference sensor locations properly and usage in the EFM system app.

Online Troubleshooting

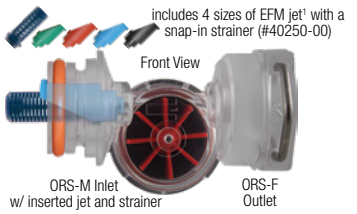
The dedicated page on the website has the most common recent fixes, guides, and troubleshooting information. Check it for quick troubleshooting to save time.

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.

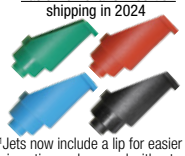
20580-00 EFM KIT



20580-06 Body Assembly

Product	Description	Part#
Electronic Flowmeter Body [0.04-1.53 us gpm]	Flowmeter Assy Kit	20580-00
	Body Assembly (no jets)	20580-06
	Body Only (clear plastic)	20580-01
Replacement Jets (without 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

IMPROVED EFM JET DESIGN
[1]Easier removal & insertion shipping in 2024



[1]Jets now include a lip for easier insertion and removal without a strainer

Required Storage for Flowmeters

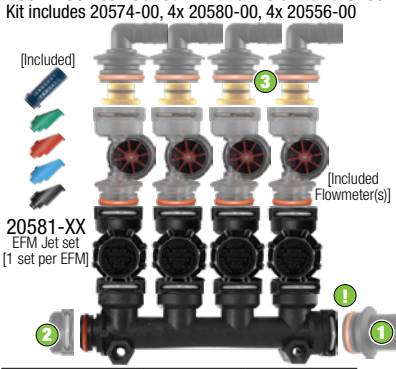
Wilger Flowmeters are made of a specialty UV-stabilized compound (TPX™) that maximizes chemical resistance, providing compatibility for a huge range of chemical applications. As with any plastic, UV exposure degrades the flow indicator columns.

To maximize flowmeter clarity & longevity, completely cover the flowmeters from UV exposure (sun/etc.) whenever possible.

Electronic Flowmeter Manifolds

Pre-assembled manifolds [1-4 Outlets] with a flowmeter and check valve. Simply assemble manifolds, 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



How to Complete a Manifold
- ! Stack manifold sections to desired size.
- 1 Add ORS inlet or center-fed tee (#20526-00)
- 2 Add ORS end-cap (2x if TEE is used)
- 3 Add ORS outlets & metering orifice (opt.)

Ensure hose/tube connections minimize strain/weight on manifold parts and joints.

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
	90°	20633-00
4 EFM Outlet	Straight	20644-00
	90°	20634-00

20643-00 3-outlet EFM manifold

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

DEMO ECU & Small Planter Kit (16 or less rows, non-expandable)

The following is a Compact ECU DEMO unit, which can be used for showroom/demonstrations, but also functional for planters with 16 rows or less being monitored. The CAN to POWER/USB adapter can be used where WIFI is not an option (tradeshows, etc.). The unit also broadcasts via WIFI.

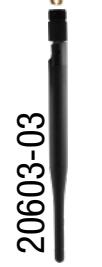
Product	Description of DEMO Kit Parts	Part#
DEMO ECU	DEMO ECU with built-in 16CH node. One per Demo unit (requires 12v x 1.25 amp)	20625-01
DEMO 16CH Harness	DEMO ECU Harness, with A/B/C/D for up to 4 quad-sensor cables to be connected	20625-02
DEMO Power Supply Harness	CAN to USB (for wired tablet without WIFI) & 12v Power Cable (2-wire, 7' length). USB-A port is powered to supply tablet power.	20625-03
Quad-Sensor Cable	A normal quad-sensor cable, used in any Wilger EFM systems via 6-pin connector. Connects for the A/B/C/D of 20625-02. Order 4x 20585-00 for full 16 sensors.	4x 20585-00
Antenna (7")	If ECU connection is via WIFI, an antenna should be used to connect to the tablet.	20603-03
EFM Manifolds	1,2,3, or 4-outlet manifolds with check valves and an included EFM flowmeter. Simply order inlet/outlets/tee and end caps to complete manifold.	20644-00 (4-outlet)

Compact ECU
parts not to scale 20625-01

Switch for Wired USB Mode

20625-03
CAN to 12v Power Harness

20625-02
DEMO ECU Product Harness*
*Demo harness is not expandable



20603-03
Antenna

Example 16-row manifold for demonstration

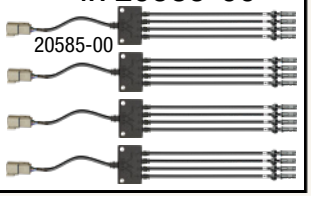
EFM DEMO System Parts Checklist

ELECTRONICS Parts
- ☐ 1x DEMO ECU (#20625-01)
- ☐ 1x Demo Product Harness (#20625-02)
- ☐ 1x Demo Power/USB Cable (#20625-03)
- ☐ 1x Antenna (#20603-03)
- ☐ 4x Quad-sensor cable (4x #20585-00)
- ☐ 1x Android Tablet & Mount (non-Wilger) (e.g. Samsung Tab A8)

