

AgXcel GX SERIES

Electric Fertilizer Application System



GX1



GX2



GX3

NOTE: This is only a guide! Please consult your local dealer for detailed instructions or troubleshooting!

AGXCEL DUAL PUMP GPA SPECIFICATIONS

CHART REPRESENTS MAXIMUM GPA ON 30" CENTERS @ 6 MPH

IMPLEMENT SIZE IN ROWS	8	12	16	24
GPA (MAX)	20	13	10	5

Note: Dual 5.3 GPM electric pumps can only achieve a maximum of 6.0 GPM. However pumps should not be used at their highest capacity as this will drastically reduce the life of the pumps

GX1 - GX3 OVERVIEW

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AGXCEL FERTILIZER APPLICATION SYSTEM OVERVIEW

(Read Instructions Completely before Beginning Installation)

Thank you for purchasing an AgXcel Precision Liquid Fertilizer Application System (FAS) for your liquid placement requirements. The AgXcel FAS system can be integrated into the following OEM controllers:

- Ag Leader
- John Deere Green Star
- Trimble
- Raven
- Top Con
- Outback

This integration into these displays will require each of the OEM's Liquid Control Module which will need to be purchased from your local OEM dealer. The rate controller will provide the data required to manage the speed of the AgXcel electric pump(s) based on the flow response of the flow meter and the vehicle speed. The FAS system is also capable of managing section controls, also referred to as swath control, to minimize overlap areas with optional section control valves.

INITIAL INSTALLATION STEPS

This guide contains information and settings for AgXcel's FAS series of applicators. Changes to components or configuration settings can be made to improve operation of the system.

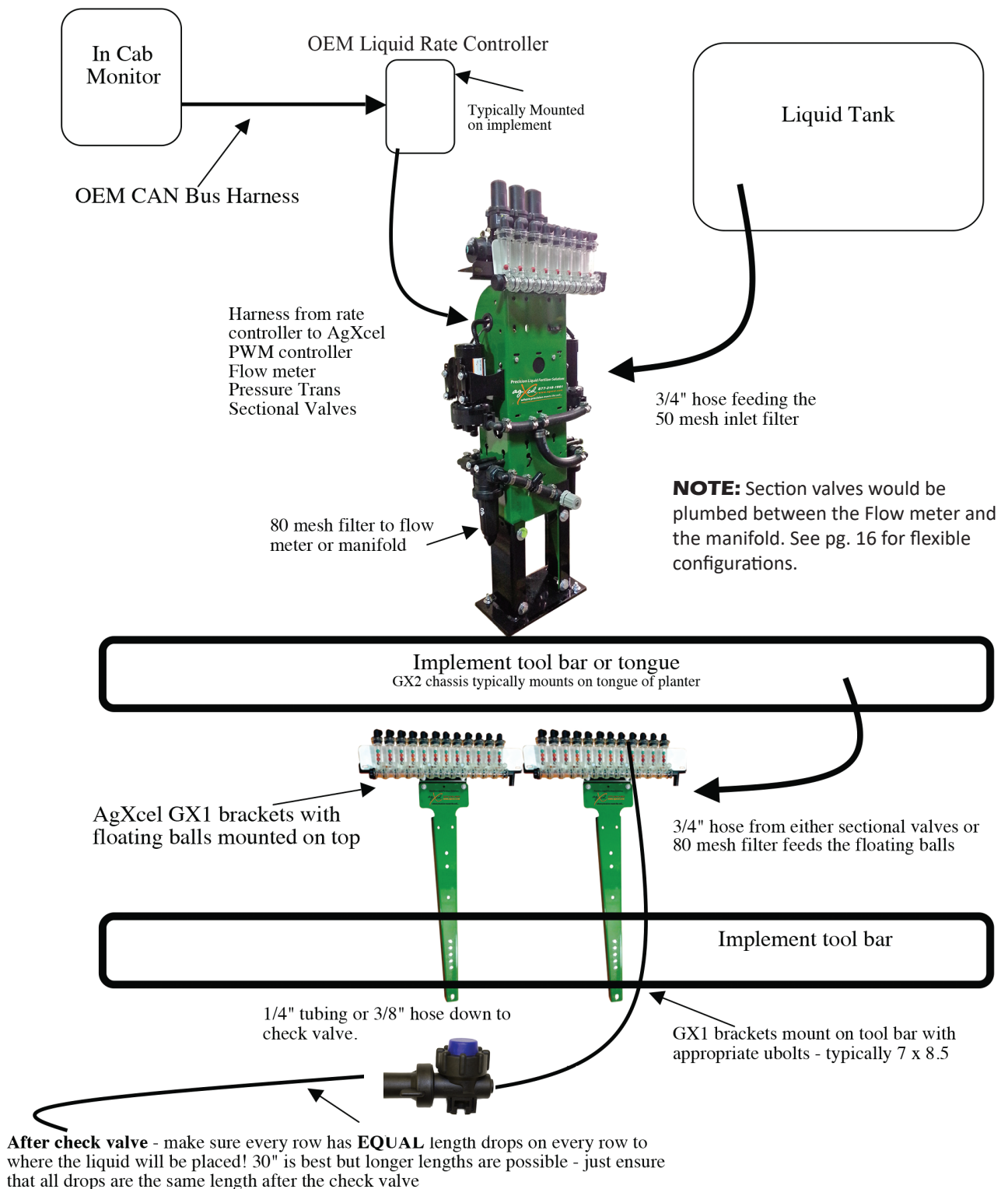
Below are some basic installation steps.

1. Install the OEM display and Liquid Control Module per OEM instructions.
2. Open the AgXcel FAS packages and familiarize yourself with the components.
3. Mount the AgXcel FAS GX system on your equipment.
4. Plumb the tank to the GX filter inlet. All FAS systems are plumbed with dual filters, 50 and 80 mesh, and the inlet filter should always be the 50 mesh. *Note the GX2C is a compacted unit and only allows 1 filter which is 50 mesh.
5. Install the manifold system that includes the GX2 chassis base brackets that have the floated ball manifolds mounted onto your tool bar. Check valves should be mounted according to the mounting instruction provided and plumbing to each row unit delivery point from the floating balls.
6. Attach the flow meter outlet to section valve or manifold inlet. Attach section valve outlets to flow indicator inlets.
7. Attach harnesses to the appropriate OEM liquid rate controller.
8. Setup OEM Controller to manage the AgXcel FAS according to the attached configuration details
9. Fill system with water, conduct initial operation and tests to ensure all settings and calibrations are correct
10. Winterize system with RV Antifreeze if freezing temperatures are expected.



AGXCEL GX2 SYSTEM OVERVIEW

(Read Instructions Completely before Beginning Installation)



