



# **2016 360 Y-DROP™**

## **Technical Guide**



Issued November 1, 2015

## 360 Y-DROP™ Ordering Steps

These steps are intended to follow the steps in the Order & Retail Price Guide. This guide will provide the technical detail in having a successful 360 Y-DROP™ order placed with 360 Yield Center and should be used in conjunction with the 360 Y-DROP™ price guide.



### Order a 360 Y-DROP™ System

#### STEP 1 - Sprayer Mount Package (SMP)

- The Sprayer Mount Package (SMP) is a pre-packaged set of parts sold by 360 Yield Center to attach the Y-DROP boom assembly to the sprayer manufacturer's boom. The SMP includes boom mounting brackets, top bracket plates, extension brackets, connectors, and any other hardware to complete an install. Every SMP has differing brackets, hardware, and kits as well as the correct number of such parts. 360 Yield Center will ensure your ordered package includes all parts necessary for a successful mount.

### Sprayer Mount Package (SMP) Example



SMP Part # 410526 - JD R-Series 80, 90, 100' Boom" - 60 ft  
(Picture depicts actual parts and units for this example model)

- **Appendix A** (of the Technical guide) provides charts to be used in determining the correct system boom length. Simply find your model, # of rows, and row width (while considering the 1st fold boom size) which will provide you the correct boom length to find your OEM sprayer.
- Find the resulting system boom length in the Price Guide Sprayer Mount Package listing with applicable part number - all hardware and mounting part quantities are all included in a single SMP.
- Reminder: 360 Y-DROP™ Systems Can ONLY be Mounted on the 1st fold of any self-propelled sprayer.

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### STEP 2 - Boom Assemblies

- The 360 Y-DROP™ System's boom assembly comes in 5 foot sections that connect together with 8" connectors and hardware. The boom assembly provides a consistent boom for the attachment of the riser mounts. It takes several boom assemblies to fit the entire length of the OEM sprayer boom as noted below.



- Quantity Needed: (Sprayer Mount Package boom length in feet / 5) + 1  
Ex: Sprayer Mount Pkg - JD R-Series 80, 90, 100' - 60 ft or (60' / 5) + 1 = 13 boom assemblies

| SMP<br>Boom Length | Boom Assy Qty (Part # 415000) |
|--------------------|-------------------------------|
|                    | Formula (SMP Ft / 5 + 1)      |
| 30'                | 7                             |
| 40'                | 9                             |
| 60'                | 13                            |
| 70'                | 15                            |

- Part number 415000 includes a single 5 foot boom section along with a connector and hardware.

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## Order a 360 Y-DROP™ System

### STEP 3 - Riser Mount Assemblies

- ▶ **The Riser Mount Assembly is the connector that attaches the Riser Tube to the system's Boom Assembly.**



- ▶ Quantity Needed: # of drops  
Ex: Sprayer Mount Pkg - JD R-Series 80, 90, 100' - 60 ft or 24 row system = 23 riser mounts.
- ▶ Part number 416000 includes connector and hardware.

### STEP 4 - Riser Mount Assemblies for Transport

- ▶ **Needed for placement of Y-drops (risers and base units) on the boom for reduced interference during transportation.**
- ▶ Quantity Needed: see chart below and refer to Appendix A for Calculated Boom Ft.
- ▶ Part number 416000 includes connector and hardware.

| Calculated Boom Ft. | Recommended Qty |
|---------------------|-----------------|
| 30-44 ft            | none            |
| 51 ft               | 4               |
| 59 ft and greater   | 6               |



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## Order a 360 Y-DROP™ System

### STEP 5 - Riser Tube Assemblies

- **The Riser Tube is the long steel tube that attaches the 360 Y-DROP™ Base Unit to the system's Boom Assembly via the Riser Mount.**



- Quantity Needed: # of drops  
Ex: Sprayer Mount Pkg - JD R-Series 80, 90, 100' - 60 ft or 24 row system = 23 riser tubes
- Note: Some sprayer models sit higher in the center rows, requiring longer risers. It may be necessary to make a visual identification of the sprayer center to determine potential variability in riser sizes on the center section of the sprayer versus the outer boom heights. John Deere R Series and several models of the Miller Sprayers will need to have longer risers for the center section. See picture below:



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## Order a 360 Y-DROP™ System

- The Riser length is now measured from the boom to the top of the 360 Y-DROP™ base unit. This is a more intuitive measurement of the actual riser rod itself. See illustration below for actual riser measurements and lengths.