PLUMBING Parts
- ☐ 4x 4-Outlet Manifolds (#20644-00)
- ☐ 1x ORS Tee (#20526-00)
- ☐ 1x 90° 1/2" Hose Inlet (#20513-00)
- ☐ 16x 1/4" Push-in-tube (#20516-00)
- ☐ 2x End Cap (#20521-00)
- ☐ 16x Metering Orifice (#21500-v03)
- ☐ 1x 5GPM Electric pump (non-Wilger) Small water tank w/ plumbing

Want to show what the system looks like, without a pump? Download the app, enter info, and plug in some example sensor information, and run the app in TEST/DEMO mode. (Simulated info) Contact Wilger for more info.

Quad-sensor cable
Connects to A / B / C / D
4x 20585-00



Wilger Electronic Flow Monitoring ECUs & Electronics

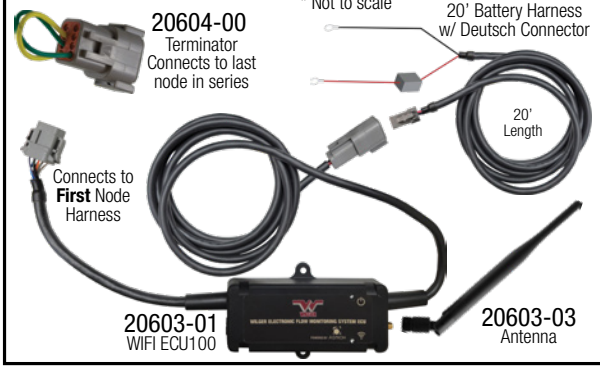
Base Electronic ECU & Kits for EFM Systems (expandable up to 196 rows/sensors)

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, 20' 12v Battery Harness (with fuse), Terminator, 7" Antenna	20603-00
ECU200 Base Kit	ECU200, CAN to 12v Harness, 20' 12v Battery Harness (with fuse), ECU200 Node Harness (#20606-02), Terminator, 7" Antenna, 4x Quad-sensor cables (#20585-00)	20606-00
ECU Splitter Kit	ECU Splitter Cable, Terminator	20605-00
ECU/Node to Node	12' Extension Harness (Node to ECU/Node)	20616-12
Extension Harness	24' Extension Harness (Node to ECU/Node)	20616-24

20603-00 **ECU100** Base Kit, Breakdown*

* Not to scale



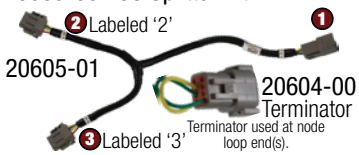
NEW ECU100 or ECU200? Whats the difference?

ECU100 and ECU200 share identical function as a controller. Both create their own WIFI signal to the tablet in the cab, sending row-by-row flowmeter information. They differ somewhat in the first node connected, and potentially the use of other components, the harnesses, and cables used.

The ECU200 effectively integrates the first 16CH node, as well as provides a CAN plug for future-proofed connections.