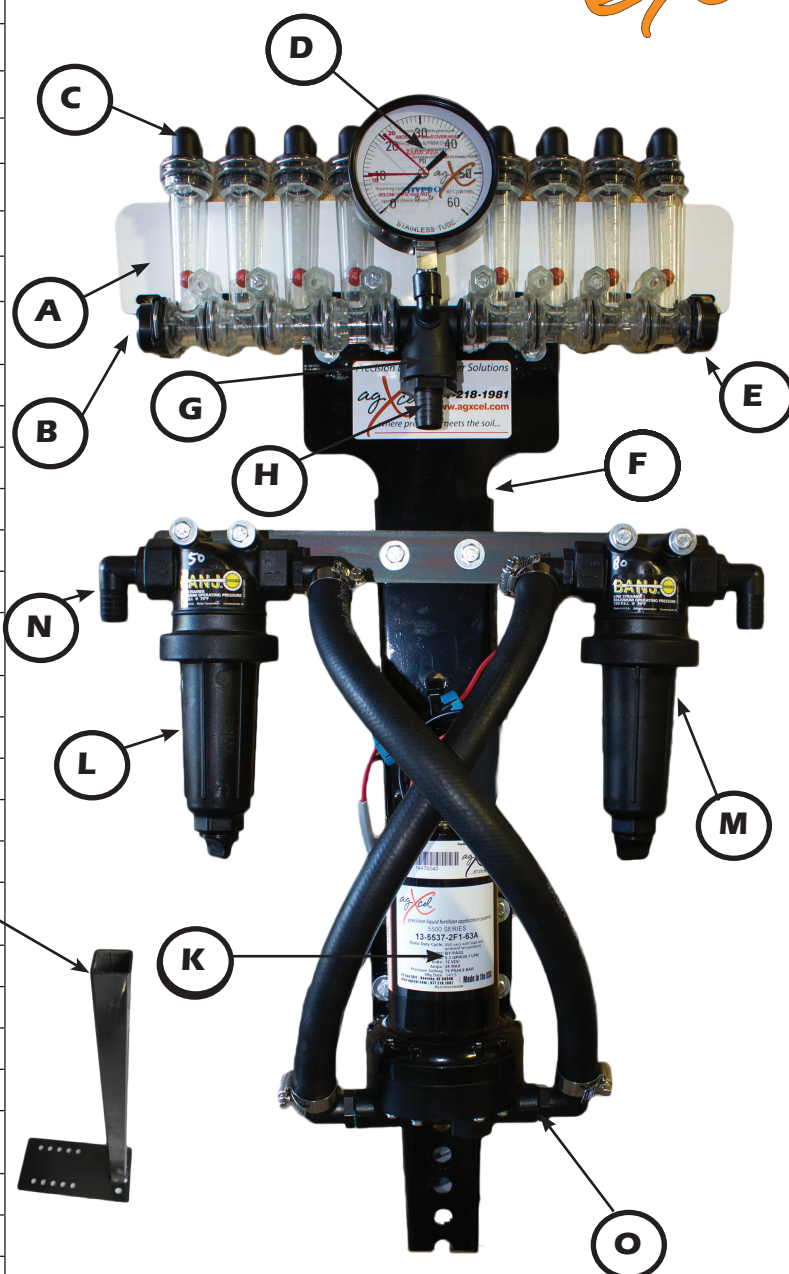
LOOK OUT FOR QR CODES THROUGHOUT OUR CATALOG TO JUMP DIRECTLY TO OUR YOUTUBE INFORMATION PAGE. HERE'S ONE...

GIVE IT A TRY.



For a more complete parts catalog available for download see support section of www.agxcel.com

GX1 SYSTEM COMPONENTS		
PN#		DESCRIPTION
A	406	up to 6R FLOW COLUMN BACK (Wht)
	414	up to 8R FLOW COLUMN BACK (Wht)
	20106	7 - 12R FLOW COLUMN BACK (Wht)
B	18082	MOUNTING BRACKET for PN#406
	18088	MOUNTING BRACKET for PN#414
	18083	MOUNTING BRACKET for PN#20106
WILGER COLUMN HARDWARE KIT - PN#38324 1 pack used for mounting up to 12R onto GX1 Chassis Bracket		
C	25709	WILGER TOP CAP 1/4 QC (outlet to rows)
	17655	WILGER TOP CAP 3/8 QC (outlet to rows)
D	33816	GAUGE (If mounted as shown)
	53769	GX REMOTE GAUGE KIT (60psi)
E	18039	COLUMN END CAP & CLIP
F	38260	GX CHASSIS (Tomahawk)
G	18037	WILGER CENTER FED TEE (as shown) (if using gauge add PN#52142- Elbow)
H	32239	3/4" HOSE SHANK (INLET)
**IF NOT USING A CENTER INLET FEED **		
INLET OPTIONS	18034	3/4" HOSE SHANK - 90 DEG
	18032	3/4" HOSE SHANK
	25682	LOCK U-CLIP
	53961	GX1 MOUNT AVAILABLE TO RAISE OR MANEUVER A CROWDED TOOLBAR
53578	GXUBolt 7 X 8 1/2 X 1/2" (Case/JD)	
20329	GXUBolt 5 X 7 X 1/2"	
17585	GXUBolt 5 X 8 1/2 X 1/2" (Kinzie)	
38446	GXUBolt 7 X 5 X 1/2"	
AGXCEL STOCKS A VAST ARRAY OF UBOLT SIZES TO MOUNT OUR SYSTEMS TO MOST ANY IMPLEMENT.		
K	20002	5.3 GPM PUMP QC
	20162	5.3 GPM PUMP THREADED
L	51169	50 MESH IN LINE FILTER
	17677	50 MESH FILTER ONLY
M	51171	80 MESH IN LINE FILTER
	51238	80 MESH FILTER ONLY
N	32331	3/4" BARB ELBOW 3/4MNPT
O	17919	FITTINGS FOR QC PUMP
	32313	FITTINGS FOR THREADED PUMP



Clean, sleek and efficient....tried and tested

- Shipped pre-assembled to YOUR specs.
- Easy Installation and seamless management
- Single Pump Configurations
- Large 4" Gauge for proper pressure management
- Filters, 50 & 80 Mesh Screen
- Custom built weather packed harnesses
- Withstands even the most demanding conditions

Perfectly paired with our Manual rate controller
(See pg. 30 - 31 for kit details)

- Simple & Effective flow control management
- Easy Flow Regulator
- On/Off Switch

- Simple, plug 'n play Installation



CALCULATOR

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



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
13-70 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.		

COMPONENTS	
PN#	DESCRIPTION
25682	Lock U-Clip
25681	Flow Indicator Ball Retainer
52142	1/4" Poly Gauge Elbow for Tee
25686	Viton O'Rings for between Columns
19992	FKM O'Rings for between Columns
428	GXChassis Swivel Kit (Complete)
54123	GXSwivel Kit w/hardware ONLY
38260	GXChassis (Tomahawk Only)
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)

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.		

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

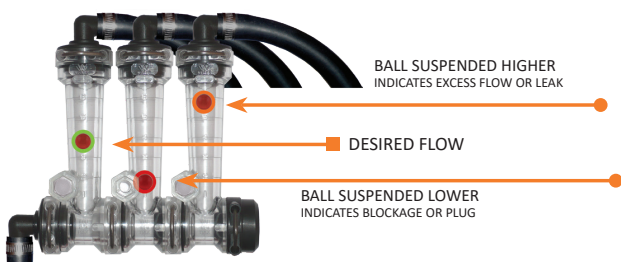


NEW

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.

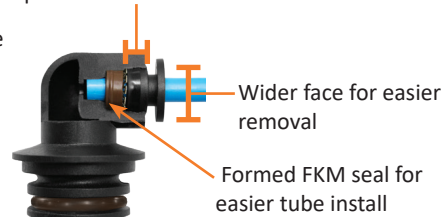
** Premium Viton o-rings, seals and assemblies will continue to be available **