### Actual Riser Measurements & Lengths



- See charts below for old and new part numbers corresponding with Riser length, and recommended riser lengths by OEM Maker.

| Comparison of Old and New Riser Part Numbers |                         |            |                    |
|--|-------------------------|------------|--------------------|
| Old Part #                                   | Old Stated Riser Length | New Part # | "New" Riser Length |
| 416124                                       | 24 Inch                 | 416043     | 43 Inch            |
| n/a  | n/a                     | 416049     | 49 Inch            |
| 416136                                       | 36 Inch                 | 416055     | 55 Inch            |
| n/a  | n/a                     | 416061     | 61 Inch            |
| 416148                                       | 48 Inch                 | 416067     | 67 Inch            |
| 416160                                       | 60 Inch                 | 416079     | 79 Inch            |
| 416172                                       | 72 Inch                 | 416091     | 91 Inch            |

| Recommended Riser Tubes |         |        |
|-------------------------|---------|--------|
|                         | Outside | Center |
| Rogator                 | 49"     | 49"    |
| Case                    | 49"     | 49"    |
| JD-R Series             | 55"     | 67"    |
| JD - 4830/4730          | 55"     | 49"    |
| JD -4930/4940           | 55"     | 61"    |
| Hagie                   | 67"     | 67"    |
| Miller-pre 08           | 67"     | 67"    |
| Miller-2008+            | 67"     | 79"    |

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## Order a 360 Y-DROP™ System

### STEP 6 - Riser Hose Assemblies

- ▶ **The Riser Hose Assembly is the hose that liquid flows through from the OEM Sprayer lines to the 360 Y-DROP™ Base Units.**



- ▶ Quantity Needed: # of drops  
Ex: Sprayer Mount Pkg - JD R-Series 80, 90, 100' - 60 ft or 24 row system = 23 riser hose assemblies
- ▶ See chart below for the Riser Hoses corresponding with the Riser Tubes.

| Riser Tube      | Riser Hose Needed | Part Number |
|-----------------|-------------------|-------------|
| 43" or 49"      | 78"               | 416078      |
| 55", 61" or 67" | 90"               | 416090      |
| 79"             | 102"              | 416099      |
| 91"             | 114"              | 416110      |

- ▶ Each part number includes a single hose with required connectors.



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### STEP 7 - 360 Y-DROP™ Base Unit

► The 360 Y-DROP™ Base Unit is the molded part at the bottom of the Riser Tube which runs through the field.



- Quantity Needed: INSIDE ROWS: Conventional (Black): # of drops - 2  
Quantity Needed: OUTSIDE ROWS: High Visibility (Orange): 2  
Ex: Sprayer Mount Pkg - JD R-Series 80, 90, 100' - 60 ft or 24 row system = 23 drops.  
24 row system = 21 360 Y-DROP™ Conventional Base Units  
+ 2 360 Y-DROP™ High Visibility Base Units  
= 23 Total Base Units
- See chart below for the 360 Y-DROP™ Base Unit part numbers.

| Part Number | 360 Y-DROP™ Base Unit                            |
|-------------|--|
| 413000      | 360 Y-DROP™ Base Unit - Conventional (Black)     |
| 413010      | 360 Y-DROP™ Base Unit - High Visibility (Orange) |

- Each part number includes a single 360 Y-DROP™ Base Unit.



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### STEP 8 - Drag Hoses

- ▶ **Two Drag Hoses (order singly) attach to each 360 Y-DROP™ Base Unit and precisely apply the liquid nitrogen or other product along the base of the stalk.**



- ▶ Quantity Needed: # of drops \* 2 hoses per 360 Y-DROP™.  
Ex: Sprayer Mount Pkg - JD R-Series 80, 90, 100' - 60 ft or 24 row system = 23 drops \* 2 = 46 drag hoses.
- ▶ See chart below for Drag Hoses offered for sale.

| Part Number | Drag Hose Length |
|-------------|------------------|
| 413124      | 24 Inch          |
| 413130      | 30 Inch          |
| 413136      | 36 Inch          |
| 413148      | 44 Inch          |

- ▶ Recommendation is that most systems will utilize the 30" hose.
- ▶ Each part number includes a single drag hose and hose clamp.

## 360 Y-DROP™ Ordering Steps

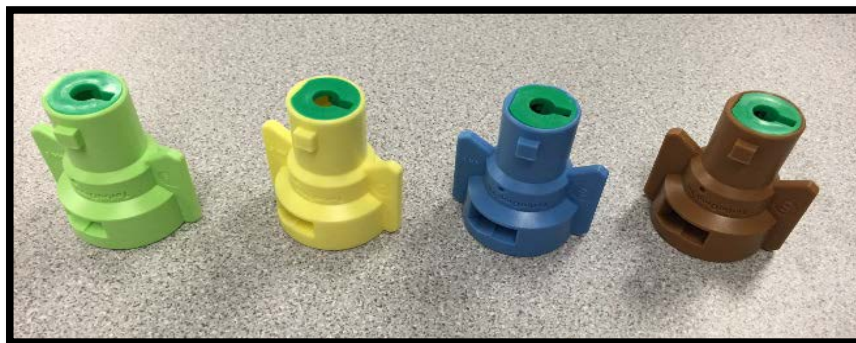
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## Order a 360 Y-DROP™ System

### STEP 9 - Nozzles/Orifices (Optional)

- The Variable Rate Nozzle is utilized to provide a wider flow range than conventional fertilizer nozzles, to allow greater speed changes or true variable rate fertilizer applications.