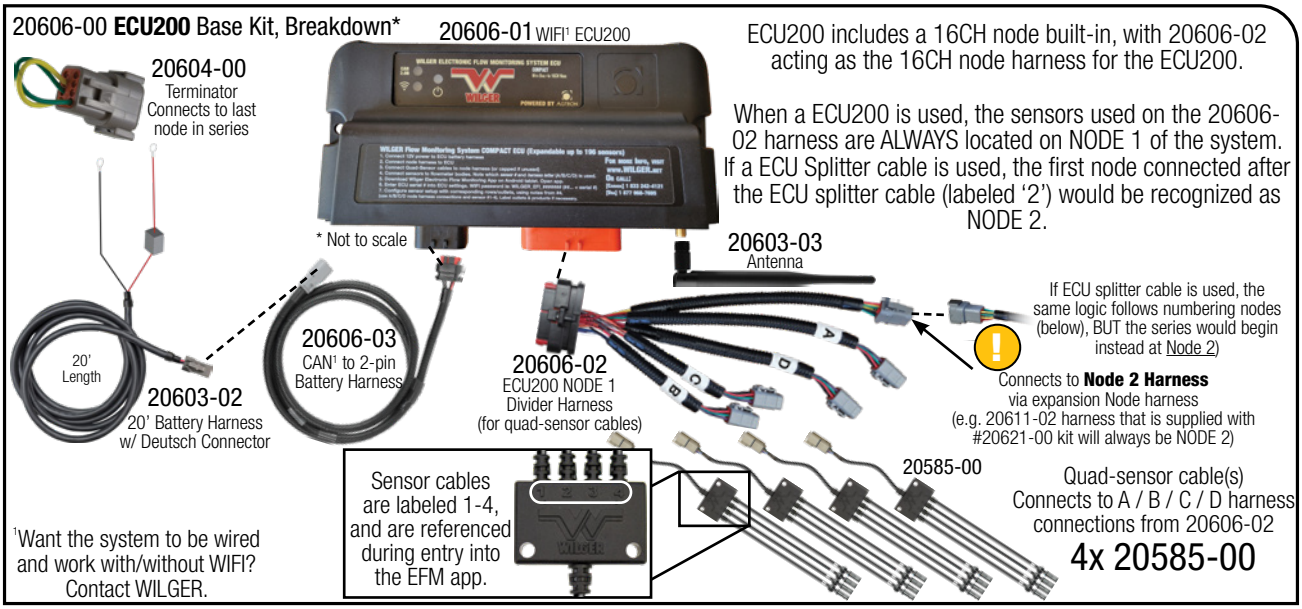
ECU Type	ECU100	ECU200
Combined Node?	No integrated 16CH node	First 16CH node built-in
Expandable Size?	Yes, up to 196 sensors	Yes, up to 196 sensors
Power Cable	2-pin 12v PWR harness	CAN to 2-pin 12v PWR harn.
Compatibility	Both are compatible to all EFM system components	

20605-00 ECU Splitter Kit



1. Connects to ECU100 or ECU200.
2. If ECU100, first node is Node 1. If ECU200, first node is Node 2. (As ECU200 has built-in Node1)
3. Connects to 2nd node series loop. Node # determined by last node in 1st series loop.

20606-00 **ECU200** Base Kit, Breakdown*



ECU200 includes a 16CH node built-in, with 20606-02 acting as the 16CH node harness for the ECU200.

When a ECU200 is used, the sensors used on the 20606-02 harness are ALWAYS located on NODE 1 of the system. If a ECU Splitter cable is used, the first node connected after the ECU splitter cable (labeled '2') would be recognized as NODE 2.

If ECU splitter cable is used, the same logic follows numbering nodes (below), BUT the series would begin instead at Node 2)

Connects to **Node 2 Harness** via expansion Node harness (e.g. 20611-02 harness that is supplied with #20621-00 kit will always be NODE 2)

Quad-sensor cable(s) Connects to A / B / C / D harness connections from 20606-02

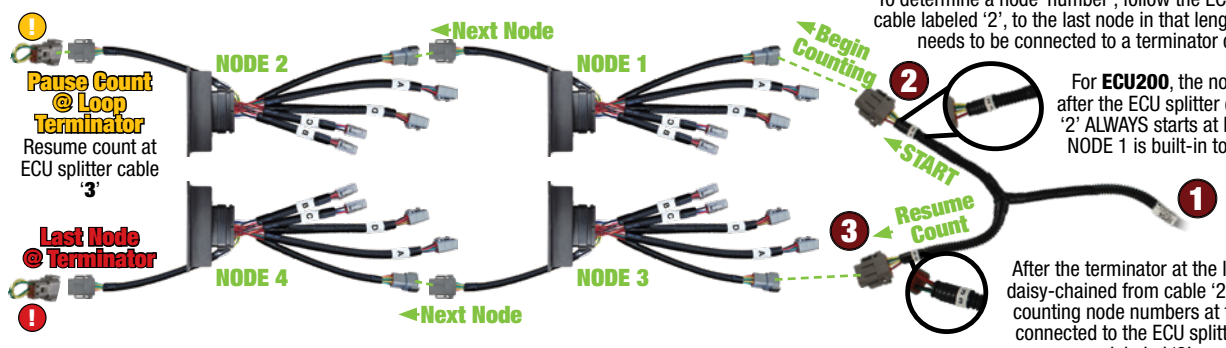
4x 20585-00

[1]Want the system to be wired and work with/without WIFI? Contact WILGER.

! Using an ECU Splitter Cable with ECU100 - Navigating 'Node Numbers' & Locations

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

Terminators are required for the end of each node daisy-chained loop.



To determine a node 'number', follow the ECU splitter cable labeled '2', to the last node in that length, which needs to be connected to a terminator cap.