NEW

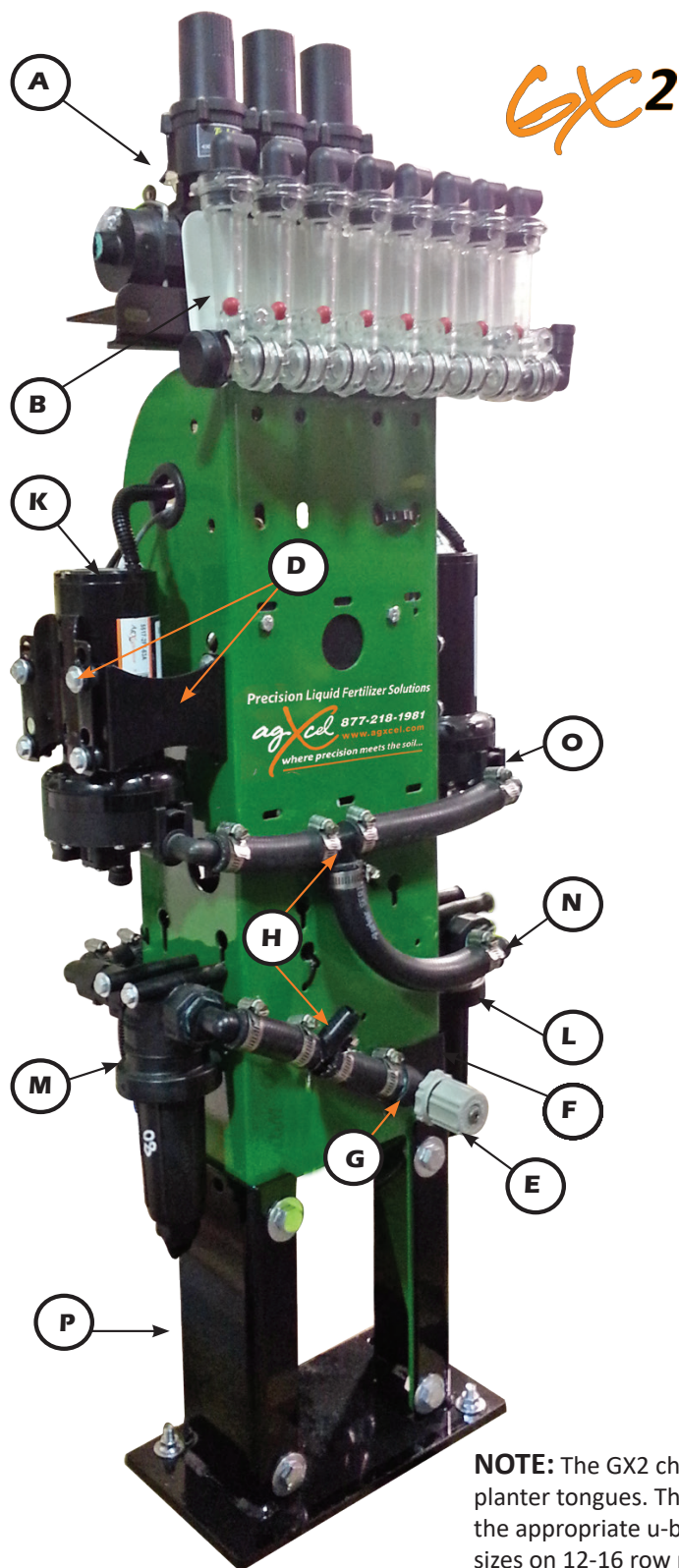
The 1/4" Push-in tube outlets have received a full redesign for heavier duty sealing and easier release.

Independent teeth & collet



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

For a more complete parts catalog available for download see support section of www.agxcel.com

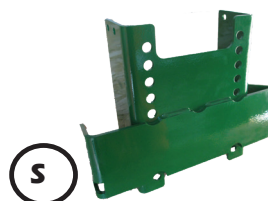
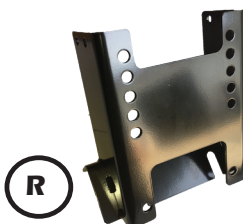
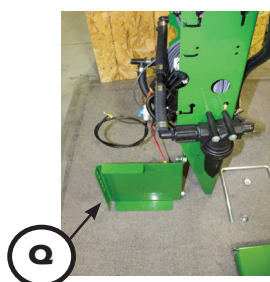


GX²

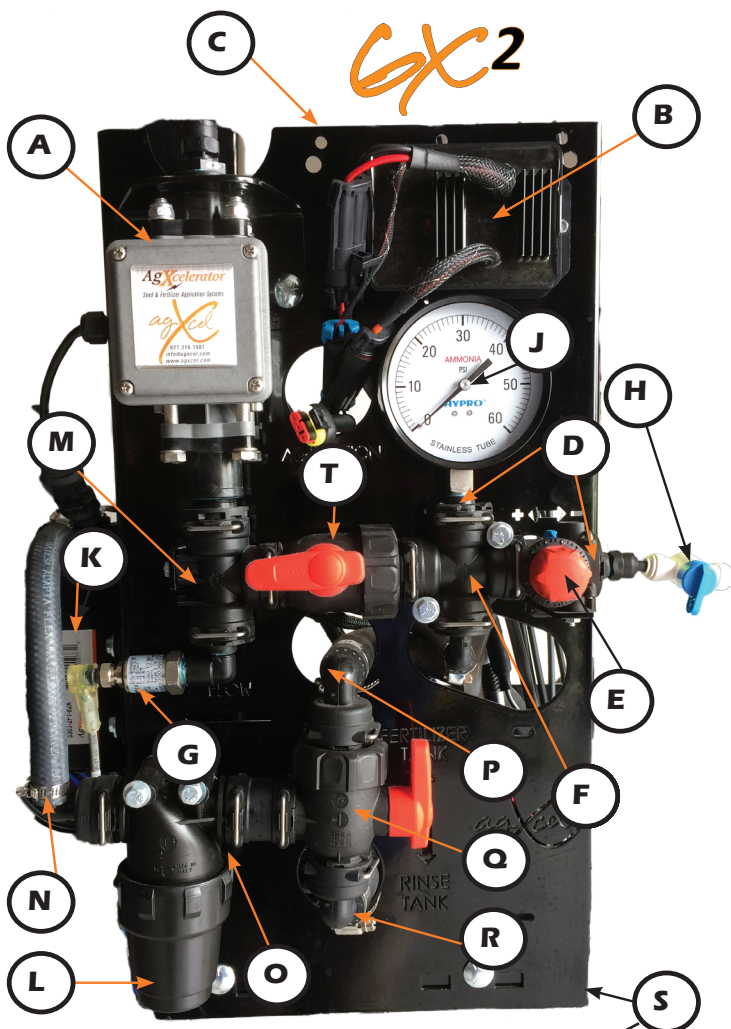
GX2 SYSTEM COMPONENTS

PN#		DESCRIPTION
A	SOLD SEPARATELY	*See page 26 for Section valve kit details and ordering part numbers.*
B		*See pg. 10 - 15 for manifold part numbers - kits based upon no# of rows. Call for details.*
Basic GX2 replacement parts If you do not see the particular part you need, please contact our sales team for assistance.		
C	19935	GX2CHASSIS - Metal Chassis only
D	20331	PUMP MOUNTING BRACKET
	20381	GX PUMP HARDWARE KIT for Bracket
E	39500	BYPASS VALVE
F	53960 53959	BYPASS VALVE Bracket (Front/Back) Both are needed to hold relief valve
G	18005	3/4" SHANK
H	15	3/4" HOSE SHANK TEE (inlet)
I	20340	IN LINE TEE FOR BLEEDER VALVE (NOT SHOWN - BACK SIDE)
K	20002	5.3 GPM PUMP QC (STANDARD)
	20162	5.3 GPM PUMP THREADED
L	51169	50 MESH IN LINE FILTER
	17677	50 MESH FILTER ONLY
M	51171	80 MESH IN LINE FILTER
	51238	80 MESH FILTER ONLY
N	32331	3/4" BARB ELBOW 3/4MNPT
O	17919	FITTINGS FOR QC PUMP
	32313	FITTINGS FOR THREADED PUMP
OPTIONAL MOUNTING BRACKET FOR THIS GX STYLE		
P	53969	GX2CHASSIBASEKIT (REQ 8-10" BAR MINIMUM)
Q	55060	GX2CHASSISEXTENDERKIT
R	53970	GX2CHASSIS FOR JD CCS (NO REFUGE TANK PRESENT)
S	55792	GX2CCSCHASSIS BASE3 1770/1790 (BETWEEN SEED BINS)

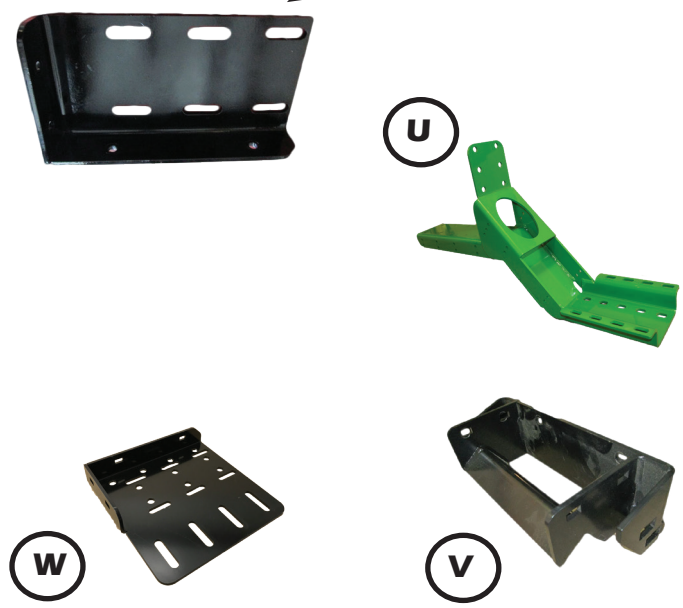
NOTE: The GX2 chassis base bracket is designed to be mounted on various OEM planter tongues. The size of the tongue varies from planter size. Please ensure that the appropriate u-bolt size is used for you corresponding implement. Most default sizes on 12-16 row planters have an 8x12 tongue so it would require a 8x14 u-bolt. 24 row planters have an 8x14 tongue so they would require a 8x16 u-bolt.