Color of nozzle corresponds with size as indicated in chart below

- Quantity needed: INSIDE ROWS: (# of drops \* 2) - 2 - Recommended TDVRHB015 or TDVRHB02  
Quantity needed: OUTSIDE ROWS: Two - Recommended TDVRHB03  
Ex: Sprayer Mount Pkg - JD R-Series 80, 90, 100' - 60 ft or 24 row system = 23 drops \* 2 = 46 total nozzles.  
24 row system = (23 drops \* 2) - 2 = 44 Inside nozzles  
+ 2 Outside nozzles  
= 46 Total nozzles
- (See Appendix B) for inside rows nozzle selection - based on flow rates at various row widths and speeds.
- After deciding on inside nozzle, reference chart below for corresponding outside nozzle. The outside nozzle has a larger volume requirement due to outside rows are only fed by one drag house.

| INSIDE Nozzle<br>(Select in Appendix B) | OUTSIDE Nozzle (Selection Should<br>Correspond to the Inside Nozzle as Below) |
|---|---|
| TDVRHB015                               | TDVRHB03  |
| TDVRHB02                                | TDVRHB03  |
| TDVRHB03                                | TDVRHB05  |

- See chart below for nozzles offered for sale which are manufactured by TURBODROP®.

| Part Number | Part Name | Nozzle Size | Color  |
|-------------|-----------|-------------|--------|
| 418015      | TDVRHB015 | 015         | Green  |
| 418020      | TDVRHB02  | 02          | Yellow |
| 418030      | TDVRHB03  | 03          | Blue   |
| 418050      | TDVRHB05  | 05          | Brown  |

- Each part number includes a single variable rate nozzle.

| Spacing | Rows | Calculated Boom Feet | Y-Drop Boom Category | JD 4830/4730 | JD 4930/4940 | JD R-Series 80, 90, 100' Boom | JD R-Series 120' Booms | Hagie STS Steel 80, 90, 100' Boom | Hagie 120' Aluminum Boom | Hagie DTS | Case IH 120' Boom | Case IH 80'-90' Boom | Miller Nitro 2008+ | New Holland | Miller Nitro pre 2008 | ROGATOR 80, 90, 100' Boom | ROGATOR 120' Boom | Apache 80, 90, 100' boom |
|---------|------|----------------------|----------------------|--------------|--------------|-------------------------------|------------------------|-----------------------------------|--------------------------|-----------|-------------------|----------------------|--------------------|-------------|-----------------------|---------------------------|-------------------|--------------------------|
| 15      | 48   | 60                   | 60                   | 410506       | 410516       | 410526                        | 410536                 | 410546                            | 410556                   | 410636    | 410566            | 410576               | 410586             | 410596      | 410606                | 410616                    | 410626            | 410646                   |
| 20      | 36   | 60                   | 60                   | 410506       | 410516       | 410526                        | 410536                 | 410546                            | 410556                   | 410636    | 410566            | 410576               | 410586             | 410596      | 410606                | 410616                    | 410626            | 410646                   |
| 22      | 24   | 44                   | 40                   | 410504       | 410514       | 410524                        | 410534                 | 410544                            | 410554                   | 410634    | 410564            | 410574               | 410584             | 410594      | 410604                | 410614                    | 410624            | 410644                   |
| 22      | 32   | 59                   | 60                   | 410506       | 410516       | 410526                        | 410536                 | 410546                            | 410556                   | 410636    | 410566            | 410576               | 410586             | 410596      | 410606                | 410616                    | 410626            | 410646                   |
| 22      | 36   | 66                   | 70                   | N/A          | 410517       | 410527                        | 410537                 | 410547                            | 410557                   | N/A       | N/A               | N/A                  | 410587             | 410597      | 410607                | N/A                       | N/A               | N/A                      |
| 28      | 32   | 75                   | 70                   | N/A          | 410517       | 410527                        | 410537                 | 410547                            | 410557                   | N/A       | N/A               | N/A                  | 410587             | 410597      | 410607                | N/A                       | N/A               | N/A                      |
| 30      | 12   | 30                   | 30                   | 410503       | 41513        | 410523                        | 410533                 | 410543                            | 410553                   | 410633    | 410563            | 410573               | 410583             | 410593      | 410603                | 410613                    | 410623            | 410643                   |
| 30      | 16   | 40                   | 40                   | 410504       | 410514       | 410524                        | 410534                 | 410544                            | 410554                   | 410634    | 410564            | 410574               | 410584             | 410594      | 410604                | 410614                    | 410624            | 410644                   |
| 30      | 24   | 60                   | 60                   | 410506       | 410516       | 410526                        | 410536                 | 410546                            | 410556                   | 410636    | 410566            | 410576               | 410586             | 410596      | 410606                | 410616                    | 410626            | 410646                   |
| 30      | 32   | 80                   | 70                   | N/A          | 410517       | 410527                        | 410537                 | 410547                            | 410557                   | N/A       | N/A               | N/A                  | 410587             | 410597      | 410607                | N/A                       | N/A               | N/A                      |
| 38      | 12   | 38                   | 40                   | 410504       | 410514       | 410524                        | 410534                 | 410544                            | 410554                   | 410634    | 410564            | 410574               | 410584             | 410594      | 410604                | 410614                    | 410624            | 410644                   |
| 38      | 16   | 51                   | 60                   | 410506       | 410516       | 410526                        | 410536                 | 410546                            | 410556                   | 410636    | 410566            | 410576               | 410586             | 410596      | 410606                | 410616                    | 410626            | 410646                   |
| 38      | 24   | 76                   | 70                   | N/A          | 410517       | 410527                        | 410537                 | 410547                            | 410557                   | N/A       | N/A               | N/A                  | 410587             | 410597      | 410607                | N/A                       | N/A               | N/A                      |