For **ECU200**, the node count after the ECU splitter connection '2' ALWAYS starts at Node 2 (as NODE 1 is built-in to ECU200)

After the terminator at the last node daisy-chained from cable '2', resume counting node numbers at the node connected to the ECU splitter cable labeled '3'.

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 Extensions	6' Extension Cable (16CH Harness to quad-sensor cable)	20615-06
	12' Extension Cable (16CH Harness to quad-sensor cable)	20615-12

Capping Unused Connections & Sensors

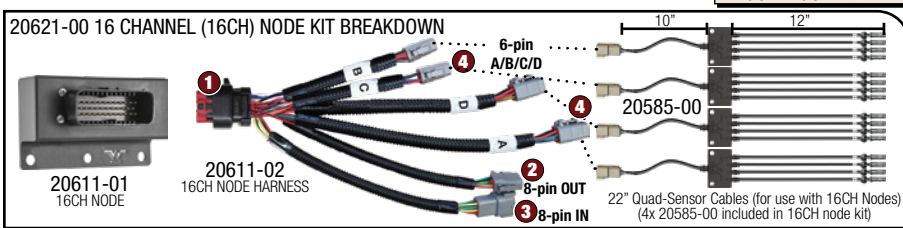
For proper function of your EFM system, each unused connection must be sealed with a node harness cover cap, sensor cap, or terminator. Unsealed Connections have increased chance of shorts, electrical shock, or damage to the system or equipment.

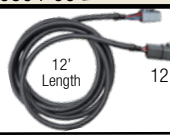
Unused Node Connections
Cap unused A/B/C/D with 16CH node harness
#20612-00

Terminators
Cap all 'last node' connections
#20604-00

Unused Sensors
Cap unused sensors with rubber cap
#20585-01

20621-00 16 CHANNEL (16CH) NODE KIT BREAKDOWN





20615-12
12' NODE to Quad-Sensor Extension
(6-pin connector)

1. Node Connects to Harness
2. Connects to next node in series
3. Connects to ECU (or previous node)
4. Connects to (4) quad-sensor cables

Limited Stock 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 Cables (lim. qty)	6" single-sensor Cable for 4CH Node harness	20584-00
	10' single-sensor Cable for 4CH Node harness	20584-10

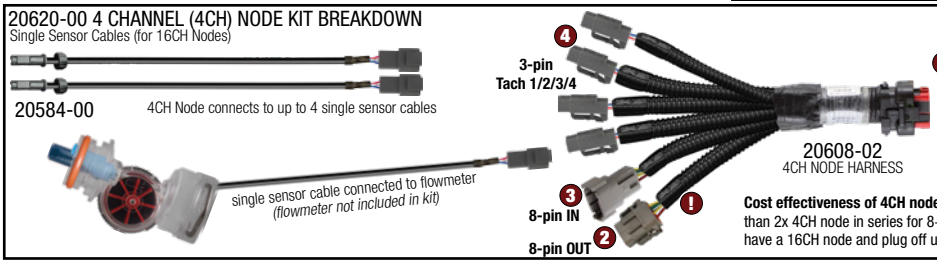
Capping Unused Connections

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 harness connections
#20609-00

Terminators
Cap all 'last node in series' connections
#20604-00

20620-00 4 CHANNEL (4CH) NODE KIT BREAKDOWN
Single Sensor Cables (for 16CH Nodes)



1. Node Connects to Harness
2. Connects to next node in series
3. Connects to ECU (or previous node)
4. Connects up to 4 single sensor cables

Cost effectiveness of 4CH nodes: For any configurations requiring more than 2x 4CH node in series for 8+ sensors, it can be more cost effective to have a 16CH node and plug off unused harness connectors.

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 Extensions	12' Extension Cable (8-pin Harness male to 8-pin female)	20616-12
	24' Extension Cable (8-pin Harness male to 8-pin female)	20616-24
Node to Quad-Sensor Extensions	6' Extension Cable (16CH Harness to quad-sensor cable)	20615-06
	12' Extension Cable (16CH Harness to quad-sensor cable)	20615-12
	24' Extension Cable (16CH Harness to quad-sensor cable)	20615-24

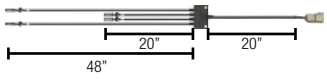
30' Antenna Extension

30' co-axial antenna extension cable to bring ECU antenna closer to the tractor

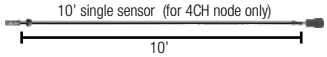
20603-05
30' Extension

ECU antenna has 100' range (50' one-way)

20585-04
Quad-sensor cable (for 16CH node only)



20584-10
10' single sensor (for 4CH node only)

