



## **MANIFOLD KITS**

### **REFERENCE GUIDE - INSTALLATION TIPS**

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The GX2 Manifold kit is used for up to 10 GPA distribution. The kit includes “Low Flow” floating ball manifold columns, column backdrop and base bracket for mounting on tool bar, check valves per row, 3 sets of orifices, 60 psi gauge (or gauge kit), emergency field kit and plumbing (ie. hose and/or tubing) for all rows.

All brackets are laser cut, powder coated and come with u bolts for mounting on the tool bar. An optional swivel bracket (PN#54123) is available allowing the flow indicator assembly bracket to mount at an angle for improved viewing.

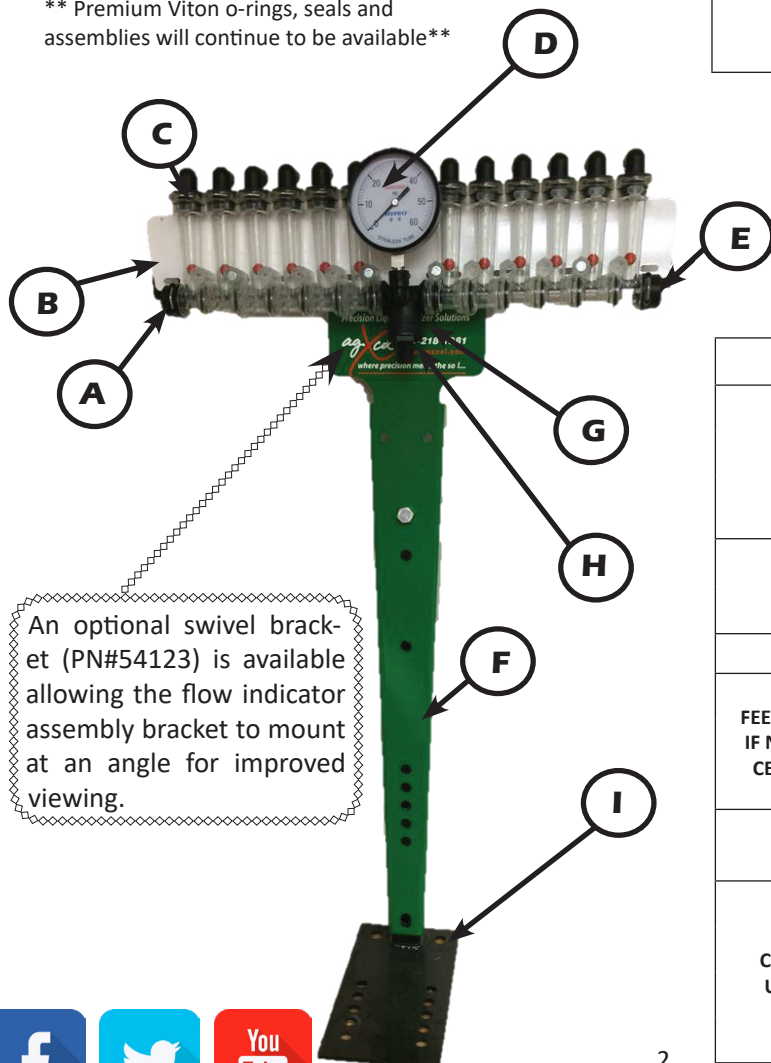
SIGHT COLUMN BRACKETS		
PN#		DESCRIPTION
A	406	UP TO 6R WHT BACKDROP
	414	UP TO 8R WHT BACKDROP
	20106	UP TO 12R WHT BACKDROP
B	18082	MOUNTING BRACKET FOR PN#406
	18088	MOUNTING BRACKET FOR PN#414
	18083	MOUNTING BRACKET FOR PN#20106
SIGHT COLUMN HARDWARE KIT - PN#38324 ONE KIT USED FOR MOUNTING UP TO 12R ONTO GX1 CHASSIS BRACKET		

**NEW**

### O-ring Upgrade: FKM

All Wilger parts are transitioning to being manufactured with FKM O-rings & seals. The fluoroelastomer (FKM) o-ring provides superior chemical resistance and durability over Buna o-rings.

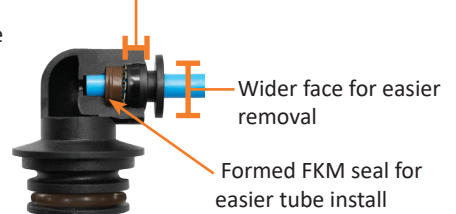
\*\* Premium Viton o-rings, seals and assemblies will continue to be available \*\*



**NEW**

The 1/4" Push-in tube outlets have received a full redesign for heavier duty sealing and easier release.

Independent teeth & collet



\*\* This redesign also applies to the radial lock caps on check valves \*\*

C		25709	1/4" PTC TOPS
		18033	3/8" BARB TOPS
		17655	3/8" PTC TOPS
D	*ONLY ONE GAUGE OPTION INCLUDED IN KIT	33812	160 PSI GAUGE
		33816	60 PSI GAUGE
		53769	60 PSI REMOTE GAUGE KIT
		53770	160 PSI REMOTE GAUGE KIT

\* Interplant kits are also available. See pg. 8 - 9 for Interplant samples. Illustrations shown are basic representation of kits. All kits are customized per order at time of sale. \*

E	18039	COLUMN END CAP & CLIP
F	38260	GX1 CHASSIS (TOMAHAWK ONLY)
	54123	GXSWIVEL KIT (NO TOMAHAWK)
	428	GXCHASSIS SWIVEL KIT (COMPLETE)
G	18037	CENTER FEED
	32239	3/4" HOSE SHANK INLET
H	52142	1/4" GAUGE ELBOW
FEED OPTIONS IF NOT USING CENTER TEE	18034	3/4" HOSE SHANK - ELBOW
	18032	3/4" HOSE SHANK
	25682	LOCK U-CLIP
I	53961	GX1 MOUNT AVAILABLE TO RAISE OR MANOEUVRE A CROWDED TOOLBAR
COMMON UBOLT(S)	53578	GXUBOLT 7 X 8 1/2" (CASE/JD)
	20329	GXUBOLT 5 X 7 X 1/2"
	17585	GXUBOLT 5 X 8 X 1/2" (KINZIE)
	38446	GXUBOLT 7 X 5 X 1/2"



SIGHT COLUMNS		
PN#	DESCRIPTION	
LOW FLOW	25689	Wilger Low Flow Column Only
	25687	Wilger Low Flow Column W/balls, clip, retainer (No Top)
	37617	Wilger Low Flow Complete Column(s) - 4 pack w/ End cap, clips & 1/4QC Tops
	37723	Wilger Low Flow Complete Column(s) - 4 pack w/End cap, clips & 3/8QC Tops
BALL SELECTION FOR 30" ROWS		
1-3 GPA	18077	Green Plastic* Ball
2-4 GPA	18078	Red Plastic* Ball
3-6 GPA	18079	Maroon Glass Ball
5-10 GPA	18080	Stainless Steel Ball
*These balls may float to the top with heavier fertilizers, such as 10-34-0. Use Maroon glass in this case.		

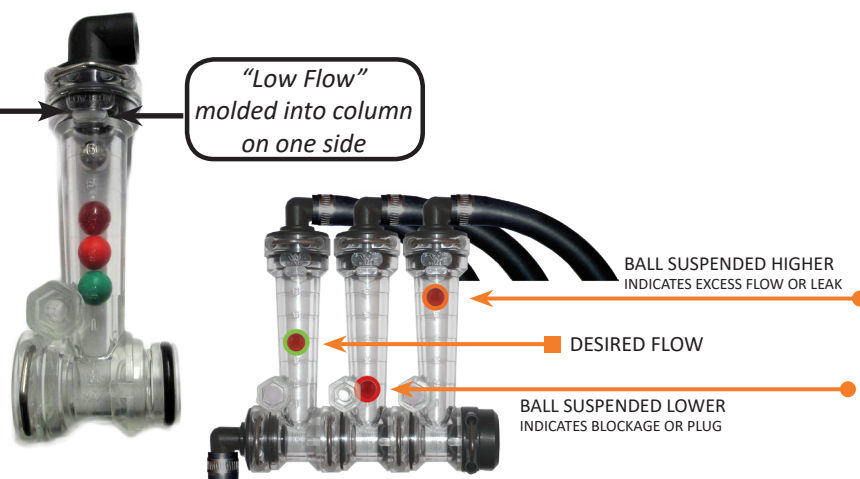
MISC COMPONENTS	
PN#	DESCRIPTION
25682	LOCK U-CLIP
428	GXCHASSIS SWIVEL KIT (Complete)
54123	GXSWIVEL KIT (No Tomahawk)
54839	GXEXTENDER BRACKET
PLUMBING	
308	3/4" BLACK HOSE (Use #12 CLAMPS - PN#19646)
19920	1/4" BLACK TUBING
54121	3/8" BLACK TUBING
17614	3/8" BLACK HOSE (Use #6 CLAMPS - PN#17649)

The "Low Flow" columns are recommended for rates under 10 GPA. The "Low Flow" column has a smaller internal diameter. This means a heavier ball can be used to monitor a smaller flow. Since the plastic balls will flow at on heavier fertilizers, the "Low Flow" columns work better for rates under 10 GPA.

Externally, the low flow column can be identified by "Low Flow" molded into one side of the column. All the same fittings work with either the low flow or standard flow columns.

Flow indicators give a clear visual signal that a fertilizer system is working. These indicators use an O'ring and wire clip connection to snap together in numerous configurations.

Agxcel uses a simple tee bracket and U-bolts that will mount to a variety of bar sizes.



4 lb check valves are typically used with GX2 Series electric pump systems. Agxcel recommends this valve be used with 1/4" tubing applying up to 10 GPA on 30" rows. The recommended minimum system operating pressure for this check is 10 psi, to ensure all checks open fully. *For available check valves see pg.7*

#### NOTE:

blue cap = 4lb check valve  
black cap = 10lb check valve



#### OLD

Two piece Diaphragm & pressure pad o-ring

PN# 25803  
Viton Only



PN# 25686  
Viton Only

#### NEW

One piece Integrated Diaphragm/o-ring

PN# 26410  
FKM Only



**NOTE:** Old style will be available until current stock is exhausted.



#### CALCULATOR

Our easy to use, orifice and metering tube calculator is available FREE now on the App Store.

This is a reference guide of our most common components and replacement parts for ease of ordering. If you do not see the component used in your kit, please contact our office for assistance.



The GX5 Manifold kit is used for distribution of 10 GPA and above. The kit includes “Standard” floating ball manifold columns, column backdrop and base bracket for mounting on a tool bar, check valves per row, 3 sets of orifices, 60psi gauge, emergency field kit and plumbing (ie. hose and/or tubing) for all rows. All brackets are laser cut, powder coated and come with u bolt for mounting on tool bar.

All brackets are laser cut, powder coated and come with a u bolt for mounting on tool bar. An optional swivel bracket (PN#54123) is available allowing the flow indicator assembly bracket to mount at an angle for improved viewing.

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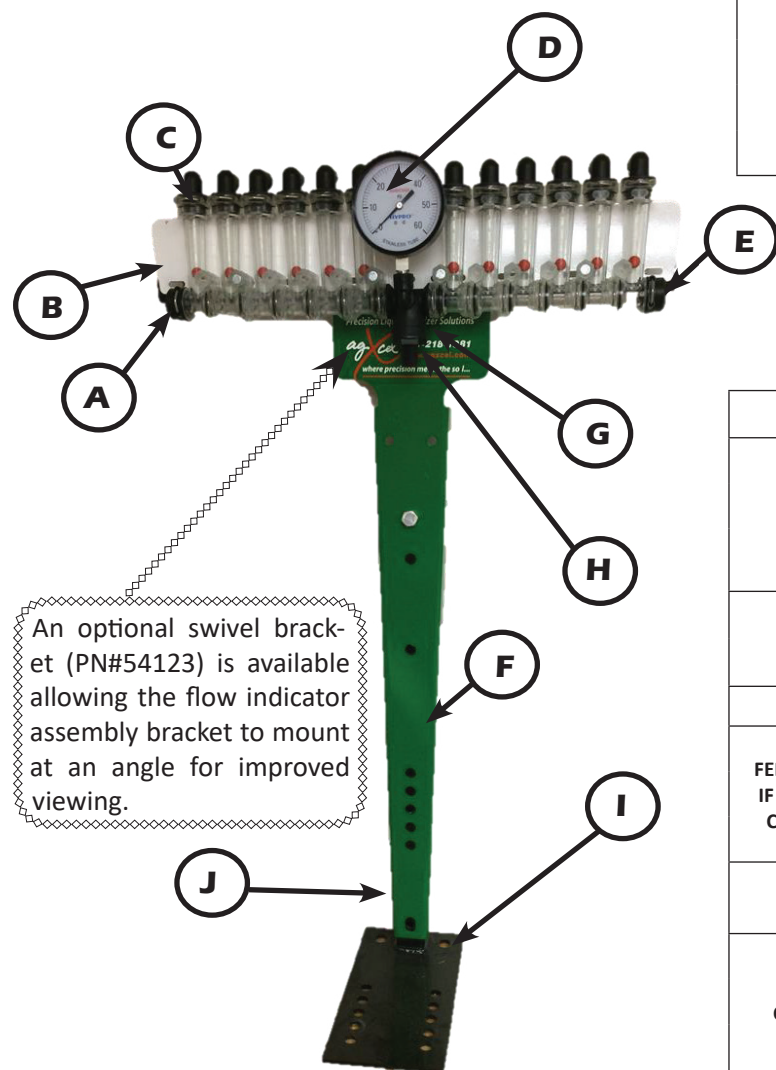
**NEW**

### O-ring Upgrade: FKM

All Wilger parts are transitioning to being manufactured with FKM O-rings & seals. The fluoroelastomer (FKM) o-ring provides superior chemical resistance and durability over Buna o-rings. \*\* Premium Viton o-rings, seals and assemblies will continue to be available\*\*

C		25709	1/4" PTC TOPS
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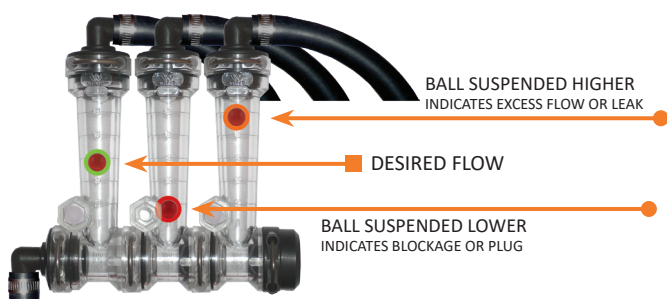