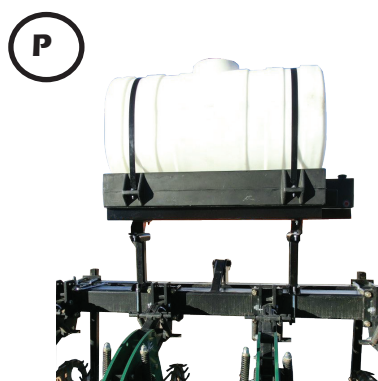
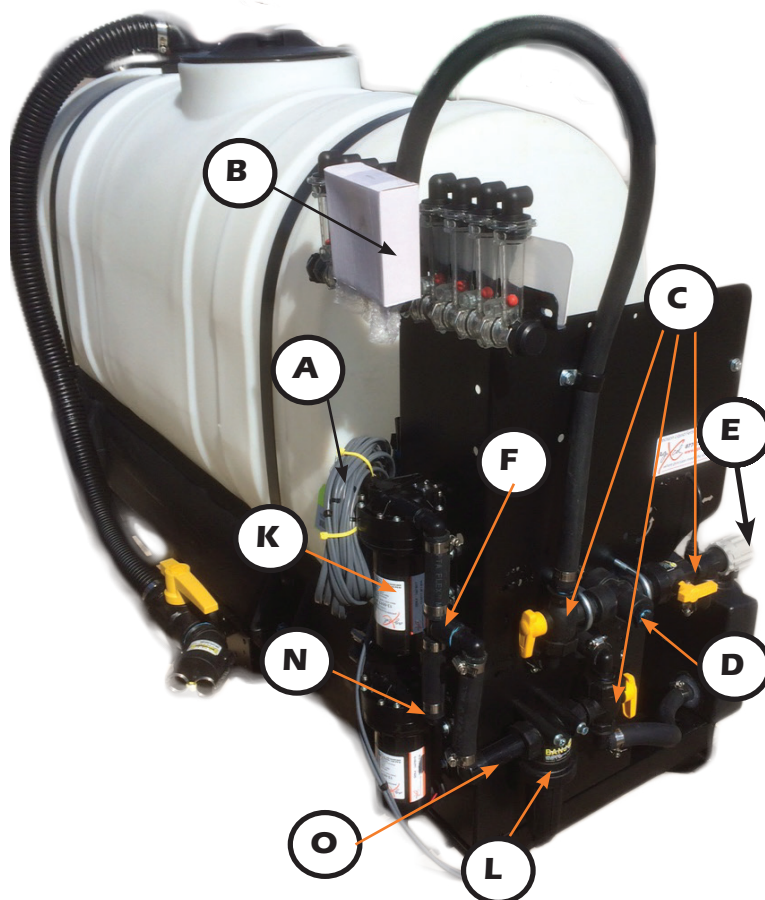
GX2C SYSTEM COMPONENTS		
PN#		DESCRIPTION
A	SOLD SEPARATELY	See pg. 24 - 25 for flow meter options. Call for details*
B		For Integration options Call for details.*
Basic GX2C replacement parts If you do not see the particular part you need, please contact our sales team for assistance.		
C	55117	GX2C CHASSIS - Metal Chassis only
D	55070	CAP ADAPTER FOR GAUGE T3M 1/4"
E	55069	MODULAR REGULATOR T3 HIGH FLOW
F	55068	4-WAY FITTING 90° T3F
G**	53491	PRESSURE TRANSDUCER KIT (*Optional Add-on)
H	19848	BLEEDER VALVE 1/4" QC
I	570	3/8" HOSE BARB (back of Regulator - not seen)
J	33816	60 PSI GAUGE
K	20002	5.3 GPM PUMP QC (STANDARD)
	20162	5.3 GPM PUMP THREADED
THE GX2C ONLY SUPPORTS ONE FILTER OPTION		
L	55066	80 MESH IN LINE FILTER (STANDARD ON GX2C))
	55549	50 MESH FILTER ONLY
	55548	80 MESH FILTER ONLY
M	54669	"T" FITTING T3F-T3F-T3F
N	17919	BARB FOR QC PUMP (Inlet & Outlet)
O	54677	FORK D.3 DIST.29
P	54662	ELBOW T3F D.20
Q	54671	3-WAY BALL VALVE T3M
R	54662	ELBOW T3F D.20
S	55129	GX2CBASEBKT
T	54701	2-WAY BALL VALVE
OPTIONAL MOUNTING BRACKETS FOR THIS GX STYLE		
U	53833	GX2BSTACKERBASEJD
V	53964	GX2BCCS/1790/DB/ADAPT BKT
W	37659	GX2C NT BASE/KINZIE
X	56030	GX2C STACKER EXTENDED BASE



** The GX2C Style has an optional port for a Pressure Transducer



GX3 SYSTEM COMPONENTS		
PN#		DESCRIPTION
A	SOLD SEPARATELY	*Call for Integration Details
B		*See pg. 10 - 15 for manifold part numbers - kits based upon no# of rows. Call for details.*
Basic GX3 replacement parts If you do not see the particular part you need, please contact our sales team for assistance.		
C	37667	3-WAY BALL VALVE 3/4" NPT
D	50273	4-WAY CROSS
E	39500	BYPASS VALVE
F	32476	3/4 FEMALE BARB TEE
G	18005	3/4" SHANK
H	15	3/4" HOSE SHANK TEE (inlet)
I	20340	IN LINE GAUGE TEE (on back side plumbing)
K	20002	5.3 GPM PUMP QC (STANDARD)
	20162	5.3 GPM PUMP THREADED
L	51169	50 MESH IN LINE FILTER
	17677	50 MESH FILTER ONLY
	51171	80 MESH IN LINE FILTER
	51238	80 MESH FILTER ONLY
M	32331	3/4" BARB ELBOW 3/4MNPT
N	17919	FITTINGS FOR QC PUMP
	32313	FITTINGS FOR THREADED PUMP
O	51999	4"NIPPLE
OPTIONAL MOUNTING BRACKET FOR THIS GX STYLE		
55579		GX3 STANDARD MOUNT 9" (Not Shown)
P	53940	GX3 STANDARD MOUNT 21"
Q	38333	GX3 OFFSET MOUNT
AGXCEL STOCKS A VAST ARRAY OF UBOLT SIZES TO MOUNT OUR SYSTEMS TO MOST ANY IMPLEMENT		



PUMP PRIMING AND BLEEDER VALVE



A bleeder valve is included on every AgXcel system. Every row has a check valve. These valves do not let air escape from the system unless it is pressurized. 12 volt electric pump are not good air compressors, so pumps can struggle to prime due to air trapped on the outlet side of the pump.

The bleeder valve is a small 1/4" valve that, when opened, lets air escape from the pump outlet at zero pressure. Open this valve until liquid comes out and then close the valve.

Bleeder Valve

GX ACCESSORY - RECIRCULATION KIT

(Read Instructions Completely before Beginning Installation)

Re-circulation Regulation Valve



APPLICATIONS

1. Re-circulation flow is required for product agitation.
2. IF a low flow rate is required, that would require pump to run less than 10-20% of maximum capacity. This kit will allow the pump to turn faster, while only applying a low rate of product. This makes the pump performance more stable under these circumstances. Make sure the flow meter minimum flow is capable of metering the flow rate you wish to apply to the ground.