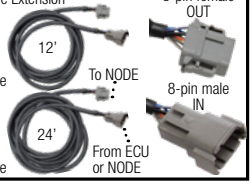


Extensions: ECU/Node to Node

ECU/Node to Node Extension (8-pin)

20616-12
12' Extension
ECU/Node to Node

20616-24
24' Extension
ECU/Node to Node



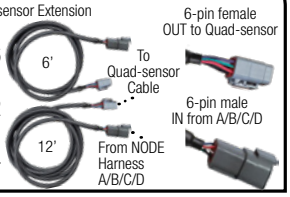
Extensions: Node to Quad-sensor

Node to Quad-sensor Extension (6-pin)

20615-06
6' Extension

20615-12
12' Extension

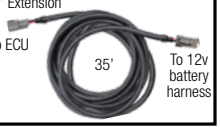
20615-24
24' Extension



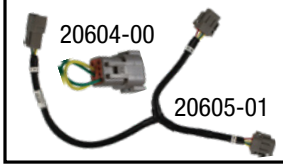
12v power Extension

2-pin Extension harness for 12v power from tractor

20603-07
35' Extension



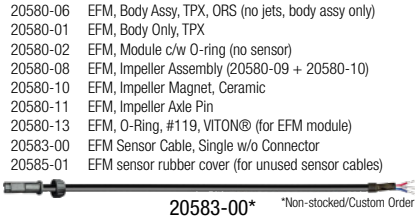
20605-00 ECU Splitter Kit includes



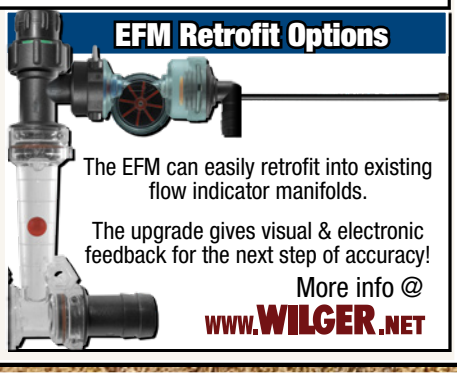
Flowmeter Component Parts

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.

20580-06	EFM, Body Assy, TPX, ORS (no jets, body assy only)
20580-01	EFM, Body Only, TPX
20580-02	EFM, Module c/w O-ring (no sensor)
20580-08	EFM, Impeller Assembly (20580-09 + 20580-10)
20580-10	EFM, 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)



EFM Retrofit Options



The EFM can easily retrofit into existing flow indicator manifolds.

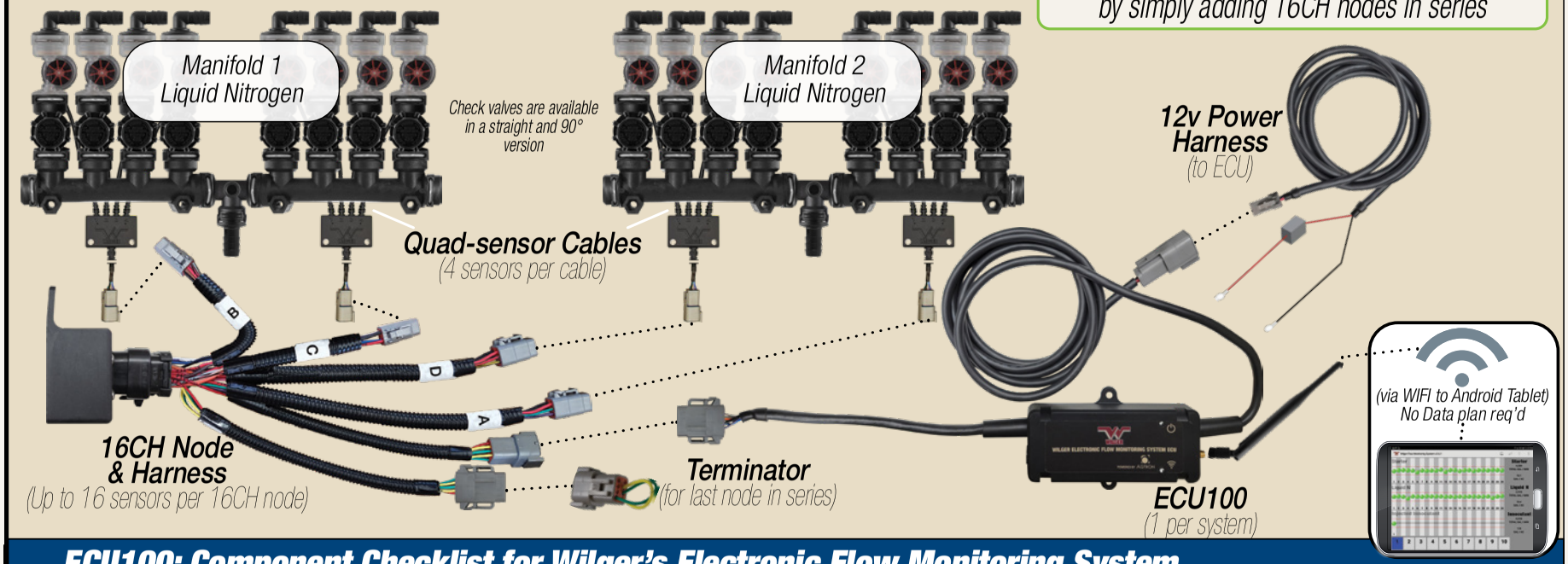
The upgrade gives visual & electronic feedback for the next step of accuracy!