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F	38260	GX1 CHASSIS (TOMAHAWK ONLY)
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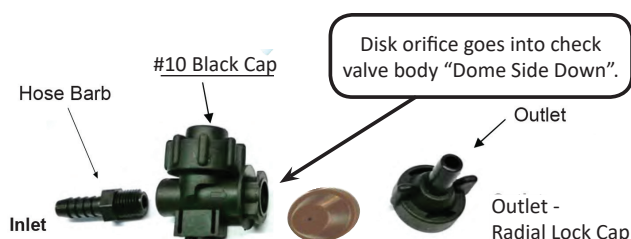


SIGHT COLUMNS		
PN#	DESCRIPTION	
STANDARD FLOW	55153	Wilger Standard Flow Column Only
	20985	Wilger Standard Flow Column W/balls, clip, retainer (No Top)
	37637	Wilger Std Flow Complete Column(s) 4 pack w/ End cap, clips & 3/8 barb Tops
	37724	Wilger Std Flow Complete Column(s) - 4 pack w/End cap, clips & 3/8QC Tops
BALL SELECTION FOR 30" ROWS - STD FLOW		
3-6 GPA	18077	Green Plastic* Ball
3-10 GPA	18078	Red Plastic* Ball
10-20 GPA	18079	Maroon Glass Ball
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MISC COMPONENTS	
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19920	1/4" BLACK TUBING
54121	3/8" BLACK TUBING
17614	3/8" BLACK HOSE (Use #6 CLAMPS - PN#17649)



The recommended check valve for most GX5 Installations is the 10 lb check valves with 3/8" hose barbs. This works with 3/8" rubber hose which Agxcel recommends for most applications over 10 GPA on 30" rows. The recommended minimum system operating pressure for this check is 20 psi, to ensure all checks open fully. *For available check valves see pg.7*



### OLD

Two piece Diaphragm & pressure pad o-ring

PN# 25803  
Viton Only



PN# 25686  
Viton Only

### NEW

One piece Integrated Diaphragm/o-ring



**NOTE:** Old style will be available until current stock is exhausted.

PN# 26410  
FKM Only

### CAP ASSEMBLY:

Snap in Strainer & Seal adapter (PN# 25953)

O-ring seal - FKM (PN# 25951)  
O-ring seal - Viton (PN# 25952)

3/8 Hose barb cap (SHOWN)



### CALCULATOR

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ORIFICES		
	PN#	DESCRIPTION
SPECIAL ORDER	17975	DC-BLANK
	18203	30-DC010 GREY LF
	19967	30-DC014 - ROYAL BLUE LF
	17591	30-DC018 TERRACOTA
	54523	30-DC020 BLACK LF
	17964	30 DC 023 PINK
	17965	30-DC028 GREY
	17966	30-DC015 - BLACK
	17967	30-DC-02 BROWN
	17968	30-DC-03 ORANGE
	53501	30-DC-035 MAROON
	17969	30-DC-04 RED
	17970	30-DC-05 BLUE
	17971	30-DC-06 YELLOW
	17972	30-DC-07 EMERALD GREEN
	17973	30-DC-08 WHITE
	17974	30-DC-10 LIME (IMPERIAL) GREEN
	19962	30-DC-12 ROYAL BLUE

CHECK VALVE COMPONENTS	
PN#	DESCRIPTION
26321	CR DIAPH MOD ASY 10 PSI BLK CAP
41716	CR DIAPH MOD ASY 4 PSI BLUE CAP
54538	O'RING VITON - PRESSURE PAD
25712	WILGER 1/4" COLLET
25718	WILGER 3/8" COLLET
25803	VITON DIAPHRAGM
25799	BUNA DIAPHRAGM (OLD STYLE)
25951	RADIAL LOCK CAP OUTER O-RING
26410	NEW STYLE FKM DIAPHRAGM
25953	COMBO-JET SEAL/STRAINER ADAPTER

METERING TUBES		
PN#		DESCRIPTION
38233		GX6MT - PINK
38241		GX6MT - YELLOW
38237		GX6MT - GREY
38242		GX6MT - NAVY BLUE
38243		GX6MT - BROWN
38250		GX6MT - SKY BLUE
38251		GX6MT - GREEN
38245		GX6MT - PURPLE
38246		GX6MT - ORANGE
38247		GX6MT - RED
38248		GX6MT - BLACK

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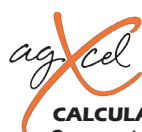
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Wider face for easier removal

Formed FKM seal for easier tube install

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PN# 54538  
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**NEW**






One piece Integrated Diaphragm/o-ring

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FKM Only



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CHECK VALVES			
	KIT#	ASSEMBLED PN#	DESCRIPTION
4#	310	38169 = BODY 38171 = 1/4 PTC CAP	4# CHECK VALVE WITH 1/4" PTC INLET/OUTLET 
	305	28549 = BODY 54260 = 3/8 PTC CAP 19884 = 3/8 PTC INLET	4# CHECK VALVE WITH 3/8" PTC INLET/OUTLET 
	316	28549 = BODY 32253 = 3/8 BARB INLET 53465 = 3/8 BARB CAP	4# CHECK VALVE WITH 3/8" HOSE BARB INLET/OUTLET 
10#	313	26315 = BODY 32253 = 3/8 BARB INLET 53465 = 3/8 BARB CAP	10# CHECK VALVE WITH 3/8" HOSE BARB INLET/OUTLET 
	307	26315 = BODY 54260 = 3/8 PTC CAP 19884 = 3/8 PTC INLET	10# CHECK VALVE WITH 3/8" PTC INLET/OUTLET 

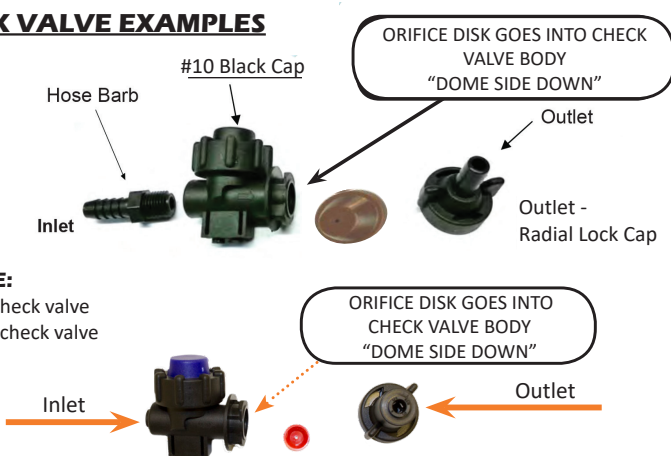


The preferred placement of the Agxcel check valve is as close to the row unit as possible, without sacrificing the security of the check valve. Approximately 30" from the bottom of the furrow (on every row, equal lengths) where liquid is being placed is ideal.

Follow these steps for successful placement:

1. Find a secure location, on top of the row unit where debris (like in no-till conditions) will not catch the check valve or tubing and rip it out of place.
2. Ensure that the install location allows for a tie strap to securely mount the check valve in place.
3. The check valve works best when approximately 30" from where liquid is being placed.
4. Ensure that the mounting location allows for ease of access to the orifice, in case the orifice size needs to be changed.

### CHECK VALVE EXAMPLES



#### NOTE:

blue cap = 4lb check valve  
black cap = 10lb check valve

### CAP ASSEMBLY

Snap in Strainer & Seal adapter (PN# 25953)

O-ring seal - FKM (PN# 25951)  
O-ring seal - Viton (PN# 25952)

3/8 Hose barb cap (SHOWN)



\*\* Be sure orifices are placed inside check valve body facing the correct way. The dome shape allows for debris to be pushed aside, regulating flow and producing a straight stream. They are precision molded in polyacetal for reliable performance.

## INTER PLANT

Sample Illustration of an inter plant wilger column setup

### SIGHT COLUMN BRACKETS

PN#		DESCRIPTION
A	406	UP TO 6R WHT BACKDROP
	414	UP TO 8R WHT BACKDROP
	20106	UP TO 12R WHT BACKDROP
B	18082	MOUNTING BRACKET FOR PN#406
	18088	MOUNTING BRACKET FOR PN#414
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SIGHT COLUMN HARDWARE KIT - PN#38324  
HARDWARE KIT USED FOR MOUNTING UP TO 12R ONTO GX1 CHASSIS BRACKET

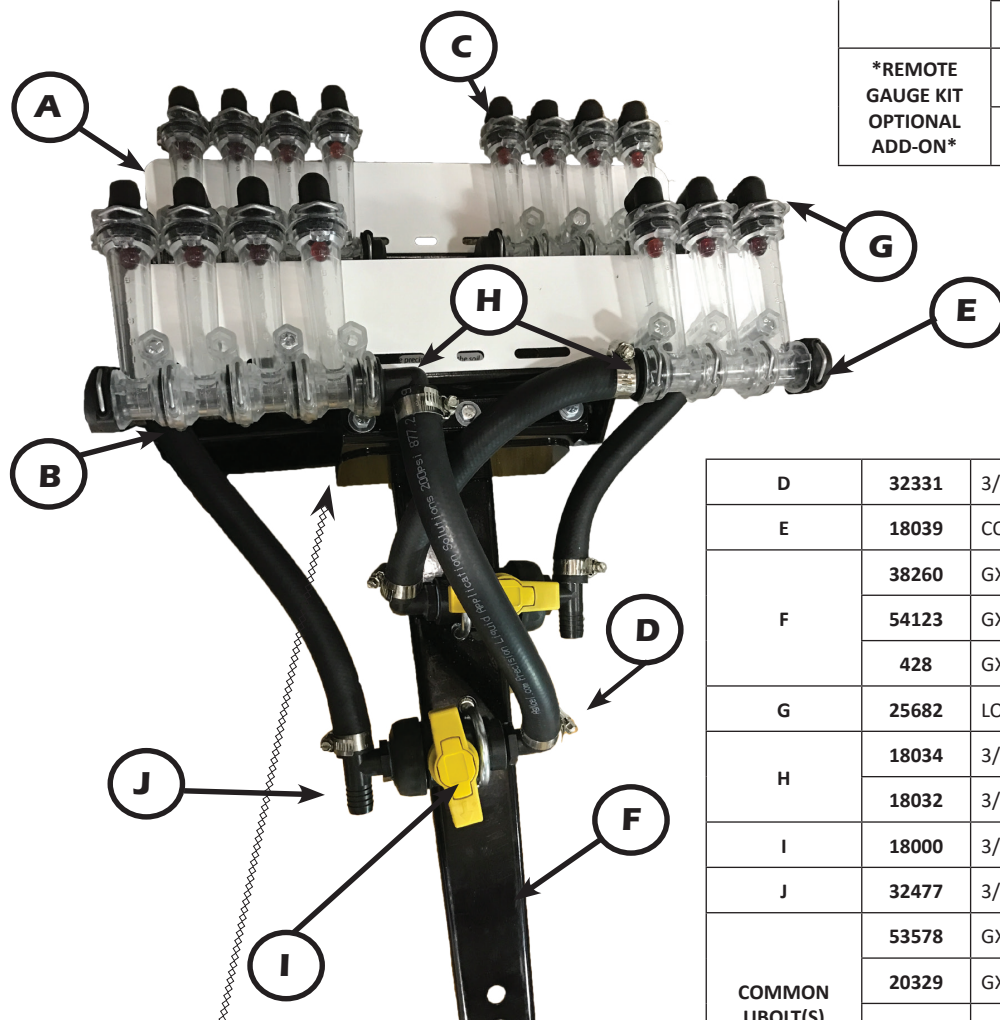
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C	25709	1/4" PTC TOPS
	18033	3/8" BARB TOPS
	17655	3/8" PTC TOPS
*REMOTE GAUGE KIT OPTIONAL ADD-ON*	53769	60 PSI REMOTE GAUGE KIT
	53770	160 PSI REMOTE GAUGE KIT



An extended swivel bracket (PN# 54839) allows the flow indicator assembly bracket to mount at an angle and at a distance away from secondary assembly for improved viewing

D	32331	3/4 MNPT X 3/4 HOSE BARB 90°
E	18039	COLUMN END CAP & CLIP
F	38260	GX1 CHASSIS (TOMAHAWK ONLY)
	54123	GXSWIVEL KIT (NO TOMAHAWK)
	428	GXCHASSIS SWIVEL KIT (COMPLETE)
G	25682	LOCK U CLIP
H	18034	3/4" HOSE SHANK - ELBOW
	18032	3/4" HOSE SHANK
I	18000	3/4" 2 WAY BALL VALVE
J	32477	3/4 MNPT X 3/4HB X 3/4HB TEE
COMMON UBOLT(S)	53578	GXUBOLT 7 X 8 1/2" (CASE/JD)
	20329	GXUBOLT 5 X 7 X 1/2"
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## INTER PLANT

Sample Illustration of an inter plant wilger column setup

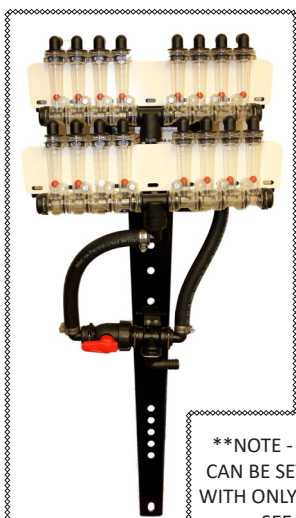
### ALTERNATE INTER PLANT ASSEMBLY

K	19646	SST - #12 CLAMP
L	54662	ELBOW T3F D.20 = 3/4" (QTY 2)
M	54701	2-WAY BALL VALVE T3M
	54674	O RING VITON ( QTY 3)
N	54664	HOSE TAIL T3M D.20 = 3/4"
	54674	O RING VITON
O	54677	FORK FOR T3 FITTINGS
P	54669	"T" FITTING T3F-T3F-T3F
Q	308	3/4" BLACK HOSE