HOW IT WORKS

The recirculation valve diverts some pump flow before the flow meter. The application rate is still measured by the flow meter and everything that passes through the flow meter is applied to the ground. Adjust the regulation valve to set the required recirculation. This feature is standard on the GX2C. If you wish to feed back to tank optional 3/8" barb is supplied. Otherwise this feature is plugged upon shipping in case you do not wish to use it.

USE OF THIS KIT LOWERS THE MAXIMUM RATE THAT CAN BE APPLIED

Do I need recirculation flow?

Recirculation flow allows the pump to run faster than if the total pump flow was applied to the ground. This may be helpful when operating at very low rates. The GX2C will typically operate with the recirculation valve closed. The hose on the recirculation loop can be changed to allow for more or less recirculation. Too much recirculation can result in unstable flow reading on the display.

FLOATING BALL MANIFOLDS

(Read Instructions Completely before Beginning Installation)

In order to assure proper and even distribution to each row, the product being applied must be metered to each individual row. This metering is done by using metering tubes which create back pressure so an equal amount of liquid is applied to each row.

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 any configuration necessary.

The flow to each row will pass through a flow column that has one or two balls that will float to indicate flow to that row. This gives an immediate visual confirmation of flow to each row. While the floating balls are a good visual indication of flow, they are not always an indicator of exact flow to each row. Only a catch test will verify the evenness of the row-to-row distribution.



Low Flow

FLOATING BALLS

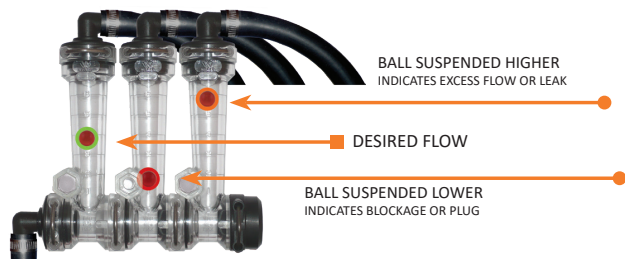
See page 5 for guidance on which weighted ball to use for your set up based on application rate.

LOW FLOW COLUMN (usually 1/4" QC)

The low flow column has a smaller internal diameter. This means a heavier ball can be used to monitor a smaller flow.

AgXcel uses the low flow columns with 1/4" push to connect outlet fittings. The flow capability of 1/4" tubing and the low flow column is a great pair for rates on 30" rows under 10 GPA.

Externally, the low flow column can only be identified by "LOW FLOW" molded into one side of the column. All the same fittings work with low flow and full flow columns.



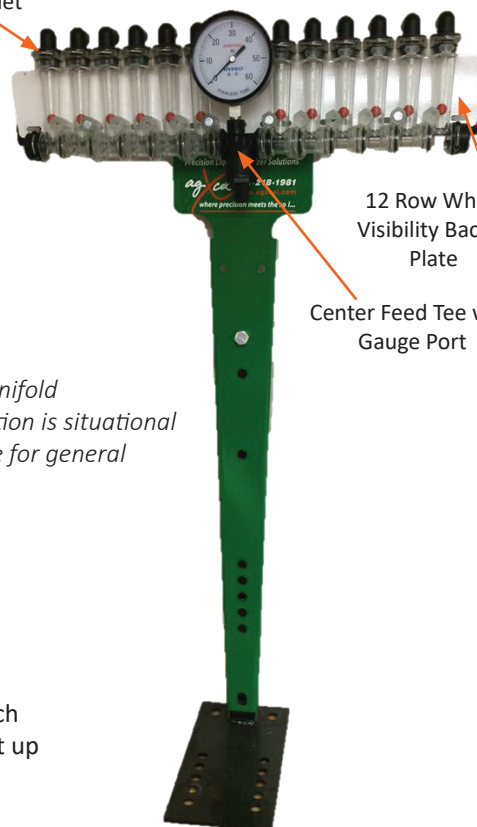
BALL SUSPENDED HIGHER
INDICATES EXCESS FLOW OR LEAK

DESIRED FLOW

BALL SUSPENDED LOWER
INDICATES BLOCKAGE OR PLUG

Low Flow Column
with 1/4" QA Outlet

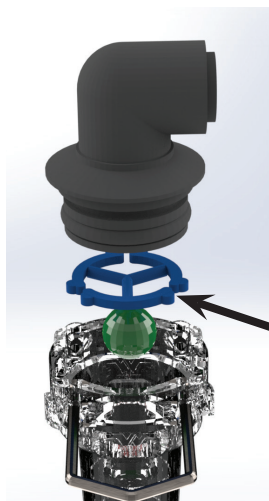
4" Gauge



12 Row White
Visibility Backer
Plate

Center Feed Tee with
Gauge Port

*NOTE: Manifold
Configuration is situational
Photos are for general
reference.*



Ball retainer - If top is removed, be
sure that the ball retainer is in place
when top is reinstalled.

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 **

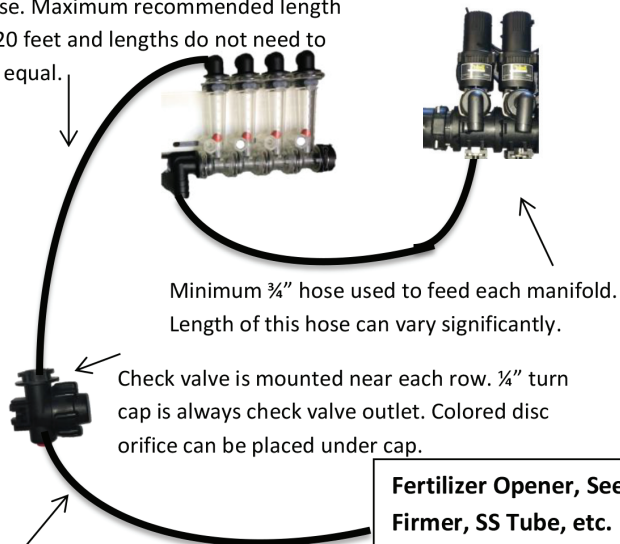


FLEXIBLE CONFIGURATIONS

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 $\frac{1}{4}$ " OD tubing or $\frac{3}{8}$ " hose. Maximum recommended length is 20 feet and lengths do not need to be equal.



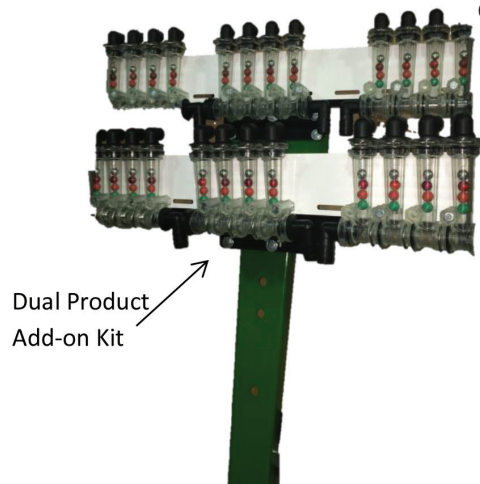
This is usually $\frac{1}{4}$ " OD tubing or $\frac{3}{8}$ " hose. Typical length is 1-4' with check valves place on each row that distance from ground.