More info @ WWW.WILGER.NET

Wilger Electronic Flow Monitoring System ECU100 Example

ECU100 on a 16-row Planter, applying liquid fertilizer

Expand system to larger planters or implements by simply adding 16CH nodes in series



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.

1. **Order 1 ECU100 kit** per system. (#20603-00)
2. Add the # of outlets (including multiples for monitoring multiple products). **Divide the total # of outlets by 16.** Round up to nearest whole number. **Order that many 16CH Node kits**. (#20621-00)
   4CH Node kits can be effective for 'extra' outlets in systems, but 16CH node kits are typically cost effective.
3. Order **1 EFM assembly kit (#20580-00) per outlet** (incl. multiples for monitoring multiple products)
   Alternatively, order EFM manifold kits (#20631-00 to #20634-00) to fit your requirements for sections.
4. 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.
5. [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.

EFM System Checklist for ECU100

ELECTRONICS Parts

- ☐ 1x ECU100 KIT per system
- ☐ 1x 16CH Node Kit per 16 outlets
- ☐ 1x Flowmeter (EFM) per outlet
- ☐ Extension harnesses if req'd
- ☐ 1x Android Tablet [Android 10 OS or newer. Avoid non-brand name tablets that may not be running full OS)]

PLUMBING Parts

- ☐ 1x ORS Manifold Outlet per outlet
- ☐ 1x ORS Outlet Fitting per outlet
- ☐ 1x ORS Check Valve per outlet
- ☐ 1x Inlet Feed or Tee per manifold
- ☐ 1x End Cap per manifold [2x if center Tee]
- ☐ 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

Build your EFM system liquid kit on 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.

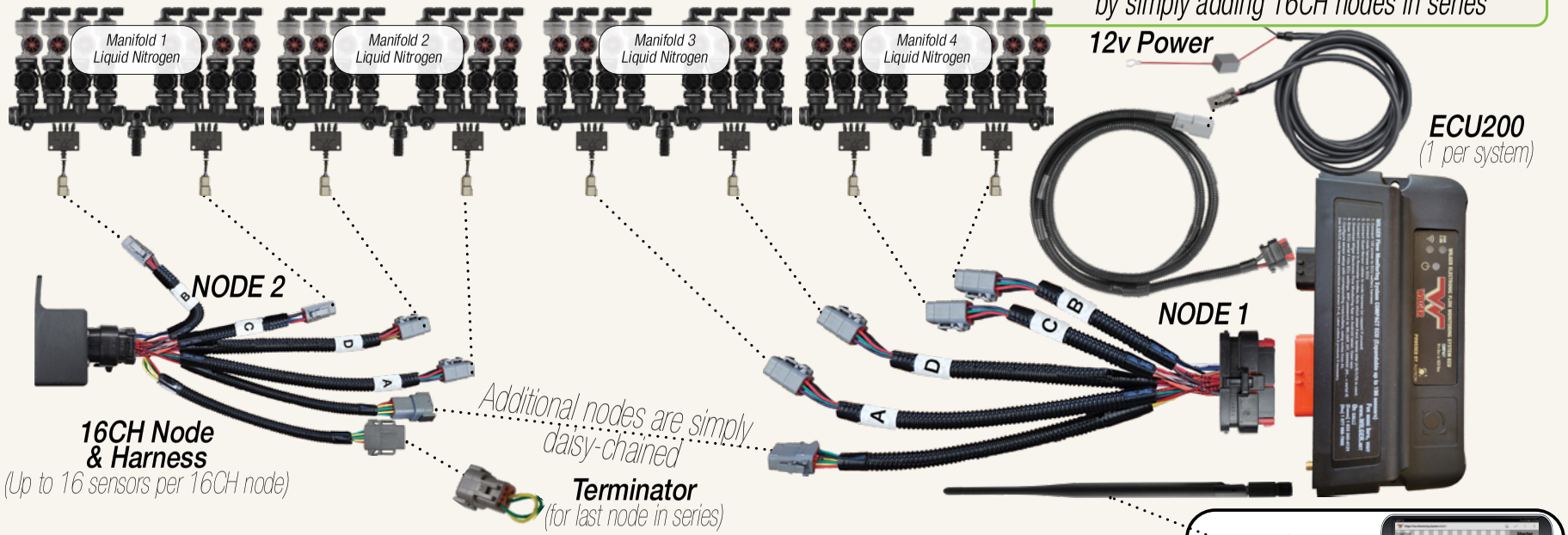
EFM VIDEO TUTORIALS - Setting up EFM App on Android Tablet