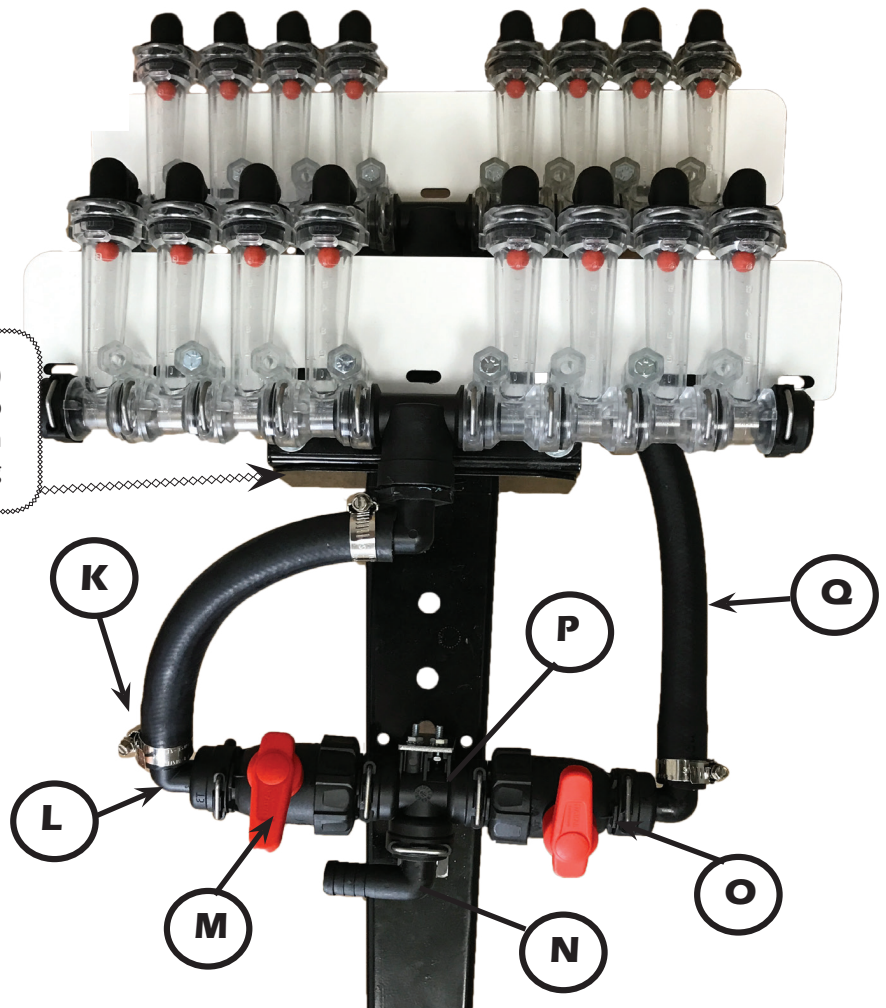
### PLUMBING

308	3/4" Black Hose (Use #12 Clamps - PN#19646)
19920	1/4" Black Tubing
54121	3/8" Black Tubing
17614	3/8" Black Hose (Use #6 Clamps - PN#17649)

An extended swivel bracket (PN# 54839) allows the flow indicator assembly bracket to mount at an angle and at a distance away from secondary assembly for improved viewing



**\*\*NOTE - THIS MANIFOLD CAN BE SETUP EFFECTIVELY WITH ONLY ONE BALL VALVE. SEE INSERT. \*\***

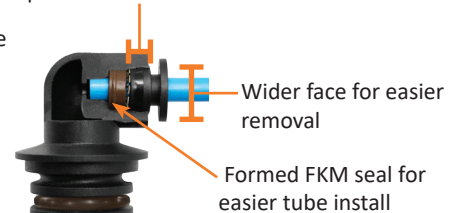


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The 1/4" Push-in tube outlets have received a full redesign for heavier duty sealing and easier release.

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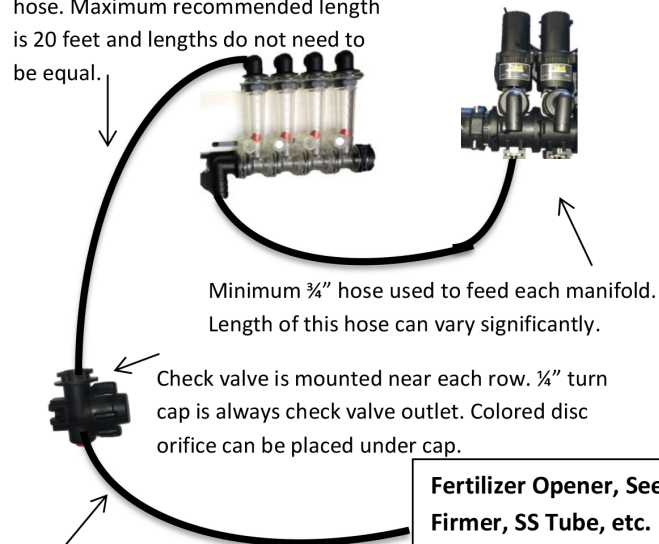


## FLEXIBLE CONFIGURATIONS

Floating ball manifolds are extremely flexible and can be mounted in many different configurations on various types of liquid implements. The following illustrations will provide some general concepts on how to configure your implement.

### Plumbing Overview

This is typically 1/4" OD tubing or 3/8" hose. Maximum recommended length is 20 feet and lengths do not need to be equal.



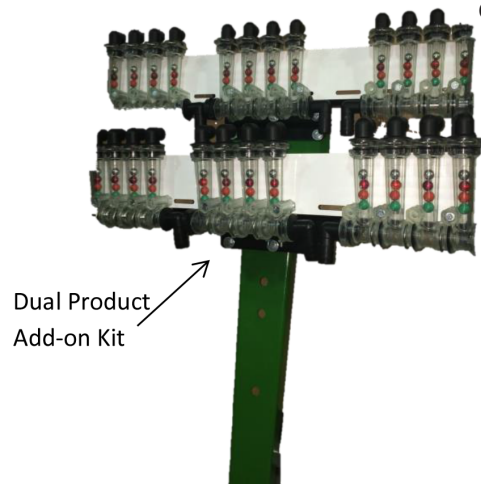
This is usually 1/4" OD tubing or 3/8" hose. Typical length is 1-4' with check valves place on each row that distance from ground.

### 12 Row Dual Product

#### Product 1 Split 4--4--4/Product 2 Split 4--4--4

Shown here is a 12 row with four 3 row sections controlled by four section valves. Note each 6 row T-Bracket can hold two separate 3 row manifolds. A 4 section 24 row could be similar with four 6 row manifolds on two large T-Brackets.

Product 1 on Top



### 12 Row

#### Split 3--3--3--3

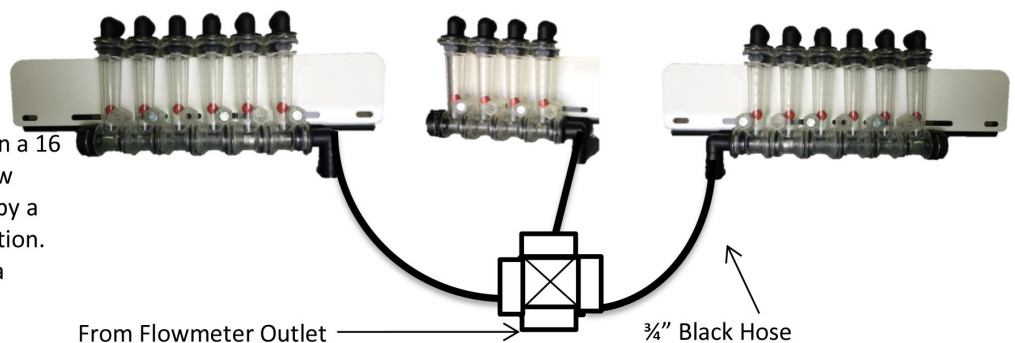
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### 16 Row

#### Split 6--4--6

This configuration works well on a 16 row front fold planter. Each flow indicator manifold is shown fed by a cross in a single section installation. Each manifold could be fed by a section valve if desired.



## ORS WILGER DRILL MANIFOLD

For applications that do not require visual monitoring, our NEW ORS manifold is a cost effective way to split up and meter flow directly from your feeds to your outlets.

Compatible with all ORS fittings and components.

Easy push pin assembly unlike older PVC style manifolds.

Mounting Bracket is versatile to either mount vertically or horizontally across a tool bar.



**NEW**

The 1/4" Push-in tube outlets have received a full redesign for heavier duty sealing and easier release.

Independent teeth & collet



Wider face for easier removal

Formed FKM seal for easier tube install

\*\* This redesign also applies to the radial lock caps on check valves \*\*

### ORS WILGER MANIFOLD

PN#		DESCRIPTION
A	18039	END CAP W/CLIP
	25744	FLOW THRU INLET 1/2 FPT (NOT SHOWN)
B	18082	MOUNTING BRACKET
	18088	MOUNTING BRACKET
	18083	MOUNTING BRACKET
COLUMN HARDWARE KIT - PN#38324 HARDWARE KIT USED FOR MOUNTING UP TO 12R		

**E**



\*4 port Manifold shown

**A**

**B**

**F**

**G**

**C**

**D**

**E**

C	25709	1/4" PTC TOPS
	18033	3/8" BARB TOPS
	17655	3/8" PTC TOPS
D	18032	WILGER STRAIGHT SHANK 3/4"
	18034	WILGER 90° SHANK 3/4"
*OPTIONAL CENTER FEED SETUP - NOT SHOWN*	18037 32239	WILGER FEMALE TEE 1" MNPT X 3/4" HB POLYPRO

E	55666	QRS MANIFOLD BUNA 1P
	55664	QRS MANIFOLD BUNA 2P
	55665	QRS MANIFOLD BUNA 3P
	55400	QRS MANIFOLD BUNA 4P*
F	54499	SADDLE MOUNTING BRKT
G	54498	LOWER ANGLE "SCOOP" BRKT



**CALCULATOR**

Our easy to use, orifice and metering tube calculator is available FREE now on the App Store.



#### NOTE:

blue cap = 4lb check valve  
black cap = 10lb check valve





The AgXcel GX6 system utilizing a dual metering manifold is a great way to plumb an implement to apply starter fertilizer. The GX6 system will also work on other implements when applying low rates of fertilizer and/or high viscosity solutions.

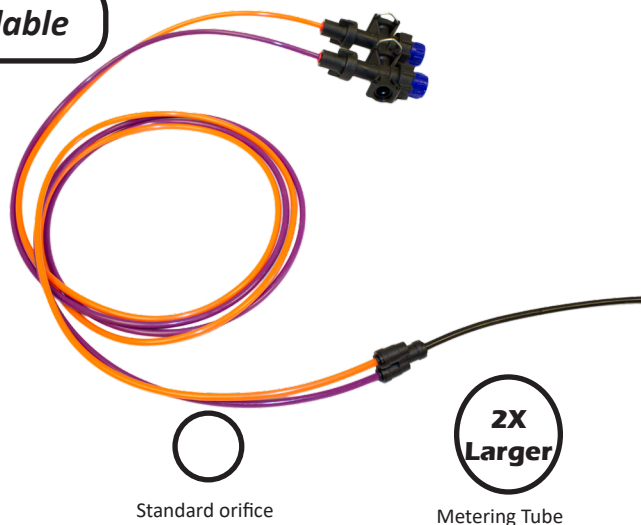
This system will contain everything required to plumb the manifold portion of your system all the way down to the furrow,

These instructions will show you where all the components go. There are some optional fittings included in each plumbing kit. However, the following pages will show you where and why you would need the optional pieces.

The dual body assembly is an important part in the dual metering manifold design. In addition to a check valve to prevent fertilizer from draining when the system is shut off, each check valve has an on/off valve on top of it. These on/off valves allow the operator to turn on only tube 1, only tube 2, or both tube 1 and 2. This provides for three different application ranges, which is especially helpful when using Black Label. Zn fertilizer which has a highly variable viscosity based on temperature changes.

METERING TUBES		
PN#		DESCRIPTION
38233		GX6MT - PINK
38241		GX6MT - YELLOW
38237		GX6MT - GREY
38242		GX6MT - NAVY BLUE
38243		GX6MT - BROWN
38250		GX6MT - SKY BLUE
38251		GX6MT - GREEN
38245		GX6MT - PURPLE
38246		GX6MT - ORANGE
38247		GX6MT - RED
38248		GX6MT - BLACK

11 sizes available



## DUAL METERING SYSTEM BENEFITS

Metering tube provides a larger passage way diameter than a comparable orifice. For a 5 GPA rate on 30" rows, a size 0.046" orifice would be used. For the same rate a 0.110" meter tube that is 8' long would be used. This 8' tube with more than twice the diameter creates a fertilizer system resistant to plugging while providing excellent row to row distribution.

By using two metering tubes, the fertilizer system can handle Black Label ZN Hydrahume and provide proper system pressure as the fertilizer properties change due to temperature, mixtures and other factors.



**DO NOT OVER TIGHTEN!**

When assembling the elbow and/or tee into the adapter casing of check valve body, be careful. It is easy to over tighten, cracking the casing. If purchased as a complete kit a couple of extra adapter bodies are provided.