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

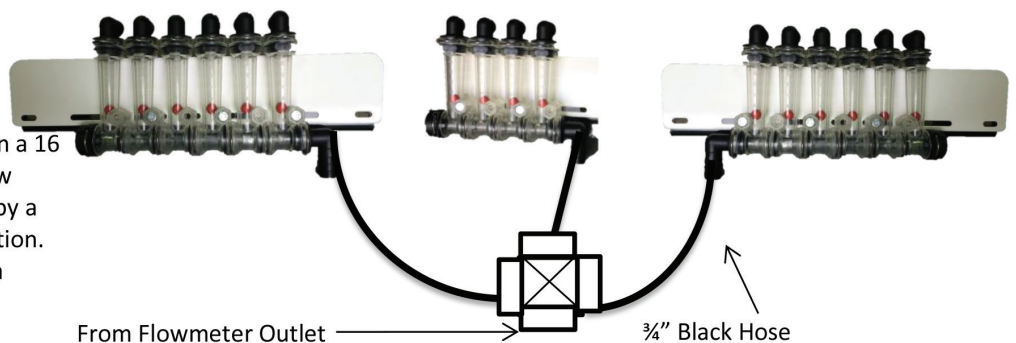
Shown here is a 12 row with four 3 row sections controlled by four section valves. Note each 6 row T-Bracket can hold two separate 3 row manifolds. A 4 section 24 row could be similar with four 6 row manifolds on two large T-Brackets.



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.



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

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" & 3/8" Push-in tube outlets have received a full redesign for heavier duty sealing and easier release.

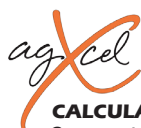
Independent teeth & collet



Wider face for easier removal

Formed FKM seal for easier tube install

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



CALCULATOR

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



OLD

Two piece Diaphragm & pressure pad o-ring

PN# 25803
Viton Only

PN# 54538
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 **



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 

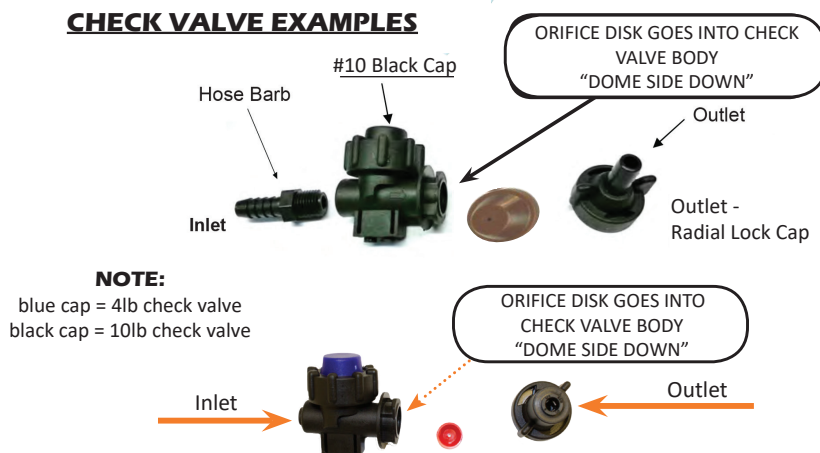


The preferred placement of the Agxcel check valve is as close to the row unit as possible, without sacrificing the security of the check valve. Approximately 30" from the bottom of the furrow (on every row, equal lengths) where liquid is being placed is ideal.

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



CAP ASSEMBLY





The GX2 Manifold kit is used for up to 10 GPA distribution. The kit includes “Low Flow” floating ball manifold columns, column back-drop 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 ubolts 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.

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**

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

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

Independent teeth & collet

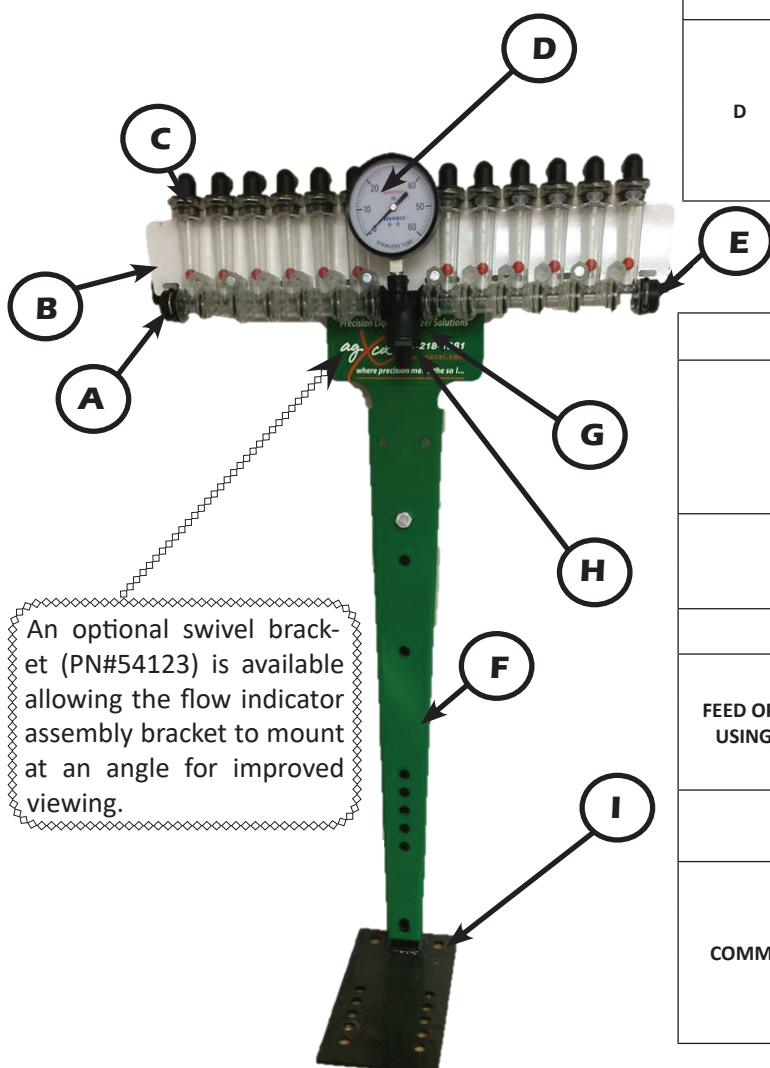


Wider face for easier removal

Formed FKM seal for easier tube install

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

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



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"



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.13

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
13-70 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.	

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)

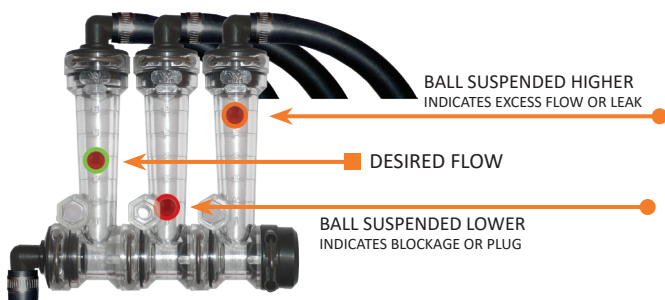
Externally, the low flow column can be identified by "Low Flow" imprinted into one side of the column. All the same fittings work with either the low flow or standard flow columns

NEW

O-ring Upgrade: FKM

All Wilger parts are transitioning to being manufactured with FKM O-rings & seals. The fluoro-elastomer (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**



For a more complete parts catalog available for download see support section of www.agxcel.com

NOTE:

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



CALCULATOR

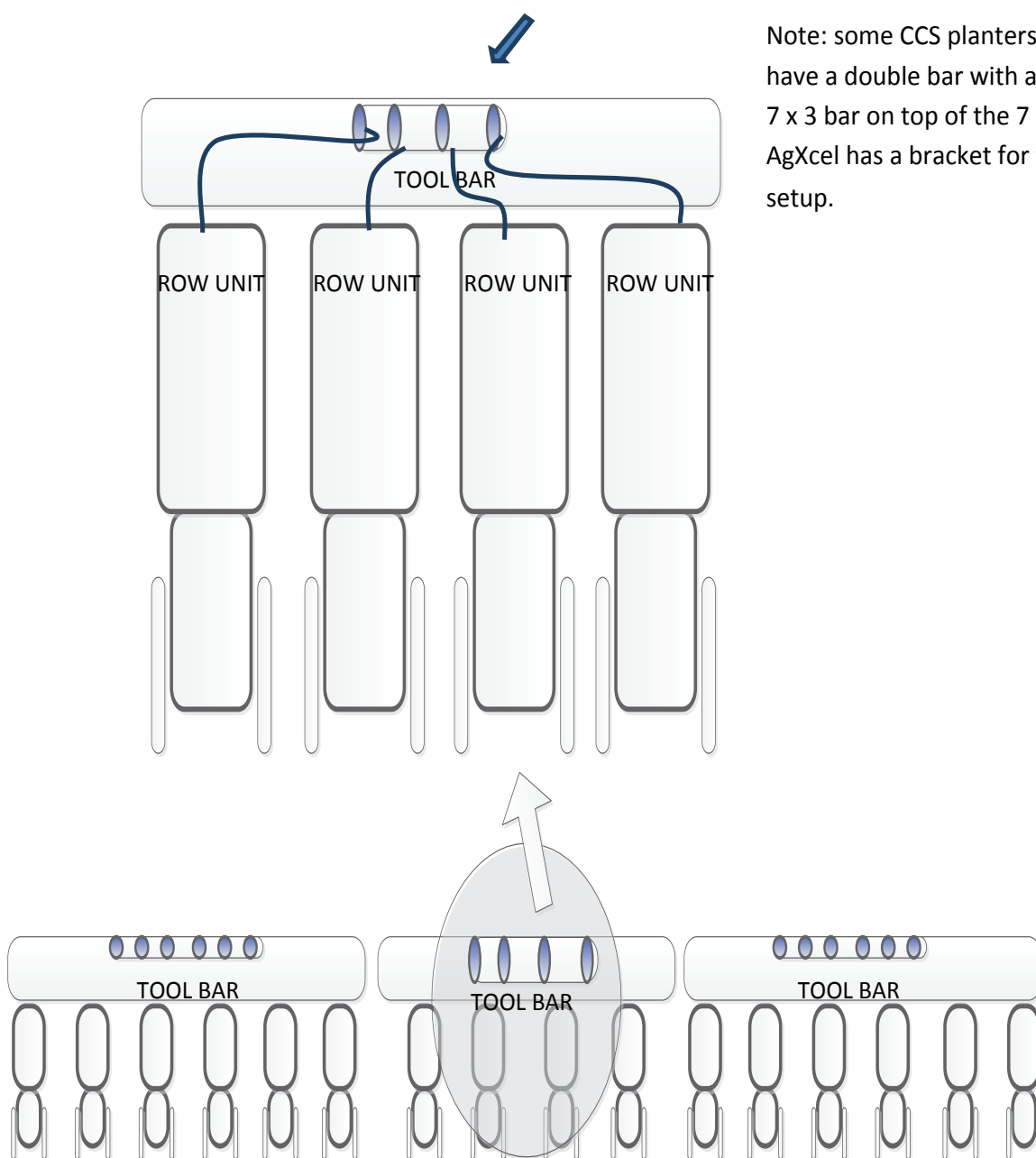
Our easy to use, orifice and metering tube calculator is available FREE now on the App Store.



GX INSTALL TIPS

(Read Instructions Completely before Beginning Installation)

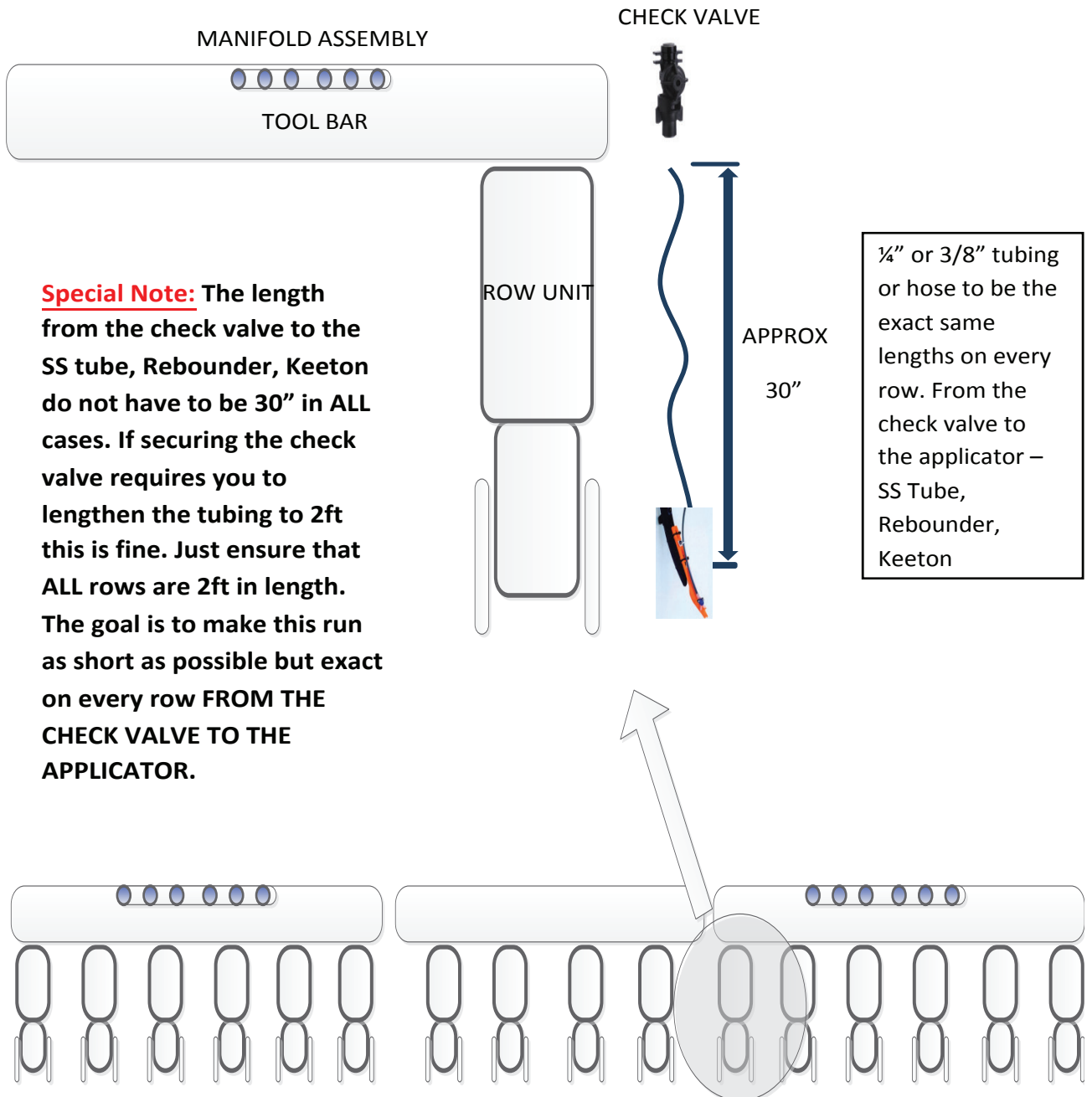
Mount floating balls IF POSSIBLE in the center of the tool bar. This will allow for shorter runs of tubing to each row. These runs DO NOT have to be of equal length but should be as short as possible to each row.