| 30 Inch Corn  |       | All Recommendations based on Water Specific Gravity                    |       |       |      |      |      |      |      |      |      |      |  |
|---|-------|--|-------|-------|------|------|------|------|------|------|------|------|--|
| USE THIS CHART INSIDE NOZZLE SELECTION - 30 INCH CORN |       |  |       |       |      |      |      |      |      |      |      |      |  |
| TDVRF 015   |       | Application Rate GPA at MPH Based on 15" Spacing (2 Nozzles Per YDROP) |       |       |      |      |      |      |      |      |      |      |  |
| Pressure  | Flow  |  |       |       |      |      |      |      |      |      |      |      |  |
| PSI   | GPM   | 5  | 6     | 7     | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   |  |
| 20  | 0.174 | 13.8   | 11.5  | 9.8   | 8.6  | 7.7  | 6.9  | 6.3  | 5.7  | 5.3  | 4.9  | 4.6  |  |
| 30  | 0.266 | 21.1   | 17.6  | 15.0  | 13.2 | 11.7 | 10.5 | 9.6  | 8.8  | 8.1  | 7.5  | 7.0  |  |
| 40  | 0.350 | 27.7   | 23.1  | 19.8  | 17.3 | 15.4 | 13.9 | 12.6 | 11.6 | 10.7 | 9.9  | 9.2  |  |
| 50  | 0.391 | 31.0   | 25.8  | 22.1  | 19.4 | 17.2 | 15.5 | 14.1 | 12.9 | 11.9 | 11.1 | 10.3 |  |
| 60  | 0.443 | 35.1   | 29.2  | 25.1  | 21.9 | 19.5 | 17.5 | 15.9 | 14.6 | 13.5 | 12.5 | 11.7 |  |
| 70  | 0.483 | 38.3   | 31.9  | 27.3  | 23.9 | 21.3 | 19.1 | 17.4 | 15.9 | 14.7 | 13.7 | 12.8 |  |
| 80  | 0.516 | 40.9   | 34.1  | 29.2  | 25.5 | 22.7 | 20.4 | 18.6 | 17.0 | 15.7 | 14.6 | 13.6 |  |
| 90  | 0.537 | 42.5   | 35.4  | 30.4  | 26.6 | 23.6 | 21.3 | 19.3 | 17.7 | 16.4 | 15.2 | 14.2 |  |
| 100   | 0.566 | 44.8   | 37.4  | 32.0  | 28.0 | 24.9 | 22.4 | 20.4 | 18.7 | 17.2 | 16.0 | 14.9 |  |
| 120   | 0.620 | 49.1   | 40.9  | 35.1  | 30.7 | 27.3 | 24.6 | 22.3 | 20.5 | 18.9 | 17.5 | 16.4 |  |
| 140   | 0.670 | 53.1   | 44.2  | 37.9  | 33.2 | 29.5 | 26.5 | 24.1 | 22.1 | 20.4 | 19.0 | 17.7 |  |
| TDVRF 02  |       | Application Rate GPA at MPH Based on 15" Spacing (2 Nozzles Per YDROP) |       |       |      |      |      |      |      |      |      |      |  |
| Pressure  | Flow  |  |       |       |      |      |      |      |      |      |      |      |  |
| PSI   | GPM   | 5  | 6     | 7     | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   |  |
| 20  | 0.251 | 19.9   | 16.6  | 14.2  | 12.4 | 11.0 | 9.9  | 9.0  | 8.3  | 7.6  | 7.1  | 6.6  |  |
| 30  | 0.384 | 30.4   | 25.3  | 21.7  | 19.0 | 16.9 | 15.2 | 13.8 | 12.7 | 11.7 | 10.9 | 10.1 |  |
| 40  | 0.512 | 40.6   | 33.8  | 29.0  | 25.3 | 22.5 | 20.3 | 18.4 | 16.9 | 15.6 | 14.5 | 13.5 |  |
| 50  | 0.575 | 45.5   | 38.0  | 32.5  | 28.5 | 25.3 | 22.8 | 20.7 | 19.0 | 17.5 | 16.3 | 15.2 |  |
| 60  | 0.653 | 51.7   | 43.1  | 36.9  | 32.3 | 28.7 | 25.9 | 23.5 | 21.5 | 19.9 | 18.5 | 17.2 |  |
| 70  | 0.696 | 55.1   | 45.9  | 39.4  | 34.5 | 30.6 | 27.6 | 25.1 | 23.0 | 21.2 | 19.7 | 18.4 |  |
| 80  | 0.744 | 58.9   | 49.1  | 42.1  | 36.8 | 32.7 | 29.5 | 26.8 | 24.6 | 22.7 | 21.0 | 19.6 |  |
| 90  | 0.779 | 61.7   | 51.4  | 44.1  | 38.6 | 34.3 | 30.8 | 28.0 | 25.7 | 23.7 | 22.0 | 20.6 |  |
| 100   | 0.821 | 65.0   | 54.2  | 46.4  | 40.6 | 36.1 | 32.5 | 29.6 | 27.1 | 25.0 | 23.2 | 21.7 |  |