**CALCULATOR**  
Our easy to use, orifice and metering tube calculator is available FREE now on the App Store.

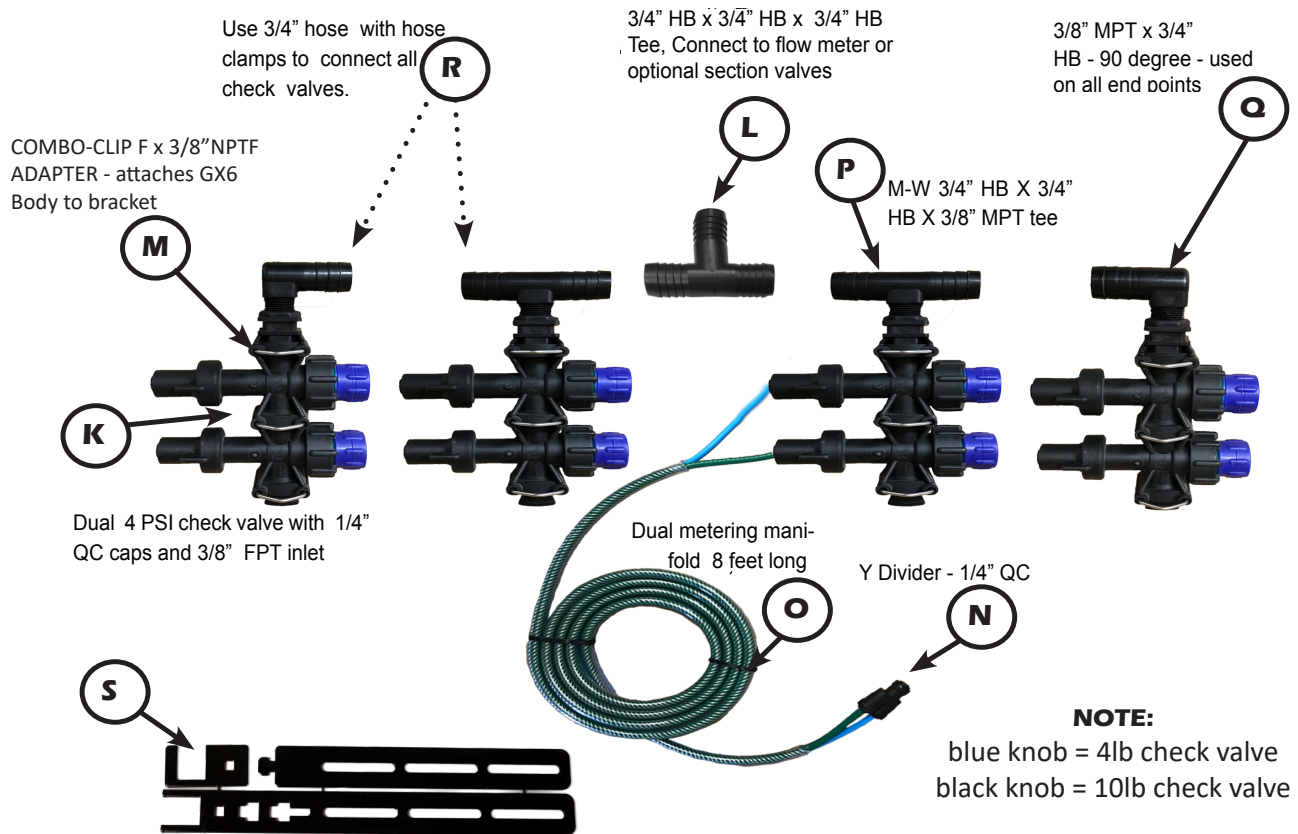
## GX6 MANIFOLD ASSEMBLY \*see pg.11

K	55162	GX6_DUALBODYCHKVALVE4# (BODY ONLY - NO INLETS)
	55362	GX6_DUAL BODY W/BRACKET
L	15	3/4" 3 WAY SHANK
M	26427	WILGER F x 3/8"NPTF ADAPTER
N	20121	1/4" QC DIVIDER
	<b>ALT. OPTION 3/8" OD APPLICATOR</b>	
	54011	3/8" QC DIVIDER
	54010	1/4" X 3/8" REDUCER
O	53654	GX6DUALTUBE8FT (DUAL COMES IN GREEN/SKY ONLY) *SEE PG# FOR AVAILABLE SIZES*
P	26148	3/4" 2 WAY SHANK
Q	26147	3/4" HOSE SHANK
R	308	3/4" BLACK HOSE
	19646	SST #12 CLAMPS
S	54044	GX6_1ROW BRACKET KIT



## PLUMBING DIAGRAM

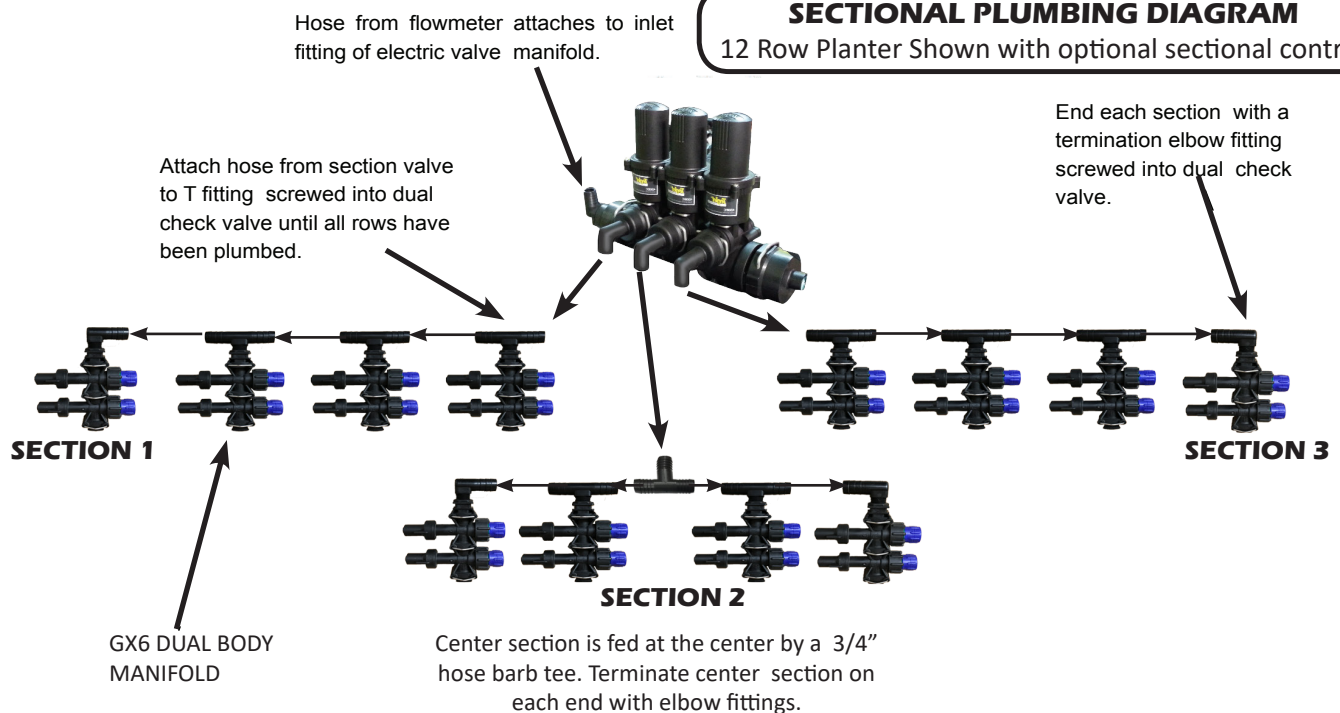
4 Row Planter Shown, add rows as necessary



This general diagram shows the GX6(dual check manifold) assembly mounted on a planter tool bar. The check valve and bracket are very flexible in their mounting. The GX6 can mount behind, directly over, or in front of the tool bar (see pg. 12 for examples). The GX6 can be put in the bracket facing up & down or sideways (shown). In addition the steel bracket could be rotated 90 degrees and clamp around the bar. The multiple slots in the bracket are used to mount to any tube 7x7 inches or smaller. Study your planter to determine the best GX6 mounting to use on each row.

## SECTIONAL PLUMBING DIAGRAM

12 Row Planter Shown with optional sectional controls



### DO NOT OVER TIGHTEN!

When assembling the elbow and/or tee into the adapter casing of check valve body, be careful. It is easy to over tighten, cracking the casing. If purchased as a complete kit a couple of extra adapter bodies are provided.

**TIP:** For a 2 section plumbing system, simply omit the center section and plumb similar to the outside 2 sections in the above diagram.

## MOUNTING OPTIONS



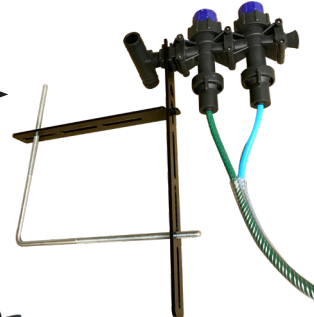
### EXAMPLE 1:

Use the long bracket on the top of a bar. The check valve is mounted vertically. The liquid supply hose is ran directl on the front side of the bar. The "L" bolt is placed in slots to clamp on a 4 x 6 inch tube.



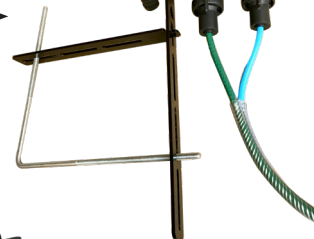
### EXAMPLE 2:

Use the long bracket on the rear of a bar. The check valve is mounted over the top of the bar. The supply line would run above and behind the bar. The short bracket is placed in the notch to mount the check valve closer to the bar.



### EXAMPLE 3:

Use the long bracket on the front of a 3 x 7 bar (vacuum tube on some planters). Mount the check valve hanging forward of the bar. The supply line will run directly over the bar. The excess bolt and bracket length can be cut off.

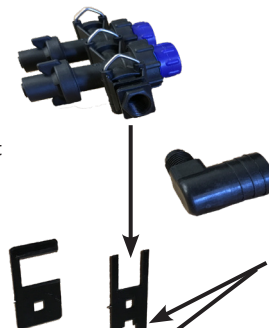


## ASSEMBLY STEPS

### STEPS TO MOUNT EACH CHECK VALVE TO MOUNTING BRACKET

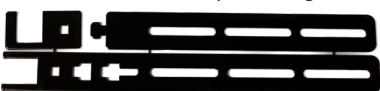
1. Screw the 3/8" MPT x 3/4" HB tee or elbow into the check valve using blue thread sealer. Orient the hose barb to run the 3/4" hose down the planter tool bar.
2. Insert the check valve into the "C" notch in the end of the bracket, according to how you want the check valve to mounded on your planter. Orient the wire clips up or to the side for easiest access.
3. Slide the small "C" clamp bracket around the check valve to lock it in place.
4. Install the 1/4" bolt and nut to secure the "C" clamp plate around the check valve.
5. Mount the check valve on the bar. Hold the check valve and long bracket assembly on the toolbar. Slide the tab on the front of the short bracket into the upper or lower notch on the long bracket.
6. Slide the "L" bolt into the appropriate slots on the brackets for your toolbar size. Tighten the 1/4" nuts to hold the bracket in place.

Clamp Bracket

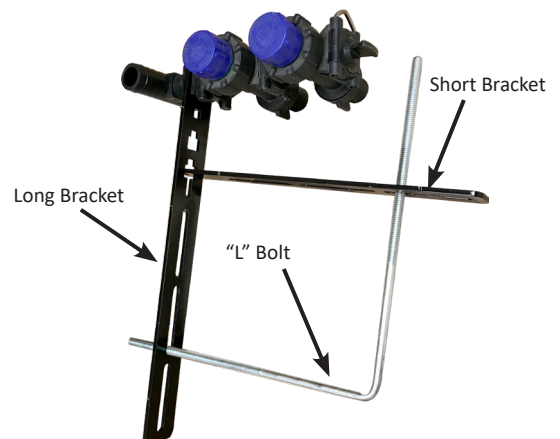


2 notch options for tab on short bracket

Universal Nozzle Body Mounting Bracket



The long, short & clamp bracket comes as one part connected by break-off tabs.



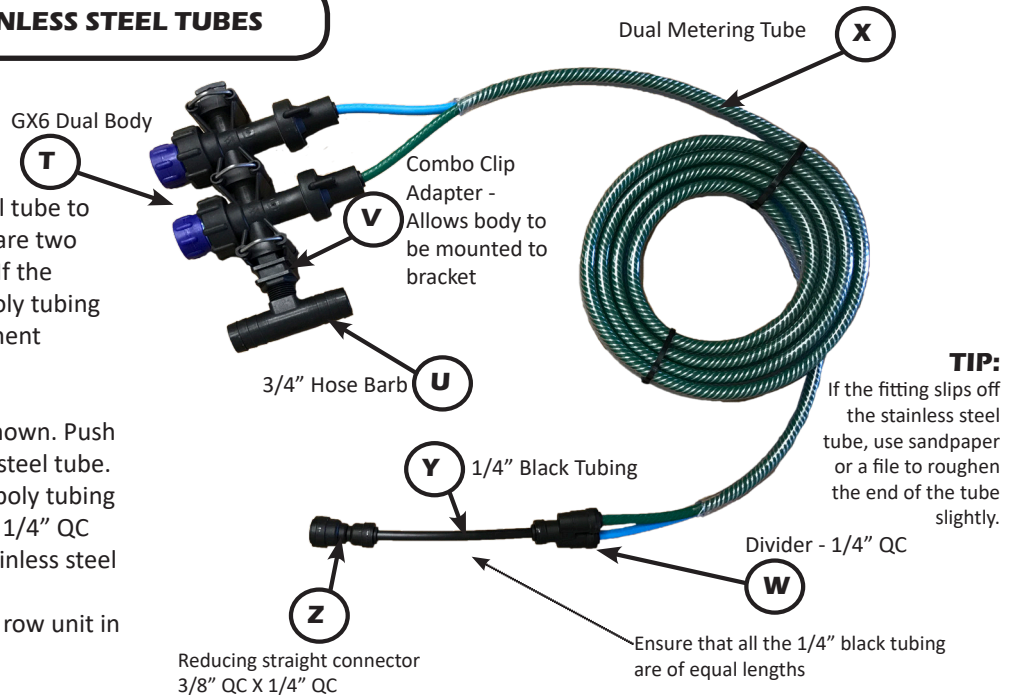
### DO NOT OVER TIGHTEN!

When assembling the elbow and/or tee into the adapter casing of check valve body, be careful. It is easy to over tighten, cracking the casing. If purchased as a complete kit a couple of extra adapter bodies are provided.

## INSTALLATION TO STAINLESS STEEL TUBES

When using a 3/8" OD stainless steel tube to apply fertilizer to the ground, there are two options for delivery tube plumbing. If the stainless tube ID is less than 1/4" (poly tubing will not fit inside tube) this attachment method must be used:

1. Use the 1/4" x 3/8" QC fitting shown. Push the 3/8" end onto the stainless steel tube.
2. Use a short piece of 1/4" black poly tubing to connect the "Y" fitting to the 1/4" QC end of reducer fitting on the stainless steel tube.
3. Zip all tubing to the planter and row unit in as many locations possible



**TIP:**  
If the fitting slips off the stainless steel tube, use sandpaper or a file to roughen the end of the tube slightly.