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

Wilger Electronic Flow Monitoring System ECU200 Example

ECU200 on a 32-row Planter, applying liquid fertilizer

Expand system to larger planters or implements by simply adding 16CH nodes in series



ECU200: Component Checklist for Wilger's Electronic Flow Monitoring System

! Since the ECU200 includes the FIRST 16CH product node, it changes the ordering checklist slightly.

1. **Order 1 ECU200 kit** per system. (#20606-00)
2. Add the # of outlets (incl. multiples for monitoring multiple products). **First subtract 16 outlets from the total (as the first 16 are included with ECU200), then divide the total # of outlets by 16.** Round up to nearest whole number. **Order that many 16CH Node kits**. (#20621-00)
   4CH Node kits can be effective for 'extra' outlets in systems, but 16CH node kits are typically cost effective.
3. Order **1 EFM assembly kit (#20580-00) per outlet** (incl. multiples for monitoring multiple products)
   Alternatively, order EFM manifold kits (#20631-00 to #20634-00) for pre-built manifolds with flowmeters installed.
4. Order **1 ORS Outlet & 1 ORS Check Valve (#20551-00 style) per EFM body.**
   Order manifolds & plumbing components (& end caps) suited for the implement size.
5. [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.

EFM System Checklist for ECU200

ELECTRONICS Parts

- ☐ 1x ECU200 KIT per system, incl. 1st 16CH
- ☐ 1x 16CH Node Kit per adtl. 16 outlet
- ☐ 1x Flowmeter (EFM) per outlet
- ☐ Extension harnesses if req'd
- ☐ 1x Android Tablet [Android 8.0 OS or newer]

PLUMBING Parts

- ☐ 1x ORS Manifold Outlet per outlet
- ☐ 1x ORS Outlet Fitting per outlet
- ☐ 1x ORS Check Valve per outlet
- ☐ 1x Inlet Feed or Tee per manifold
- ☐ 1x End Cap per manifold [2x if center Tee]
- ☐ 1x Metering Orifice per outlet [or alt.]

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

Build your EFM system liquid kit on 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.