| 120   | 0.900 | 71.3   | 59.4  | 50.9  | 44.6 | 39.6 | 35.6 | 32.4 | 29.7 | 27.4 | 25.5 | 23.8 |  |
| 140   | 0.972 | 77.0   | 64.2  | 55.0  | 48.1 | 42.8 | 38.5 | 35.0 | 32.1 | 29.6 | 27.5 | 25.7 |  |
| TDVRF 03  |       | Application Rate GPA at MPH Based on 15" Spacing (2 Nozzles Per YDROP) |       |       |      |      |      |      |      |      |      |      |  |
| Pressure  | Flow  |  |       |       |      |      |      |      |      |      |      |      |  |
| PSI   | GPM   | 5  | 6     | 7     | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   |  |
| 20  | 0.326 | 25.8   | 21.5  | 18.4  | 16.1 | 14.3 | 12.9 | 11.7 | 10.8 | 9.9  | 9.2  | 8.6  |  |
| 30  | 0.492 | 39.0   | 32.5  | 27.8  | 24.4 | 21.6 | 19.5 | 17.7 | 16.2 | 15.0 | 13.9 | 13.0 |  |
| 40  | 0.661 | 52.4   | 43.6  | 37.4  | 32.7 | 29.1 | 26.2 | 23.8 | 21.8 | 20.1 | 18.7 | 17.5 |  |
| 50  | 0.739 | 58.5   | 48.8  | 41.8  | 36.6 | 32.5 | 29.3 | 26.6 | 24.4 | 22.5 | 20.9 | 19.5 |  |
| 60  | 0.825 | 65.3   | 54.5  | 46.7  | 40.8 | 36.3 | 32.7 | 29.7 | 27.2 | 25.1 | 23.3 | 21.8 |  |
| 70  | 0.885 | 70.1   | 58.4  | 50.1  | 43.8 | 38.9 | 35.0 | 31.9 | 29.2 | 27.0 | 25.0 | 23.4 |  |
| 80  | 0.943 | 74.7   | 62.2  | 53.3  | 46.7 | 41.5 | 37.3 | 33.9 | 31.1 | 28.7 | 26.7 | 24.9 |  |
| 90  | 1.000 | 79.2   | 66.0  | 56.6  | 49.5 | 44.0 | 39.6 | 36.0 | 33.0 | 30.5 | 28.3 | 26.4 |  |
| 100   | 1.054 | 83.5   | 69.6  | 59.6  | 52.2 | 46.4 | 41.7 | 37.9 | 34.8 | 32.1 | 29.8 | 27.8 |  |
| 120   | 1.154 | 91.4   | 76.2  | 65.3  | 57.1 | 50.8 | 45.7 | 41.5 | 38.1 | 35.2 | 32.6 | 30.5 |  |
| 140   | 1.247 | 98.8   | 82.3  | 70.5  | 61.7 | 54.9 | 49.4 | 44.9 | 41.2 | 38.0 | 35.3 | 32.9 |  |
| TDVRF 05  |       | Application Rate GPA at MPH Based on 15" Spacing (2 Nozzles Per YDROP) |       |       |      |      |      |      |      |      |      |      |  |
| Pressure  | Flow  |  |       |       |      |      |      |      |      |      |      |      |  |
| PSI   | GPM   | 5  | 6     | 7     | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   |  |
| 20  | 0.642 | 50.8   | 42.4  | 36.3  | 31.8 | 28.2 | 25.4 | 23.1 | 21.2 | 19.6 | 18.2 | 16.9 |  |
| 30  | 0.758 | 60.0   | 50.0  | 42.9  | 37.5 | 33.4 | 30.0 | 27.3 | 25.0 | 23.1 | 21.4 | 20.0 |  |
| 40  | 0.930 | 73.7   | 61.4  | 52.6  | 46.0 | 40.9 | 36.8 | 33.5 | 30.7 | 28.3 | 26.3 | 24.6 |  |
| 50  | 1.039 | 82.3   | 68.6  | 58.8  | 51.4 | 45.7 | 41.1 | 37.4 | 34.3 | 31.6 | 29.4 | 27.4 |  |
| 60  | 1.091 | 86.4   | 72.0  | 61.7  | 54.0 | 48.0 | 43.2 | 39.3 | 36.0 | 33.2 | 30.9 | 28.8 |  |
| 70  | 1.269 | 100.5  | 83.8  | 71.8  | 62.8 | 55.8 | 50.3 | 45.7 | 41.9 | 38.7 | 35.9 | 33.5 |  |
| 80  | 1.368 | 108.3  | 90.3  | 77.4  | 67.7 | 60.2 | 54.2 | 49.2 | 45.1 | 41.7 | 38.7 | 36.1 |  |
| 90  | 1.451 | 114.9  | 95.8  | 82.1  | 71.8 | 63.8 | 57.5 | 52.2 | 47.9 | 44.2 | 41.0 | 38.3 |  |
| 100   | 1.530 | 121.2  | 101.0 | 86.6  | 75.7 | 67.3 | 60.6 | 55.1 | 50.5 | 46.6 | 43.3 | 40.4 |  |
| 120   | 1.676 | 132.7  | 110.6 | 94.8  | 83.0 | 73.7 | 66.4 | 60.3 | 55.3 | 51.1 | 47.4 | 44.2 |  |
| 140   | 1.810 | 143.4  | 119.5 | 102.4 | 89.6 | 79.6 | 71.7 | 65.2 | 59.7 | 55.1 | 51.2 | 47.8 |  |