GX6 MANIFOLD ASSEMBLY		
T	55162	GX6_DUALBODYCHKVALVE4# (BODY ONLY - NO INLETS)
	55362	GX6_DUAL BODY W/BRACKET
U	26147	3/4" HOSE SHANK
	26148	3/4" 2 WAY SHANK
	26149	3/4" 3 WAY SHANK
V	26427	WILGER F x 3/8" NPTF ADAPTER
W	20121	1/4" QC DIVIDER
	ALT. OPTION 3/8" OD APPLICATOR	
	54011	3/8" QC DIVIDER
	54010	1/4" X 3/8" REDUCER
X	53654	GX6DUALTUBE8FT (DUAL COMES IN GREEN/SKY ONLY) *SEE PG 12 FOR AVAILABLE SIZES*
Y	19920	EVA14 - 1/4" TUBING
Z	38240	QC7 = 3/8 PTC TO 1/4" PTC

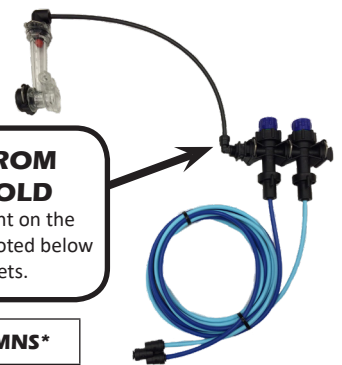
For thin wall stainless steel tubes, you can simply push the 1/4" black tubing all the way through the stainless steel tube so fertilizer will run directly from manifold onto the ground.

## INSTALLATION TO REBOUNDER SEED COVER

1. Mount the rebounder seed cover according to the instructions sent with it.
2. Route the tube included in the rebounder optional fittings kit. Make sure all lengths are equal. The rebounder optional kits come with 30" of 1/4" poly tubing.
3. Attach the 1/4" poly tube to the 1/4" QC "Y" divider fitting.
4. Zip all tubing to the planter and row unit in as many locations as possible.

## IF FEEDING GX6 SYSTEM FROM A FLOATING BALL MANIFOLD

The inlet to each dual body will be dependant on the outlet on the visual indicators. The adapters noted below are available in the corresponding outlets.



For other various GX6 components see pg.20

## METERING TUBES

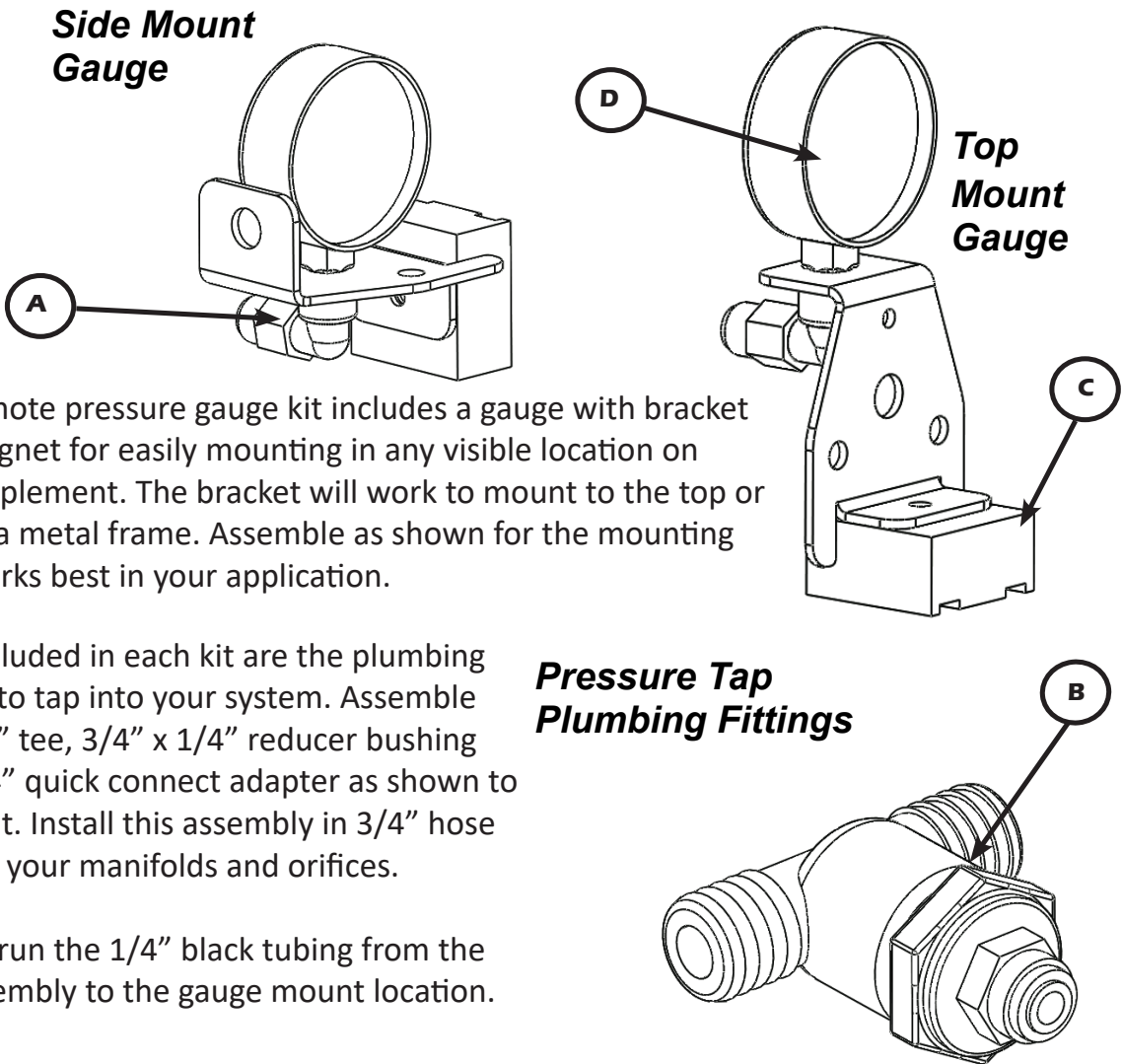
PN#	DESCRIPTION
38233	GX6MT - PINK
38241	GX6MT - YELLOW
38237	GX6MT - GREY
38242	GX6MT - NAVY BLUE
38243	GX6MT - BROWN
38250	GX6MT - SKY BLUE
38251	GX6MT - GREEN
38245	GX6MT - PURPLE
38246	GX6MT - ORANGE
38247	GX6MT - RED
38248	GX6MT - BLACK

## \*DEFAULT INLET ADAPTERS FROM VISUAL FLOW COLUMNS\*

	PN#	DESCRIPTION
	20395	QC13 = 1/4" QC TO 3/8" MALE NPTF
	54442	QC14 = 1/4" QC TO 3/8" NPTF
	54001	QC11 = 3/8 NPTF X 3/8" QC 90°
	32264	3/8" MNPT X 3/8" HB POLY
	32343	3/8" MNPT X 3/8" HB POLY ELBOW

# AGXCEL REMOTE MOUNT PRESSURE GAUGE KIT

60 PSI - ELECTRIC PUMP(S)    PN# 53769  
160 PSI - HYDRAULIC PUMP    PN# 53770



The remote pressure gauge kit includes a gauge with bracket and magnet for easily mounting in any visible location on your implement. The bracket will work to mount to the top or side of a metal frame. Assemble as shown for the mounting that works best in your application.

Also included in each kit are the plumbing fittings to tap into your system. Assemble the 3/4" tee, 3/4" x 1/4" reducer bushing and 1/4" quick connect adapter as shown to the right. Install this assembly in 3/4" hose prior to your manifolds and orifices.

Finally, run the 1/4" black tubing from the tee assembly to the gauge mount location.

## GAUGE KIT INSTALLATION INSTRUCTIONS:

1. Install in line tee with 1/4" quick connect between final filter and before manifold.
2. Use 1/4" tubing to plumb the gauge and use the magnetic mount to place gauge where desired.
3. For automated systems, ensure that the gauge kit tee is installed at least 24" after the flow meter but before the manifold.

KIT COMPONENTS		
PN#		DESCRIPTION
A	168	QC9
B	20340	IN LINE ILG TEE
C	17960	MAGNET MOUNT
NOT SHOWN	19646	#12 STAINLESS STEEL CLAMPS QTY=2
	33816	4" AMMONIA 60 PSI GAUGE
ONLY 1 GAUGE PER KIT	33812	4" AMMONIA 160 PSI GAUGE



## GX MERCURY SWITCH KIT

**PN# 54066**

**PN# 54112 (2 PIN -JOHN DEERE)**

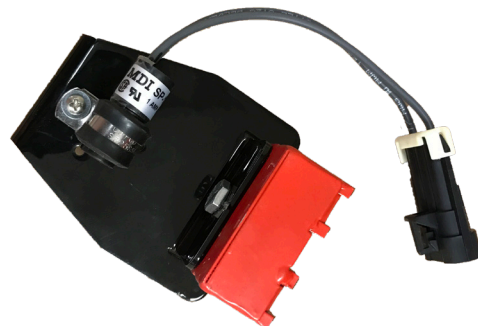
### KIT INCLUDES:

- 2- 15FT Extension(s) (John Deere or 3pin connector)
- 1- Mercury Switch (PN# 54024 - Switch only)
- 1- Magnet Mount (PN# 17960)

### MERCURY SWITCH KIT:

- Run/Hold optional connections (If not using be sure to use provided loop to close circuit)
  - For use with a N.O. (normally open) whisker switch, remove the dummy plug and connect to your run/hold switch wires. A smaller gauge wire (18 AWG minimum) may be used for this low current circuit.
  - For use with a hall-effect sensor, remove the dummy plug and attach the plug from your sensor.

*Illustration shown has a 3pin connector.*

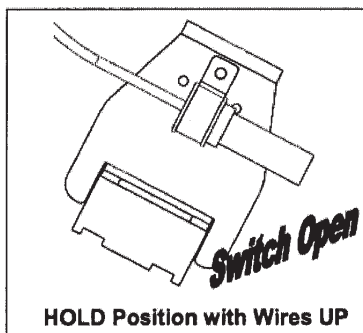


### HOW TO ADJUST:

If your controller is turning off product application before or after you want, tilt the switch. If it turns off after you want when lifting the implement, tip more to the HOLD position. If product application should begin sooner when you lower the implement, tip more to the RUN position.

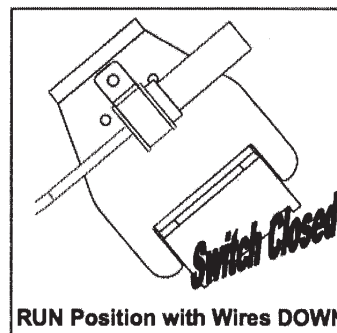
### HOW TO TEST:

To test the run/hold mercury switch you will need a volt meter. Set the meter to test continuity (or ohms). With the wires down, you should have continuity between the two pins in the connector. With the wires up, the switch should be open (no continuity).



#### MOUNT THE SWITCH ON:

- 3 point arm if in use
- Planter wheel frame that changes angle
- Drill opener frame if openers are pivoted to raise out of ground.



EXTENSIONS AVAILABLE		
3PIN	2PIN	DESCRIPTION
17924	55917	GXH_EXT 15FT
54073	55415	GXH_EXT 30FT
*Custom extension lengths can be special ordered - contact SALES for a price quote*		

## GXIMPLEMENTSWITCH KIT

**PN# 53824**

**PN# 53982 (2 PIN - JOHN DEERE)**

### KIT INCLUDES:

- 1- 15FT Extension (John Deere or 3pin connector)
- 1- Implement Switch with 15FT Lead (PN# 17921)
- 1- Magnet Mount (PN# 17960)



### IMPLEMENT SWITCH KIT :

1. Run/Hold optional connections (If not using be sure to use provided loop to close circuit)
  - For use with a N.O. (normally open) whisker switch, remove the dummy plug and connect to your run/hold switch wires. A smaller gauge wire (18 AWG minimum) may be used for this low current circuit.
  - For use with a hall-effect sensor, remove the dummy plug and attach the plug from your sensor.



*Illustration shown has a 3pin connector.*

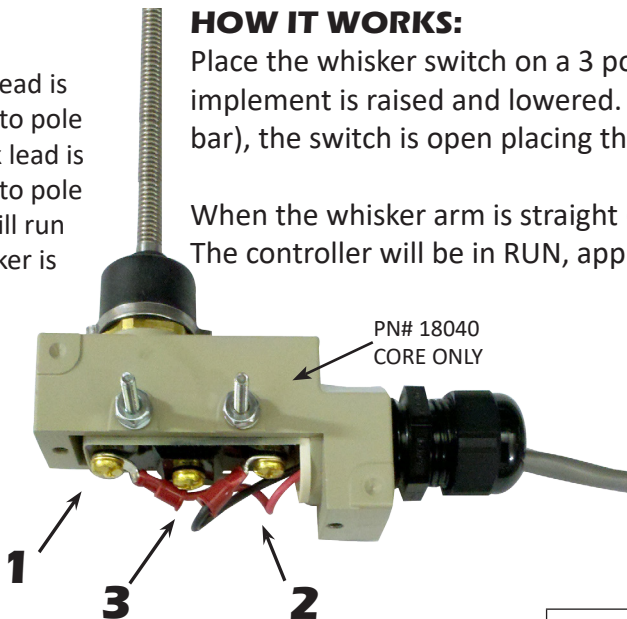
### HOW IT WORKS:

When red lead is connected to pole 1 and black lead is connected to pole 2 pumps will run when whisker is straight

Place the whisker switch on a 3 point arm or wheel frame that changes angle as the implement is raised and lowered. When the whisker arm is bent up (against the tool bar), the switch is open placing the controller in HOLD, not applying fertilizer.

When the whisker arm is straight (not touching the toolbar), the switch will be closed. The controller will be in RUN, applying fertilizer.

\* The Whisker switch will work with many other controllers. However, the polarity might be reversed from the positions described above.