EFM VIDEO TUTORIALS - Setting up EFM App on Android Tablet

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

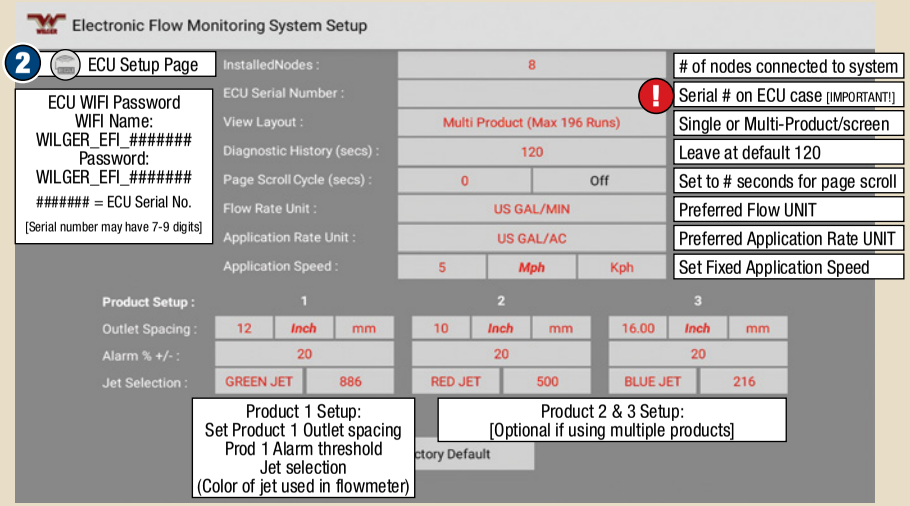
EFM System App Preview - Setup & Go

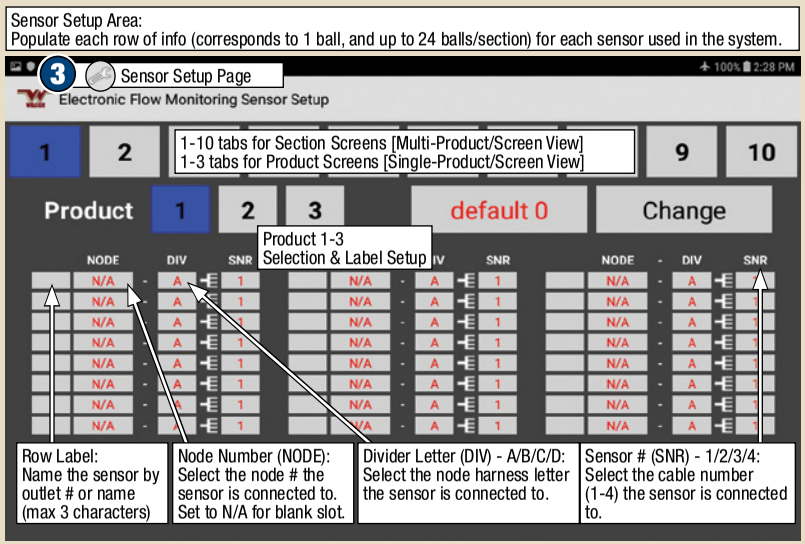
1. Download the Wilger Electronic Flow Monitoring System App. (GooglePlay Store, or APK download from www.wilger.net/efm.apk)

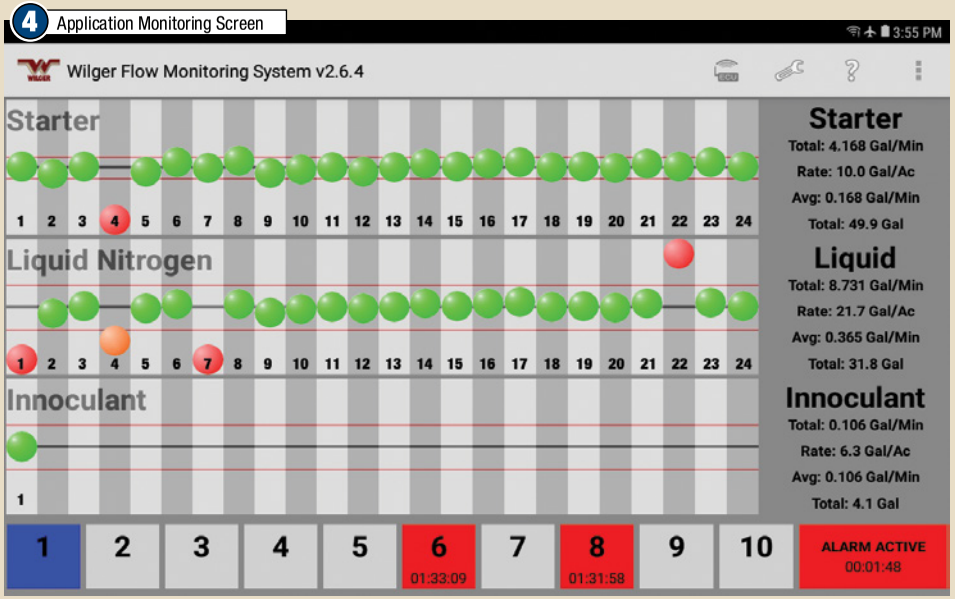
2. Power up ECU, connect tablet to ECU WIFI, and complete ECU setup, including specifying product-specific alarm, outlet spacing & jet selection.
(WIFI password is ECU serial number; eg. "WILGER_EFI_**1234567**")
ECU serial number may be between 7-9 digits.

3. 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).

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







Now that basic setup is complete, explore the individual row detailed screens, application widgets, advanced calibration screen, and equipment profile saving/recalling as well.

Case IH Sprayer with AimCommand Flex
(www.caseih.com)
USA

Wilger makes spray tips for applicators who care about how they spray.

Smithco Sprayer with PinPoint II
(www.smithco.com)
USA

Elvorti seeder with flow indicators [top-right]
fed to metering in-line check valves
Ukraine

Wilger makes nozzle bodies & components that address and support best practices being developed in the crop protection industry.

Horsch Cart with Visual Flow Indicators
(www.horsch.com)
Germany/USA

Electronic Flow Monitoring System [view from below]
Retrofit by Tech-Farming
Ukraine

Wilger makes flow monitoring & metering components that are critical to maintaining effective and consistent application.

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