Most sprayers will allow lower application rates down to 15 PSI.



| 20 Inch Corn All Recommendations based on Water Specific Gravity |       |  |       |       |       |       |      |      |      |      |      |
|--|-------|--|-------|-------|-------|-------|------|------|------|------|------|
| USE THIS CHART FOR INSIDE NOZZLE SELECTION - 20 INCH CORN        |       |  |       |       |       |       |      |      |      |      |      |
| TDVRF 015  |       | Application Rate GPA at MPH Based on 10" Spacing (2 Nozzles Per YDROP) |       |       |       |       |      |      |      |      |      |
| Pressure   | Flow  |  |       |       |       |       |      |      |      |      |      |
| PSI  | GPM   | 6  | 7     | 8     | 9     | 10    | 11   | 12   | 13   | 14   | 15   |
| 20   | 0.174 | 17.2   | 14.8  | 12.9  | 11.5  | 10.3  | 9.4  | 8.6  | 8.0  | 7.4  | 6.9  |
| 30   | 0.266 | 26.3   | 22.6  | 19.8  | 17.6  | 15.8  | 14.4 | 13.2 | 12.2 | 11.3 | 10.5 |
| 40   | 0.350 | 34.7   | 29.7  | 26.0  | 23.1  | 20.8  | 18.9 | 17.3 | 16.0 | 14.9 | 13.9 |
| 50   | 0.391 | 38.7   | 33.2  | 29.0  | 25.8  | 23.2  | 21.1 | 19.4 | 17.9 | 16.6 | 15.5 |
| 60   | 0.443 | 43.9   | 37.6  | 32.9  | 29.2  | 26.3  | 23.9 | 21.9 | 20.2 | 18.8 | 17.5 |
| 70   | 0.483 | 47.8   | 41.0  | 35.9  | 31.9  | 28.7  | 26.1 | 23.9 | 22.1 | 20.5 | 19.1 |
| 80   | 0.516 | 51.1   | 43.8  | 38.3  | 34.1  | 30.7  | 27.9 | 25.5 | 23.6 | 21.9 | 20.4 |
| 90   | 0.537 | 53.2   | 45.6  | 39.9  | 35.4  | 31.9  | 29.0 | 26.6 | 24.5 | 22.8 | 21.3 |
| 100  | 0.566 | 56.0   | 48.0  | 42.0  | 37.4  | 33.6  | 30.6 | 28.0 | 25.9 | 24.0 | 22.4 |
| 120  | 0.620 | 61.4   | 52.6  | 46.0  | 40.9  | 36.8  | 33.5 | 30.7 | 28.3 | 26.3 | 24.6 |
| 140  | 0.670 | 66.3   | 56.9  | 49.7  | 44.2  | 39.8  | 36.2 | 33.2 | 30.6 | 28.4 | 26.5 |
| TDVRF 02   |       | Application Rate GPA at MPH Based on 10" Spacing (2 Nozzles Per YDROP) |       |       |       |       |      |      |      |      |      |
| Pressure   | Flow  |  |       |       |       |       |      |      |      |      |      |
| PSI  | GPM   | 6  | 7     | 8     | 9     | 10    | 11   | 12   | 13   | 14   | 15   |
| 20   | 0.251 | 24.8   | 21.3  | 18.6  | 16.6  | 14.9  | 13.6 | 12.4 | 11.5 | 10.6 | 9.9  |
| 30   | 0.384 | 38.0   | 32.6  | 28.5  | 25.3  | 22.8  | 20.7 | 19.0 | 17.5 | 16.3 | 15.2 |
| 40   | 0.512 | 50.7   | 43.4  | 38.0  | 33.8  | 30.4  | 27.6 | 25.3 | 23.4 | 21.7 | 20.3 |
| 50   | 0.575 | 56.9   | 48.8  | 42.7  | 38.0  | 34.2  | 31.1 | 28.5 | 26.3 | 24.4 | 22.8 |
| 60   | 0.653 | 64.6   | 55.4  | 48.5  | 43.1  | 38.8  | 35.3 | 32.3 | 29.8 | 27.7 | 25.9 |
| 70   | 0.696 | 68.9   | 59.1  | 51.7  | 45.9  | 41.3  | 37.6 | 34.5 | 31.8 | 29.5 | 27.6 |
| 80   | 0.744 | 73.7   | 63.1  | 55.2  | 49.1  | 44.2  | 40.2 | 36.8 | 34.0 | 31.6 | 29.5 |
| 90   | 0.779 | 77.1   | 66.1  | 57.8  | 51.4  | 46.3  | 42.1 | 38.6 | 35.6 | 33.1 | 30.8 |
| 100  | 0.821 | 81.3   | 69.7  | 61.0  | 54.2  | 48.8  | 44.3 | 40.6 | 37.5 | 34.8 | 32.5 |