When red lead is connected to pole 1 and black lead is connected to pole 3 pumps will run when whisker is bent

### EXTENSIONS AVAILABLE

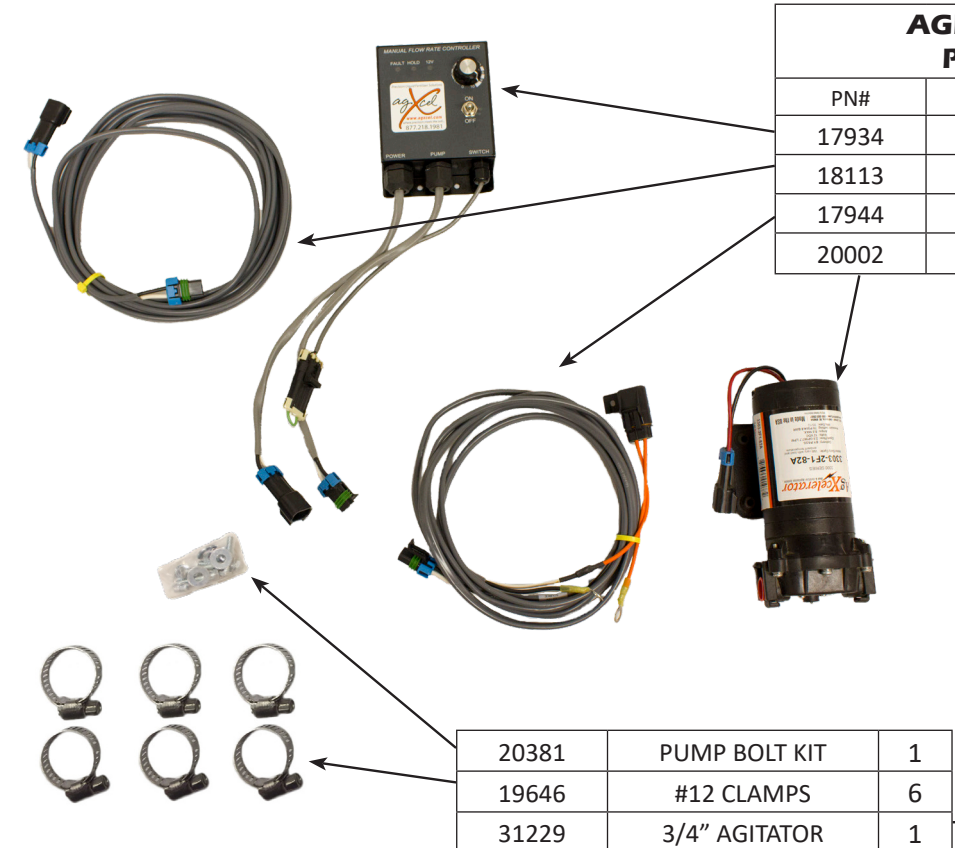
3PIN	2PIN	DESCRIPTION
17924	55917	GXH_EXT 15FT
54073	55415	GXH_EXT 30FT
*Custom extension lengths can be special ordered - contact SALES for a price quote*		



AGXCEL AGITATION KIT

PN# 19986

(READ INSTRUCTIONS COMPLETELY BEFORE BEGINNING INSTALLATION)



PN#	ITEM	QTY
17934	MANX	1
18113	15FT EXTENSION	1
17944	BATTERY CABLE	1
20002	5.3 GPM QC PUMP	1

20381	PUMP BOLT KIT	1
19646	#12 CLAMPS	6
31229	3/4" AGITATOR	1


  

15	3/4" HB PP TEE	1
20343	PUMP BRACKET	1
17920	PUMP O-RING BARB	2
32276	3/4" FNPT 3/4"HB	1








17649	#6 HD CLAMPS	2
56138	3/8" PUMP O'RING BARB	1
20808	3/8" BARB STEM	1

USE 3/8" STEM AND 3/8" BARB QUICK ATTACH TO INLET ON PUMP - HOSE NOT INCLUDED ONLY FOR GX2C STYLE ADAPTION



## VISUAL PARTS INDEX

This is a visual index of our most common components and replacement parts for ease of ordering. If you do not see the component used in your kit, please contact our office for assistance.

GX6 COMPONENTS		
	PN#	DESCRIPTION
	26148	3/4" 2 WAY SHANK
	26149	3/4" 3 WAY SHANK
	26147	3/4" 1 WAY SHANK
	25887	FKM O-RING IN COMBO END ADAPTERS
	26337	GX6 10# END VALVE BODY - NO FLOW THRU (NO CAPS)
	37592	GX6 4# END VALVE BODY - NO FLOW THRU (NO CAPS)
	55005	GX6 DUAL BODY CHECK VALVE (10# -BLK) ASSEMBLED UNIT (pictured)
	55162	GX6 DUAL BODY CHECK VALVE (4# -BLUE) ASSEMBLED UNIT
	20121	1/4" DIVIDER

### NOTE:

For our non-GX6 variety of check valves, please see pg. 7 for the fully assembled PN#'s as well as the component parts within the assembled kits.



#### CALCULATOR

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## VISUAL PARTS INDEX

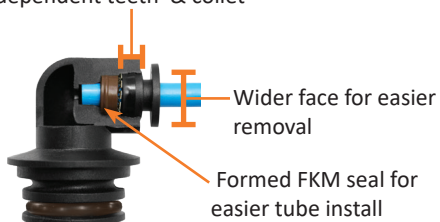
This is a visual index of our most common components and replacement parts for ease of ordering. If you do not see the component used in your kit, please contact our office for assistance.

GX6 COMPONENTS		
	PN#	DESCRIPTION
	26330	GX6 10# THRU VALVE BODY (NO CAPS)
	26612	GX6 4# THRU VALVE BODY (NO CAPS)
	25682	LOCK U-CLIP
	26455	COMBO CLIP PLUG
	26427	COMBO CLIP ADAPTER X 3/8" NPT
	25803	VITON DIAPHRAGM
	26410	FKM DIAPHRAGM (NEW STYLE - SEE BELOW)
	54044	GX6 MOUNTING BRACKET W/HARDWARE & L BOLT
	38171 25953 25951 25712	RADIAL CAP 1/4" QC (components below - not shown) O'RING SEAL/STRAINER RADIAL CAP OUTER O'RING (FKM) WILGER 1/4" COLLET
	54011 54010	3/8 PTC QUICK CONNECT DIVIDER 1/4 PTC X 3/8 STEM REDUCER

**NEW**

Independent teeth & collet

The 1/4" Push-in tube outlets have received a full redesign for heavier duty sealing and easier release.



\*\* This redesign also applies to the radial lock caps on check valves \*\*

**NEW**

**OLD**

Two piece Diaphragm & pressure pad o-ring

PN# 25803  
Viton Only

PN# 25686  
Viton Only



\*\* Premium Viton o-rings, seals and assemblies will continue to be available \*\*

**NEW**

One piece Integrated Diaphragm/o-ring

PN# 26410  
FKM Only



**NOTE:** Old style will be available until current stock is exhausted.

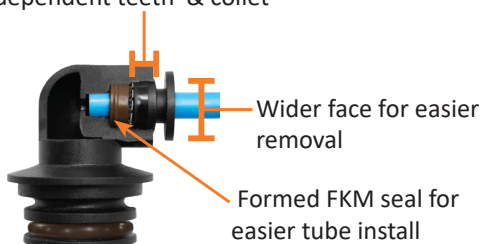
## VISUAL PARTS INDEX

SIGHT COLUMN COMPONENTS		
	PN#	DESCRIPTION
	25709	Wilger Top cap 1/4" QC
	25712	Tube guide for 1/4" QC
	18033	3/8" Hose Shank Inlet - 90 degree
	17655	Wilger Top Cap 3/8" QC
	25718	Collet for 3/8" QC (not pictured)
	38260	GX Chassis (Tomahawk) Approx. 32.5" Tall
	19992	FKM "O" ring for use between flow columns & on wilger tops
	25686	Viton "O" ring for use between flow columns & on wilger tops
	32239	3/4" Hose Shank Inlet (used with center fed tee PN# 18037)
	52142	1/4" Poly Elbow (used with center fed tee PN# 18037 tee for gauge)
	262	QC3 - 1/4" QC TO 1/4" QC
	20407	QC15 - 3/8" QC TO 3/8" QC (not pictured)
	38240	QC7 - 1/4" QC TO 3/8" QC

**NEW**

Independent teeth & collet

The 1/4" Push-in tube outlets have received a full redesign for heavier duty sealing and easier release.



\*\* This redesign also applies to the radial lock caps on check valves \*\*

### CAP ASSEMBLY:

Snap in Strainer & Seal adapter (PN# 25953)

O-ring seal - FKM (PN# 25951)  
O-ring seal - Viton (PN# 25952)

3/8 Hose barb cap (SHOWN)



## VISUAL PARTS INDEX

### NOTE:

For our check valves, please see pg. 7 for the fully assembled PN#'s as well as the component parts within the assembled kits.

SIGHT COLUMN COMPONENTS		
	PN#	DESCRIPTION
	18032	3/4" Hose Shank Inlet
	18034	3/4" Hose Shank Inlet - 90 degree
	18039	Column End cap & Clip
	25682	Clip Only
	18082	Mounting Bracket for PN#406
	18088	Mounting Bracket for PN#414
	18083	Mounting Bracket for PN#20106
	406	up to 6R Flow Column Backdrop (white)
	414	up to 8R Flow Column Backdrop (white)
	20106	7-12R Flow Column Backdrop (white)
	25687	Wilger Low Flow Column w/balls,clip, retainer (no top)
	20985	Wilger Standard Column w/balls,clip, retainer (no top)
	37617	Wilger Low Flow Column Complete - 4 pack w/end cap
	37637	Wilger Standard Column Complete - 4 pack w/end cap
	18037	Wilger center fed tee (will need PN# 32239 1" MNPT X 3/4" HB to connect inlet hose - see pg. 22)
	25681	Flow column ball retainer

### OLD

Two piece Diaphragm & pressure pad o-ring

PN# 25803  
Viton Only



PN# 25686  
Viton Only



### NEW

One piece Integrated Diaphragm/o-ring

PN# 26410  
FKM Only



\*\* Premium Viton o-rings, seals and assemblies will continue to be available \*\*

## DISK ORIFICE CHART

For 30" row spacing



**CALCULATOR**

Our easy to use, orifice and metering tube calculator is available FREE now on the App Store.



# 30" Spacing

Orifice Color (Approx Size)	PSI	Gal/Min 28-0-0	MPH						
			4.0	4.5	5.0	5.5	6.0	6.5	7.0
Pink (24)	10	0.033	1.62	1.44	1.30	1.18	1.08	1.00	0.93
	20	0.046	2.28	2.02	1.82	1.66	1.52	1.40	1.30
	30	0.057	2.80	2.49	2.24	2.04	1.87	1.73	1.60
	40	0.065	3.24	2.88	2.59	2.36	2.16	1.99	1.85
	50	0.073	3.64	3.23	2.91	2.64	2.42	2.24	2.08
	60	0.081	3.99	3.54	3.19	2.90	2.66	2.45	2.28
Gray (30)	10	0.050	2.50	2.22	2.00	1.82	1.66	1.54	1.43
	20	0.072	3.55	3.15	2.84	2.58	2.37	2.18	2.03
	30	0.088	4.34	3.85	3.47	3.15	2.89	2.67	2.48
	40	0.101	4.99	4.44	4.00	3.63	3.33	3.07	2.85
	50	0.112	5.56	4.95	4.45	4.05	3.71	3.42	3.18
	60	0.124	6.13	5.45	4.91	4.46	4.09	3.77	3.50
Black (35)	10	0.070	3.46	3.08	2.77	2.52	2.31	2.13	1.98
	20	0.098	4.86	4.32	3.89	3.54	3.24	2.99	2.78
	30	0.120	5.96	5.30	4.77	4.33	3.97	3.67	3.40
	40	0.139	6.88	6.11	5.50	5.00	4.58	4.23	3.93
	50	0.156	7.71	6.85	6.17	5.61	5.14	4.74	4.41
	60	0.170	8.41	7.48	6.73	6.12	5.61	5.18	4.81
Brown (41)	10	0.094	4.64	4.13	3.71	3.38	3.10	2.86	2.65
	20	0.132	6.53	5.80	5.22	4.75	4.35	4.02	3.73
	30	0.162	8.02	7.13	6.41	5.83	5.34	4.93	4.58
	40	0.187	9.24	8.22	7.39	6.72	6.16	5.69	5.28
	50	0.209	10.34	9.19	8.27	7.52	6.89	6.36	5.91
	60	0.228	11.30	10.05	9.04	8.22	7.53	6.95	6.46
Orange (46)	10	0.119	5.91	5.26	4.73	4.30	3.94	3.64	3.38
	20	0.169	8.37	7.44	6.69	6.08	5.58	5.15	4.78
	30	0.207	10.25	9.11	8.20	7.45	6.83	6.31	5.86
	40	0.239	11.83	10.51	9.46	8.60	7.88	7.28	6.76
	50	0.267	13.23	11.76	10.58	9.62	8.82	8.14	7.56
	60	0.293	14.50	12.89	11.60	10.55	9.67	8.92	8.29
Maroon (52)	10	0.149	7.36	6.54	5.89	5.35	4.91	4.53	4.21
	20	0.210	10.38	9.23	8.31	7.55	6.92	6.39	5.93
	30	0.257	12.70	11.29	10.16	9.24	8.47	7.82	7.26
	40	0.296	14.67	13.04	11.74	10.67	9.78	9.03	8.39
	50	0.332	16.43	14.60	13.14	11.95	10.95	10.11	9.39
	60	0.363	17.96	15.96	14.37	13.06	11.97	11.05	10.26
Red (63)	10	0.218	10.78	9.58	8.62	7.84	7.18	6.63	6.16
	20	0.307	15.20	13.51	12.16	11.05	10.13	9.35	8.69
	30	0.376	18.62	16.55	14.89	13.54	12.41	11.46	10.64
	40	0.435	21.51	19.12	17.21	15.64	14.34	13.24	12.29
	50	0.486	24.05	21.38	19.24	17.49	16.03	14.80	13.74
	60	0.532	26.33	23.40	21.06	19.15	17.55	16.20	15.04
Blue (80)	10	0.351	17.39	15.46	13.91	12.65	11.59	10.70	9.94
	20	0.496	24.57	21.84	19.66	17.87	16.38	15.12	14.04
	30	0.608	30.09	26.75	24.08	21.89	20.06	18.52	17.20
	40	0.702	34.74	30.88	27.79	25.26	23.16	21.38	19.85
	50	0.785	38.86	34.54	31.08	28.26	25.90	23.91	22.20
	60	0.859	42.53	37.81	34.03	30.93	28.36	26.18	24.31
Yellow (95)	10	0.506	25.06	22.27	20.05	18.22	16.70	15.42	14.32
	20	0.715	35.39	31.46	28.32	25.74	23.60	21.78	20.23
	30	0.876	43.37	38.55	34.69	31.54	28.91	26.69	24.78
	40	1.009	49.94	44.39	39.95	36.32	33.29	30.73	28.54
	50	1.133	56.07	49.84	44.86	40.78	37.38	34.51	32.04
	60	1.239	61.33	54.51	49.06	44.60	40.88	37.74	35.04
Green (110)	10	0.686	33.95	30.18	27.16	24.69	22.63	20.89	19.40
	20	0.973	48.19	42.83	38.55	35.04	32.12	29.65	27.53
	30	1.186	58.70	52.18	46.96	42.69	39.13	36.12	33.54
	40	1.372	67.90	60.35	54.32	49.38	45.27	41.78	38.80
	50	1.531	75.78	67.36	60.63	55.12	50.52	46.64	43.30
	60	1.681	83.23	73.98	66.58	60.53	55.49	51.22	47.56