| 120  | 0.900 | 89.1   | 76.4  | 66.8  | 59.4  | 53.5  | 48.6 | 44.6 | 41.1 | 38.2 | 35.6 |
| 140  | 0.972 | 96.2   | 82.5  | 72.2  | 64.2  | 57.7  | 52.5 | 48.1 | 44.4 | 41.2 | 38.5 |
| TDVRF 03   |       | Application Rate GPA at MPH Based on 10" Spacing (2 Nozzles Per YDROP) |       |       |       |       |      |      |      |      |      |
| Pressure   | Flow  |  |       |       |       |       |      |      |      |      |      |
| PSI  | GPM   | 6  | 7     | 8     | 9     | 10    | 11   | 12   | 13   | 14   | 15   |
| 20   | 0.326 | 32.3   | 27.7  | 24.2  | 21.5  | 19.4  | 17.6 | 16.1 | 14.9 | 13.8 | 12.9 |
| 30   | 0.492 | 48.7   | 41.7  | 36.5  | 32.5  | 29.2  | 26.6 | 24.4 | 22.5 | 20.9 | 19.5 |
| 40   | 0.661 | 65.4   | 56.1  | 49.1  | 43.6  | 39.3  | 35.7 | 32.7 | 30.2 | 28.0 | 26.2 |
| 50   | 0.739 | 73.2   | 62.7  | 54.9  | 48.8  | 43.9  | 39.9 | 36.6 | 33.8 | 31.4 | 29.3 |
| 60   | 0.825 | 81.7   | 70.0  | 61.3  | 54.5  | 49.0  | 44.6 | 40.8 | 37.7 | 35.0 | 32.7 |
| 70   | 0.885 | 87.6   | 75.1  | 65.7  | 58.4  | 52.6  | 47.8 | 43.8 | 40.4 | 37.5 | 35.0 |
| 80   | 0.943 | 93.4   | 80.0  | 70.0  | 62.2  | 56.0  | 50.9 | 46.7 | 43.1 | 40.0 | 37.3 |
| 90   | 1.000 | 99.0   | 84.9  | 74.3  | 66.0  | 59.4  | 54.0 | 49.5 | 45.7 | 42.4 | 39.6 |
| 100  | 1.054 | 104.3  | 89.4  | 78.3  | 69.6  | 62.6  | 56.9 | 52.2 | 48.2 | 44.7 | 41.7 |
| 120  | 1.154 | 114.2  | 97.9  | 85.7  | 76.2  | 68.5  | 62.3 | 57.1 | 52.7 | 49.0 | 45.7 |
| 140  | 1.247 | 123.5  | 105.8 | 92.6  | 82.3  | 74.1  | 67.3 | 61.7 | 57.0 | 52.9 | 49.4 |
| TDVRF 05   |       | Application Rate GPA at MPH Based on 10" Spacing (2 Nozzles Per YDROP) |       |       |       |       |      |      |      |      |      |
| Pressure   | Flow  |  |       |       |       |       |      |      |      |      |      |
| PSI  | GPM   | 6  | 7     | 8     | 9     | 10    | 11   | 12   | 13   | 14   | 15   |
| 20   | 0.642 | 63.6   | 54.5  | 47.7  | 42.4  | 38.1  | 34.7 | 31.8 | 29.3 | 27.2 | 25.4 |
| 30   | 0.758 | 75.0   | 64.3  | 56.3  | 50.0  | 45.0  | 40.9 | 37.5 | 34.6 | 32.2 | 30.0 |
| 40   | 0.930 | 92.1   | 78.9  | 69.1  | 61.4  | 55.2  | 50.2 | 46.0 | 42.5 | 39.5 | 36.8 |
| 50   | 1.039 | 102.9  | 88.2  | 77.1  | 68.6  | 61.7  | 56.1 | 51.4 | 47.5 | 44.1 | 41.1 |
| 60   | 1.091 | 108.0  | 92.6  | 81.0  | 72.0  | 64.8  | 58.9 | 54.0 | 49.9 | 46.3 | 43.2 |
| 70   | 1.269 | 125.6  | 107.7 | 94.2  | 83.8  | 75.4  | 68.5 | 62.8 | 58.0 | 53.8 | 50.3 |
| 80   | 1.368 | 135.4  | 116.1 | 101.6 | 90.3  | 81.3  | 73.9 | 67.7 | 62.5 | 58.0 | 54.2 |
| 90   | 1.451 | 143.6  | 123.1 | 107.7 | 95.8  | 86.2  | 78.4 | 71.8 | 66.3 | 61.6 | 57.5 |
| 100  | 1.530 | 151.5  | 129.8 | 113.6 | 101.0 | 90.9  | 82.6 | 75.7 | 69.9 | 64.9 | 60.6 |
| 120  | 1.676 | 165.9  | 142.2 | 124.4 | 110.6 | 99.6  | 90.5 | 83.0 | 76.6 | 71.1 | 66.4 |
| 140  | 1.810 | 179.2  | 153.6 | 134.4 | 119.5 | 107.5 | 97.7 | 89.6 | 82.7 | 76.8 | 71.7 |