### AgXcel GX Electric Pump(s) Pressure recommendations (with a 4lb check valve)

- Minimum 10 PSI
- Maximum 30 PSI

### AgXcel GX Pressure recommendations (with a 10lb check valve)

- Minimum 20 PSI
- Maximum 80 PSI

### Chart is for 28-0-0 Fertilizer @ 70 Degree

- Heavier fertilizers (like 10-34-0) will have 5-15% less flow than chart indicates for a certain pressure
- Cold fertilizers will cause system pressure to increase at a given application rate.
- GX Electric Pump Systems will have reduced flow and increased electrical current draw due to cold fertilizer increasing operating pressure. **Use the largest orifice possible for cold weather operation.**

For orifice part numbers see pg.6



# DISK ORIFICE CHART

Common Grain Drill row spacings

## 7.5" Spacing

Orifice Color (Approx Size)	Gal/Min		MPH						
	PSI	28-0-0	4.0	4.5	5.0	5.5	6.0	6.5	7.0
Pink (24)	10	0.033	6.5	5.8	5.2	4.7	4.3	4.0	3.7
	20	0.046	9.1	8.1	7.3	6.6	6.1	5.6	5.2
	30	0.057	11.2	10.0	9.0	8.2	7.5	6.9	6.4
	40	0.065	13.0	11.5	10.4	9.4	8.6	8.0	7.4
	50	0.073	14.5	12.9	11.6	10.6	9.7	8.9	8.3
	60	0.081	15.9	14.2	12.8	11.6	10.6	9.8	9.1
Gray (30)	10	0.050	10.0	8.9	8.0	7.3	6.7	6.1	5.7
	20	0.072	14.2	12.6	11.4	10.3	9.5	8.7	8.1
	30	0.088	17.3	15.4	13.9	12.6	11.6	10.7	9.9
	40	0.101	20.0	17.8	16.0	14.5	13.3	12.3	11.4
	50	0.112	22.3	19.8	17.8	16.2	14.8	13.7	12.7
	60	0.124	24.5	21.8	19.6	17.8	16.4	15.1	14.0
Black (35)	10	0.070	13.8	12.3	11.1	10.1	9.2	8.5	7.9
	20	0.098	19.4	17.3	15.6	14.1	13.0	12.0	11.1
	30	0.120	23.8	21.2	19.1	17.3	15.9	14.7	13.6
	40	0.139	27.5	24.5	22.0	20.0	18.3	16.9	15.7
	50	0.156	30.8	27.4	24.7	22.4	20.6	19.0	17.6
	60	0.170	33.6	29.9	26.9	24.5	22.4	20.7	19.2
Brown (41)	10	0.094	19	17	15	14	12	11	11
	20	0.132	26	23	21	19	17	16	15
	30	0.162	32	29	26	23	21	20	18
	40	0.187	37	33	30	27	25	23	21
	50	0.209	41	37	33	30	28	25	24
	60	0.228	45	40	36	33	30	28	26
Orange (46)	10	0.119	24	21	19	17	16	15	14
	20	0.169	33	30	27	24	22	21	19
	30	0.207	41	36	33	30	27	25	23
	40	0.239	47	42	38	34	32	29	27
	50	0.267	53	47	42	38	35	33	30
	60	0.293	58	52	46	42	39	36	33
Maroon (52)	10	0.149	29	26	24	21	20	18	17
	20	0.210	42	37	33	30	28	26	24
	30	0.257	51	45	41	37	34	31	29
	40	0.296	59	52	47	43	39	36	34
	50	0.332	66	58	53	48	44	40	38
	60	0.363	72	64	57	52	48	44	41
Red (63)	10	0.218	43	38	34	31	29	27	25
	20	0.307	61	54	49	44	41	37	35
	30	0.376	74	66	60	54	50	46	43
	40	0.435	86	76	69	63	57	53	49
	50	0.486	96	86	77	70	64	59	55
	60	0.532	105	94	84	77	70	65	60
Blue (80)	10	0.351	70	62	56	51	46	43	40
	20	0.496	98	87	79	71	66	60	56
	30	0.608	120	107	96	88	80	74	69
	40	0.702	139	124	111	101	93	86	79
	50	0.785	155	138	124	113	104	96	89
	60	0.859	170	151	136	124	113	105	97
Yellow (95)	10	0.506	100	89	80	73	67	62	57
	20	0.715	142	126	113	103	94	87	81
	30	0.876	173	154	139	126	116	107	99
	40	1.009	200	178	160	145	133	123	114
	50	1.133	224	199	179	163	150	138	128
	60	1.239	245	218	196	178	164	151	140

All application rates (gallons/acres) are estimates based on 0-28-0 (10.65 lbs/gallon) at 70 degrees F

## 10" Spacing

Orifice Color (Approx Size)	Gal/Min		MPH						
	PSI	28-0-0	4.0	4.5	5.0	5.5	6.0	6.5	7.0
Pink (24)	10	0.033	4.9	4.3	3.9	3.5	3.2	3.0	2.8
	20	0.046	6.8	6.1	5.5	5.0	4.6	4.2	3.9
	30	0.057	8.4	7.5	6.7	6.1	5.6	5.2	4.8
	40	0.065	9.7	8.6	7.8	7.1	6.5	6.0	5.6
	50	0.073	10.9	9.7	8.7	7.9	7.3	6.7	6.2
	60	0.081	12.0	10.6	9.6	8.7	8.0	7.4	6.8
Gray (30)	10	0.050	7.5	6.7	6.0	5.4	5.0	4.6	4.3
	20	0.072	10.6	9.5	8.5	7.7	7.1	6.6	6.1
	30	0.088	13.0	11.6	10.4	9.5	8.7	8.0	7.4
	40	0.101	15.0	13.3	12.0	10.9	10.0	9.2	8.6
	50	0.112	16.7	14.8	13.4	12.1	11.1	10.3	9.5
	60	0.124	18.4	16.4	14.7	13.4	12.3	11.3	10.5
Black (35)	10	0.070	10.4	9.2	8.3	7.6	6.9	6.4	5.9
	20	0.098	14.6	13.0	11.7	10.6	9.7	9.0	8.3
	30	0.120	17.9	15.9	14.3	13.0	11.9	11.0	10.2
	40	0.139	20.6	18.3	16.5	15.0	13.8	12.7	11.8
	50	0.156	23.1	20.6	18.5	16.8	15.4	14.2	13.2
	60	0.170	25.2	22.4	20.2	18.4	16.8	15.5	14.4
Brown (41)	10	0.094	14	12	11	10	9	9	8
	20	0.132	20	17	16	14	13	12	11
	30	0.162	24	21	19	17	16	15	14
	40	0.187	28	25	22	20	18	17	16
	50	0.209	31	28	25	23	21	19	18
	60	0.228	34	30	27	25	23	21	19
Orange (46)	10	0.119	18	16	14	13	12	11	10
	20	0.169	25	22	20	18	17	15	14
	30	0.207	31	27	25	22	21	19	18
	40	0.239	35	32	28	26	24	22	20
	50	0.267	40	35	32	29	26	24	23
	60	0.293	43	39	35	32	29	27	25
Maroon (52)	10	0.149	22	20	18	16	15	14	13
	20	0.210	31	28	25	23	21	19	18
	30	0.257	38	34	30	28	25	23	22
	40	0.296	44	39	35	32	29	27	25
	50	0.332	49	44	39	36	33	30	28
	60	0.363	54	48	43	39	36	33	31
Red (63)	10	0.218	32	29	26	24	22	20	18
	20	0.307	46	41	36	33	30	28	26
	30	0.376	56	50	45	41	37	34	32
	40	0.435	65	57	52	47	43	40	37
	50	0.486	72	64	58	52	48	44	41
	60	0.532	79	70	63	57	53	49	45
Blue (80)	10	0.351	52	46	42	38	35	32	30
	20	0.496	74	66	59	54	49	45	42
	30	0.608	90	80	72	66	60	56	52
	40	0.702	104	93	83	76	69	64	60
	50	0.785	117	104	93	85	78	72	67
	60	0.859	128	113	102	93	85	79	73
Yellow (95)	10	0.506	75	67	60	55	50	46	43
	20	0.715	106	94	85	77	71	65	61
	30	0.876	130	116	104	95	87	80	74
	40	1.009	150	133	120	109	100	92	86
	50	1.133	168	150	135	122	112	104	96
	60	1.239	184	164	147	134	123	113	105

All application rates (gallons/acres) are estimates based on 0-28-0 (10.65 lbs/gallon) at 70 degrees F

# DISK ORIFICE CHART

Common Grain Drill row spacings



**CALCULATOR**

Our easy to use, orifice and metering tube calculator is available FREE now on the App Store.

## 15" Spacing

Orifice Color (Approx Size)	PSI	Gal/Min 28-0-0	MPH						
			4.0	4.5	5.0	5.5	6.0	6.5	7.0
Pink (24)	10	0.033	3.2	2.9	2.6	2.4	2.2	2.0	1.9
	20	0.046	4.6	4.0	3.6	3.3	3.0	2.8	2.6
	30	0.057	5.6	5.0	4.5	4.1	3.7	3.5	3.2
	40	0.065	6.5	5.8	5.2	4.7	4.3	4.0	3.7
	50	0.073	7.3	6.5	5.8	5.3	4.8	4.5	4.2
Gray (30)	10	0.050	5.0	4.4	4.0	3.6	3.3	3.1	2.9
	20	0.072	7.1	6.3	5.7	5.2	4.7	4.4	4.1
	30	0.088	8.7	7.7	6.9	6.3	5.8	5.3	5.0
	40	0.101	10.0	8.9	8.0	7.3	6.7	6.1	5.7
	50	0.112	11.1	9.9	8.9	8.1	7.4	6.8	6.4
Black (35)	10	0.070	6.9	6.2	5.5	5.0	4.6	4.3	4.0
	20	0.098	9.7	8.6	7.8	7.1	6.5	6.0	5.6
	30	0.120	11.9	10.6	9.5	8.7	7.9	7.3	6.8
	40	0.139	13.8	12.2	11.0	10.0	9.2	8.5	7.9
	50	0.156	15.4	13.7	12.3	11.2	10.3	9.5	8.8
Brown (41)	10	0.094	9.3	8.3	7.4	6.8	6.2	5.7	5.3
	20	0.132	13.1	11.6	10.4	9.5	8.7	8.0	7.5
	30	0.162	16.0	14.3	12.8	11.7	10.7	9.9	9.2
	40	0.187	18.5	16.4	14.8	13.4	12.3	11.4	10.6
	50	0.209	20.7	18.4	16.5	15.0	13.8	12.7	11.8
Orange (46)	10	0.119	11.8	10.5	9.5	8.6	7.9	7.3	6.8
	20	0.169	16.7	14.9	13.4	12.2	11.2	10.3	9.6
	30	0.207	20.5	18.2	16.4	14.9	13.7	12.6	11.7
	40	0.239	23.7	21.0	18.9	17.2	15.8	14.6	13.5
	50	0.267	26.5	23.5	21.2	19.2	17.6	16.3	15.1
Maroon (52)	10	0.149	15	13	12	11	10	9	8
	20	0.210	21	18	17	15	14	13	12
	30	0.257	25	23	20	18	17	16	15
	40	0.296	29	26	23	21	20	18	17
	50	0.332	33	29	26	24	22	20	19
Red (63)	10	0.218	22	19	17	16	14	13	12
	20	0.307	30	27	24	22	20	19	17
	30	0.376	37	33	30	27	25	23	21
	40	0.435	43	38	34	31	29	26	25
	50	0.486	48	43	38	35	32	30	27
Blue (80)	10	0.351	35	31	28	25	23	21	20
	20	0.496	49	44	39	36	33	30	28
	30	0.608	60	54	48	44	40	37	34
	40	0.702	69	62	56	51	46	43	40
	50	0.785	78	69	62	57	52	48	44
Yellow (95)	10	0.506	50	45	40	36	33	31	29
	20	0.715	71	63	57	51	47	44	40
	30	0.876	87	77	69	63	58	53	50
	40	1.009	100	89	80	73	67	61	57
	50	1.133	112	100	90	82	75	69	64
Green (110)	10	0.686	68	60	54	49	45	42	39
	20	0.973	96	86	77	70	64	59	55
	30	1.186	117	104	94	85	78	72	67
	40	1.372	136	121	109	99	91	84	78
	50	1.531	152	135	121	110	101	93	87
White (125)	10	0.867	86	76	69	62	57	53	49
	20	1.230	122	108	97	89	81	75	70
	30	1.504	149	132	119	108	99	92	85
	40	1.735	172	153	137	125	114	106	98
	50	1.938	192	171	153	140	128	118	110
Lime Green (156)	10	1.372	136	121	109	99	91	84	78
	20	1.947	193	171	154	140	128	119	110
	30	2.381	236	209	189	171	157	145	135
	40	2.752	272	242	218	198	182	168	156
	50	3.071	304	270	243	221	203	187	174

All application rates (gallons/acre) are estimates based on 0-28-0 (10.65 lbs/gallon) at 70 degrees F.

## 20" Spacing

Orifice Color (Approx Size)	PSI	Gal/Min 28-0-0	MPH						
			4.0	4.5	5.0	5.5	6.0	6.5	7.0
Pink (24)	10	0.033	2.4	2.2	1.9	1.8	1.6	1.5	1.4
	20	0.046	3.4	3.0	2.7	2.5	2.3	2.1	2.0
	30	0.057	4.2	3.7	3.4	3.1	2.8	2.6	2.4
	40	0.065	4.9	4.3	3.9	3.5	3.2	3.0	2.8
	50	0.073	5.5	4.8	4.4	4.0	3.6	3.4	3.1
Gray (30)	10	0.050	3.7	3.3	3.0	2.7	2.5	2.3	2.1
	20	0.072	5.3	4.7	4.3	3.9	3.5	3.3	3.0
	30	0.088	6.5	5.8	5.2	4.7	4.3	4.0	3.7
	40	0.101	7.5	6.7	6.0	5.4	5.0	4.6	4.3
	50	0.112	8.3	7.4	6.7	6.1	5.6	5.1	4.8
Black (35)	10	0.070	5.2	4.6	4.2	3.8	3.5	3.2	3.0
	20	0.098	7.3	6.5	5.8	5.3	4.9	4.5	4.2
	30	0.120	8.9	7.9	7.1	6.5	6.0	5.5	5.1
	40	0.139	10.3	9.2	8.3	7.5	6.9	6.3	5.9
	50	0.156	11.6	10.3	9.3	8.4	7.7	7.1	6.6
Brown (41)	10	0.094	7.0	6.2	5.6	5.1	4.6	4.3	4.0
	20	0.132	9.8	8.7	7.8	7.1	6.5	6.0	5.6
	30	0.162	12.0	10.7	9.6	8.7	8.0	7.4	6.9
	40	0.187	13.9	12.3	11.1	10.1	9.2	8.5	7.9
	50	0.209	15.5	13.8	12.4	11.3	10.3	9.5	8.9
Orange (46)	10	0.119	8.9	7.9	7.1	6.5	5.9	5.5	5.1
	20	0.169	12.6	11.2	10.0	9.1	8.4	7.7	7.2
	30	0.207	15.4	13.7	12.3	11.2	10.3	9.5	8.8
	40	0.239	17.7	15.8	14.2	12.9	11.8	10.9	10.1
	50	0.267	19.8	17.6	15.9	14.4	13.2	12.2	11.3
Maroon (52)	10	0.149	11	10	9	8	7	7	6
	20	0.210	16	14	12	11	10	10	9
	30	0.257	19	17	15	14	13	12	11
	40	0.296	22	20	18	16	15	14	13
	50	0.332	25	22	20	18	16	15	14
Red (63)	10	0.218	16	14	13	12	11	10	9
	20	0.307	23	20	18	17	15	14	13
	30	0.376	28	25	22	20	19	17	16
	40	0.435	32	29	26	23	22	20	18
	50	0.486	36	32	29	26	24	22	21
Blue (80)	10	0.351	26	23	21	19	17	16	15
	20	0.496	37	33	29	27	25	23	21
	30	0.608	45	40	36	33	30	28	26
	40	0.702	52	46	42	38	35	32	30
	50	0.785	58	52	47	42	39	36	33
Yellow (95)	10	0.506	38	33	30	27	25	23	21
	20	0.715	53	47	42	39	35	33	30
	30	0.876	65	58	52	47	43	40	37
	40	1.009	75	67	60	54	50	46	43
	50	1.133	84	75	67	61	56	52	48
Green (110)	10	0.686	51	45	41	37	34	31	29
	20	0.973	72	64	58	53	48	44	41
	30	1.186	88	78	70	64	59	54	50
	40	1.372	102	91	81	74	68	63	58
	50	1.531	114	101	91	83	76	70	65
White (125)	10	0.867	64	57	52	47	43	40	37
	20	1.230	91	81	73	66	61	56	52
	30	1.504	112	99	89	81	74	69	64
	40	1.735	129	114	103	94	86	79	74
	50	1.938	144	128	115	105	96	89	82
Lime Green (156)	10	1.372	102	91	81	74	68	63	58
	20	1.947	145	128	116	105	96	89	83
	30	2.381	177	157	141	129	118	109	101
	40	2.752	204	182	163	149	136	126	117
	50	3.071	228	203	182	166	152	140	130

All application rates (gallons/acre) are estimates based on 0-28-0 (10.65 lbs/gallon) at 70 degrees F.



# DISK ORIFICE CHART

## 22" Spacing

## 22" Spacing

## 22" Spacing

Orifice Color (Approx Size)	PSI	Gal/Min 28-0-0	MPH						
			4.0	4.5	5.0	5.5	6.0	6.5	7.0
Pink (24)	10	0.033	2.2	2.0	1.8	1.6	1.5	1.4	1.3
	20	0.046	3.1	2.8	2.5	2.3	2.1	1.9	1.8
	30	0.057	3.8	3.4	3.1	2.8	2.5	2.4	2.2
	40	0.065	4.4	3.9	3.5	3.2	2.9	2.7	2.5
	50	0.073	5.0	4.4	4.0	3.6	3.3	3.1	2.8
	60	0.081	5.4	4.8	4.3	4.0	3.6	3.3	3.1
Gray (30)	10	0.050	3.4	3.0	2.7	2.5	2.3	2.1	1.9
	20	0.072	4.8	4.3	3.9	3.5	3.2	3.0	2.8
	30	0.088	5.9	5.3	4.7	4.3	3.9	3.6	3.4
	40	0.101	6.8	6.1	5.4	5.0	4.5	4.2	3.9
	50	0.112	7.6	6.7	6.1	5.5	5.1	4.7	4.3
	60	0.124	8.4	7.4	6.7	6.1	5.6	5.1	4.8
Black (35)	10	0.070	4.7	4.2	3.8	3.4	3.1	2.9	2.7
	20	0.098	6.6	5.9	5.3	4.8	4.4	4.1	3.8
	30	0.120	8.1	7.2	6.5	5.9	5.4	5.0	4.6
	40	0.139	9.4	8.3	7.5	6.8	6.3	5.8	5.4
	50	0.156	10.5	9.3	8.4	7.6	7.0	6.5	6.0
	60	0.170	11.5	10.2	9.2	8.3	7.6	7.1	6.6
Brown (41)	10	0.094	6.3	5.6	5.1	4.6	4.2	3.9	3.6
	20	0.132	8.9	7.9	7.1	6.5	5.9	5.5	5.1
	30	0.162	10.9	9.7	8.7	8.0	7.3	6.7	6.2
	40	0.187	12.6	11.2	10.1	9.2	8.4	7.8	7.2
	50	0.209	14.1	12.5	11.3	10.3	9.4	8.7	8.1
	60	0.228	15.4	13.7	12.3	11.2	10.3	9.5	8.8
Orange (46)	10	0.119	8.1	7.2	6.5	5.9	5.4	5.0	4.6
	20	0.169	11.4	10.1	9.1	8.3	7.6	7.0	6.5
	30	0.207	14.0	12.4	11.2	10.2	9.3	8.6	8.0
	40	0.239	16.1	14.3	12.9	11.7	10.8	9.9	9.2
	50	0.267	18.0	16.0	14.4	13.1	12.0	11.1	10.3
	60	0.293	19.8	17.6	15.8	14.4	13.2	12.2	11.3
Maroon (52)	10	0.149	10	9	8	7	7	6	6
	20	0.210	14	13	11	10	9	9	8
	30	0.257	17	15	14	13	12	11	10
	40	0.296	20	18	16	15	13	12	11
	50	0.332	22	20	18	16	15	14	13
	60	0.363	24	22	20	18	16	15	14
Red (63)	10	0.218	15	13	12	11	10	9	8
	20	0.307	21	18	17	15	14	13	12
	30	0.376	25	23	20	18	17	16	15
	40	0.435	29	26	23	21	20	18	17
	50	0.486	33	29	26	24	22	20	19
	60	0.532	36	32	29	26	24	22	21
Blue (80)	10	0.351	24	21	19	17	16	15	14
	20	0.496	34	30	27	24	22	21	19
	30	0.608	41	36	33	30	27	25	23
	40	0.702	47	42	38	34	32	29	27
	50	0.785	53	47	42	39	35	33	30
	60	0.859	58	52	46	42	39	36	33
Yellow (95)	10	0.506	34	30	27	25	23	21	20
	20	0.715	48	43	39	35	32	30	28
	30	0.876	59	53	47	43	39	36	34
	40	1.009	68	61	54	50	45	42	39
	50	1.133	76	68	61	56	51	47	44
	60	1.239	84	74	67	61	56	51	48
Green (110)	10	0.686	46	41	37	34	31	28	26
	20	0.973	66	58	53	48	44	40	38
	30	1.186	80	71	64	58	53	49	46
	40	1.372	93	82	74	67	62	57	53
	50	1.531	103	92	83	75	69	64	59
	60	1.681	113	101	91	83	76	70	65
White (125)	10	0.867	59	52	47	43	39	36	33
	20	1.230	83	74	66	60	55	51	47
	30	1.504	102	90	81	74	68	62	58
	40	1.735	117	104	94	85	78	72	67
	50	1.938	131	116	105	95	87	81	75
	60	2.124	143	127	115	104	96	88	82
Lime Green (156)	10	1.372	93	82	74	67	62	57	53
	20	1.947	131	117	105	96	88	81	75
	30	2.381	161	143	129	117	107	99	92
	40	2.752	186	165	149	135	124	114	106
	50	3.071	207	184	166	151	138	128	118
	60	3.363	227	202	182	165	151	140	130

All application rates (gallons/acres) are estimates based on 0-28-0 (10.65 lbs/gallon) at 70 degrees F.

## 36" Spacing

## 36" Spacing

## 36" Spacing

Orifice Color (Approx Size)									
	PSI	Gal/Min 28-0-0	4.0	4.5	5.0	5.5	6.0	6.5	7.0
Pink (24)	10	0.033	1.4	1.2	1.1	1.0	0.9	0.8	0.8
	20	0.046	1.9	1.7	1.5	1.4	1.3	1.2	1.1
	30	0.057	2.3	2.1	1.9	1.7	1.6	1.4	1.3
	40	0.065	2.7	2.4	2.2	2.0	1.8	1.7	1.5
	50	0.073	3.0	2.7	2.4	2.2	2.0	1.9	1.7
	60	0.081	3.3	3.0	2.7	2.4	2.2	2.0	1.9
Gray (30)	10	0.050	2.1	1.8	1.7	1.5	1.4	1.3	1.2
	20	0.072	3.0	2.6	2.4	2.2	2.0	1.8	1.7
	30	0.088	3.6	3.2	2.9	2.6	2.4	2.2	2.1
	40	0.101	4.2	3.7	3.3	3.0	2.8	2.6	2.4
	50	0.112	4.6	4.1	3.7	3.4	3.1	2.9	2.6
	60	0.124	5.1	4.5	4.1	3.7	3.4	3.1	2.9
Black (35)	10	0.070	2.9	2.6	2.3	2.1	1.9	1.8	1.6
	20	0.098	4.1	3.6	3.2	2.9	2.7	2.5	2.3
	30	0.120	5.0	4.4	4.0	3.6	3.3	3.1	2.8
	40	0.139	5.7	5.1	4.6	4.2	3.8	3.5	3.3
	50	0.156	6.4	5.7	5.1	4.7	4.3	4.0	3.7
	60	0.170	7.0	6.2	5.6	5.1	4.7	4.3	4.0
Brown (41)	10	0.094	3.9	3.4	3.1	2.8	2.6	2.4	2.2
	20	0.132	5.4	4.8	4.4	4.0	3.6	3.3	3.1
	30	0.162	6.7	5.9	5.3	4.9	4.5	4.1	3.8
	40	0.187	7.7	6.8	6.2	5.6	5.1	4.7	4.4
	50	0.209	8.6	7.7	6.9	6.3	5.7	5.3	4.9
	60	0.228	9.4	8.4	7.5	6.8	6.3	5.8	5.4
Orange (46)	10	0.119	4.9	4.4	3.9	3.6	3.3	3.0	2.8
	20	0.169	7.0	6.2	5.6	5.1	4.6	4.3	4.0
	30	0.207	8.5	7.6	6.8	6.2	5.7	5.3	4.9
	40	0.239	9.9	8.8	7.9	7.2	6.6	6.1	5.6
	50	0.267	11.0	9.8	8.8	8.0	7.3	6.8	6.3
	60	0.293	12.1	10.7	9.7	8.8	8.1	7.4	6.9
Maroon (52)	10	0.149	6	5	5	4	4	4	4
	20	0.210	9	8	7	6	6	5	5
	30	0.257	11	9	8	8	7	7	6
	40	0.296	12	11	10	9	8	8	7
	50	0.332	14	12	11	10	9	8	8
	60	0.363	15	13	12	11	10	9	9
Red (63)	10	0.218	9	8	7	7	6	6	5
	20	0.307	13	11	10	9	8	8	7
	30	0.376	16	14	12	11	10	10	9
	40	0.435	18	16	14	13	12	11	10
	50	0.486	20	18	16	15	13	12	11
	60	0.532	22	20	18	16	15	14	13
Blue (80)	10	0.351	14	13	12	11	10	9	8
	20	0.496	20	18	16	15	14	13	12
	30	0.608	25	22	20	18	17	15	14
	40	0.702	29	26	23	21	19	18	17
	50	0.785	32	29	26	24	22	20	19
	60	0.859	35	32	28	26	24	22	20
Yellow (95)	10	0.506	21	19	17	15	14	13	12
	20	0.715	29	26	24	21	20	18	17
	30	0.876	36	32	29	26	24	22	21
	40	1.009	42	37	33	30	28	26	24
	50	1.133	47	42	37	34	31	29	27
	60	1.239	51	45	41	37	34	31	29
Green (110)	10	0.686	28	25	23	21	19	17	16
	20	0.973	40	36	32	29	27	25	23
	30	1.186	49	43	39	36	33	30	28
	40	1.372	57	50	45	41	38	35	32
	50	1.531	63	56	51	46	42	39	36
	60	1.681	69	62	55	50	46	43	40
White (125)	10	0.867	36	32	29	26	24	22	20
	20	1.230	51	45	41	37	34	31	29
	30	1.504	62	55	50	45	41	38	35
	40	1.735	72	64	57	52	48	44	41
	50	1.938	80	71	64	58	53	49	46
	60	2.124	88	78	70	64	58	54	50
Lime Green (156)	10	1.372	57	50	45	41	38	35	32
	20	1.947	80	71	64	58	54	49	46
	30	2.381	98	87	79	71	65	60	56
	40	2.752	114	101	91	83	76	70	65
	50	3.071	127	113	101	92	84	78	72
	60	3.363	139	123	111	101	92	85	79



**PH# 877.218.1981**

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