Most sprayers will allow lower application rates down to 15 PSI.

**Spraying Liquids with a Density other than Water**

Since all tabulations we have computed are based on spraying water, which weighs 8.34 lbs per USA gallon (1 kilogram per liter) conversion factors must be used when spraying liquids that are heavier or lighter than water. To determine the proper size nozzle for the liquid to be sprayed, first multiply the desired GPM or GPA of liquid by the water rate conversion factor. Then use the new converted GPM or GPA rate to select the proper size nozzle.

**Example:**

Desired application rate is 20 GPA of 28% N. Determine the correct nozzle size as follows:

GPA (liquid other than water) x Conversion Factor  
= GPA

20 GPA (28%) x 1.13  
= 22.6 GPA (water)

The applicator should choose a nozzle size that will supply 22.6 GPA of water at the desired pressure.

| Weight of Solution | Specific Gravity    | Conversion Factor |
|--------------------|---------------------|-------------------|
| 7.0 lbs/gal.       | .84                 | .92               |
| 8.0 lbs/gal.       | .96                 | .88               |
| 8.34 lbs/gal.      | 1.00 - WATER        | 1.00              |
| 9.0 lbs/gal.       | 1.08                | 1.04              |
| 10.0 lbs/gal.      | 1.20                | 1.10              |
| 10.65 lbs/gal.     | 1.28 - 28% nitrogen | 1.13              |
| 11.0 lbs/gal.      | 1.32                | 1.15              |
| 12.0 lbs/gal.      | 1.44                | 1.20              |
| 14.0 lbs/gal.      | 1.68                | 1.30              |