GX INSTALL TIPS

(Read Instructions Completely before Beginning Installation)

CHECK VALVE TO APPLICATOR REQUIREMENTS



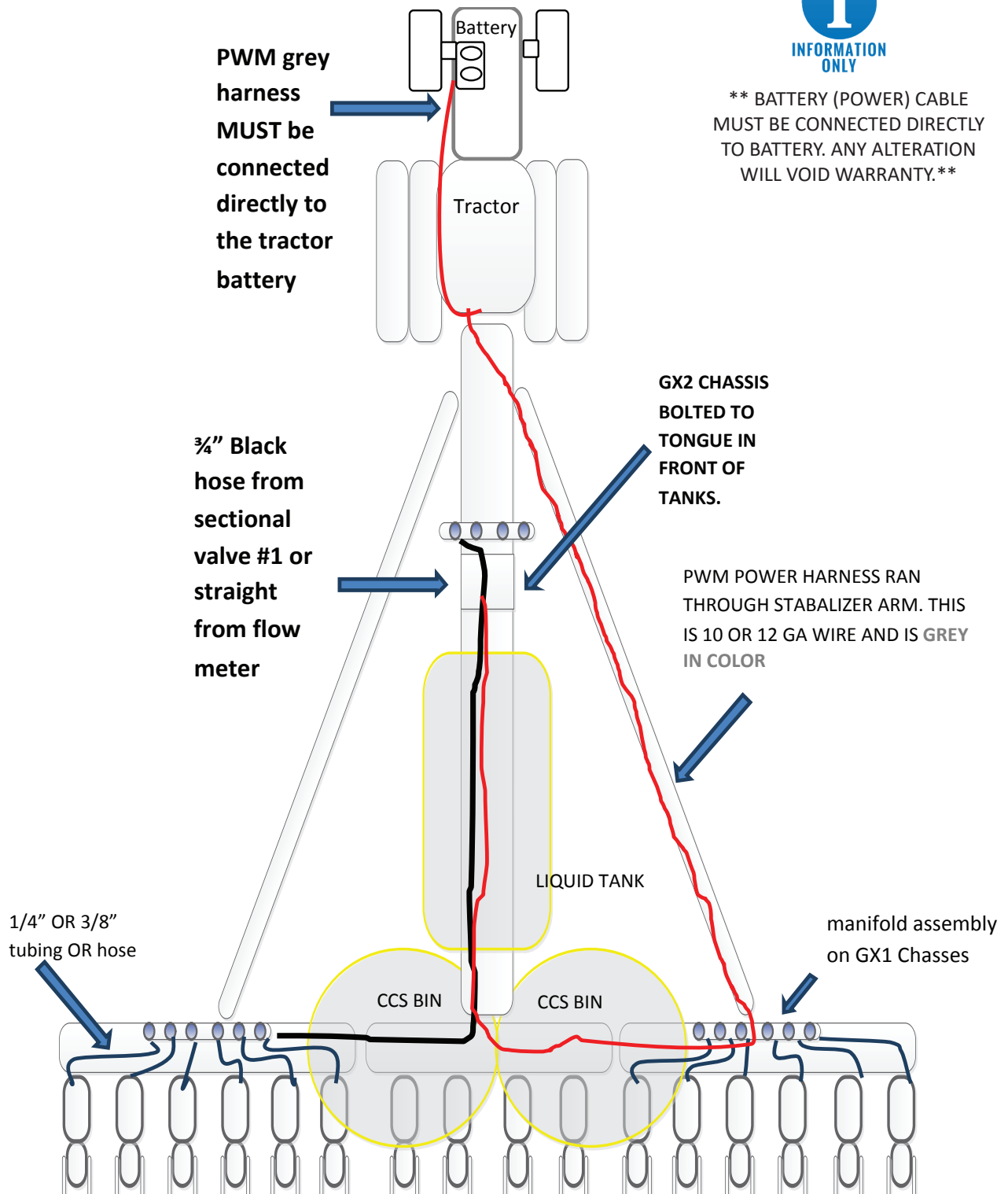
HARNESS AND HOSE ROUTING

(Read Instructions Completely before Beginning Installation)



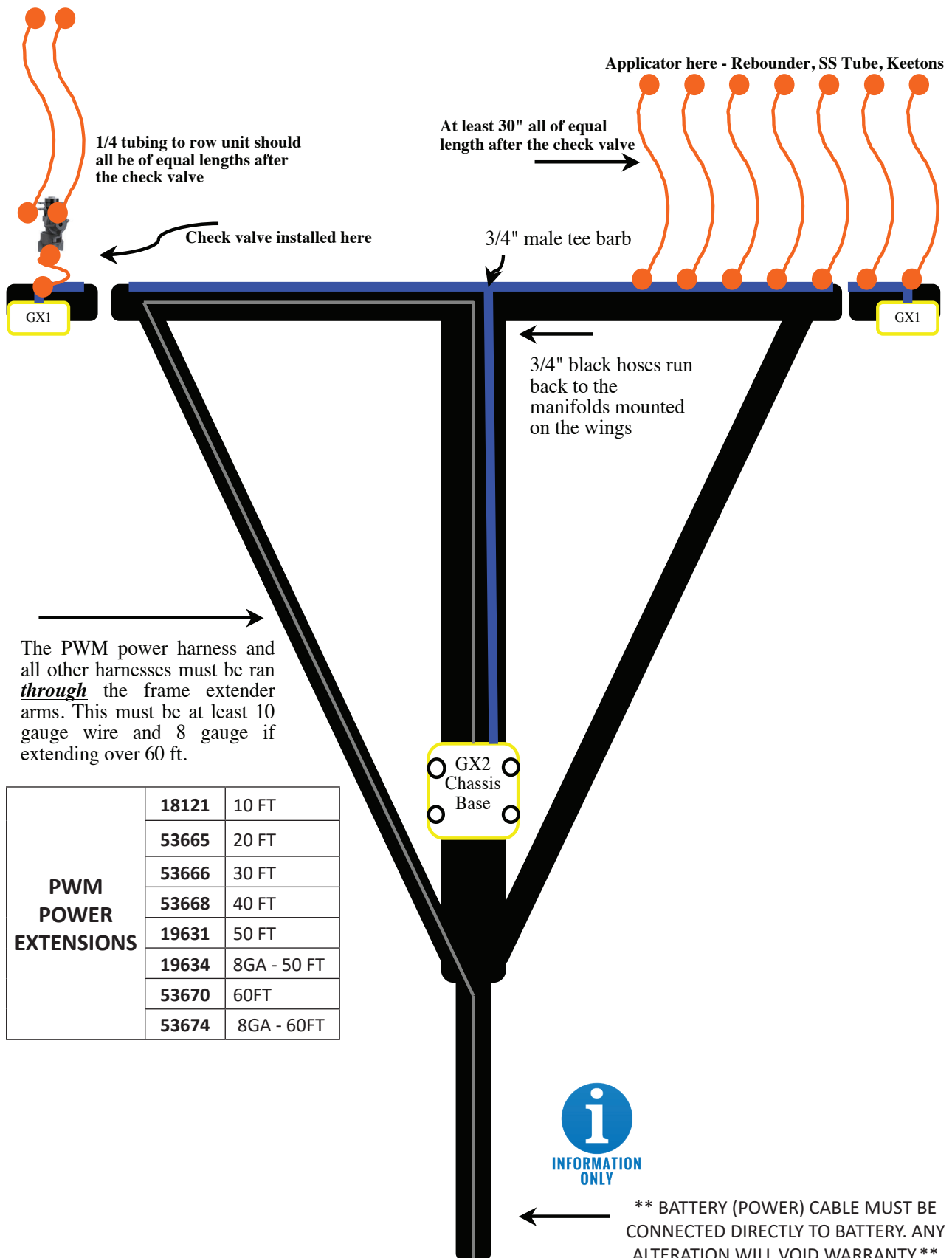
INFORMATION
ONLY

**** BATTERY (POWER) CABLE
MUST BE CONNECTED DIRECTLY
TO BATTERY. ANY ALTERATION
WILL VOID WARRANTY.****



GX2 SYSTEM HARNESS DIAGRAM

(Read Instructions Completely before Beginning Installation)



GX2 CHASSIS MOUNTING OPTIONS

(Read Instructions Completely before Beginning Installation)

The AgXcel GX1 and GX2 chassis have a combination of mounting capabilities. Many times the mounting location of the GX chassis is user preference. However the chassis should be mounted in a location where it will not disturb the operational capacities of the implement. Both GX chassis have the ability to mount on various tool bar sizes and AgXcel has designed alternative brackets to allow the GX chassis to be mounted on top of tool bars, implement tongues and offset brackets for stacker tool bars. Below are some of the more popular installation locations.

Top of Implement Tongue Mount

This setup requires the GX2 Chassis base bracket PN# 53969



installing the GX2 in this location, all harnesses must be routed through the implement extension arm

GX1 chassis installed on the wing

This example is on a Case IH 16R 30 front fold planter. The tank is a 400 gallon tank with a GX2 chassis mounted on the tongue with 8 x 16 ubolts. Notice the GX1 chassis mounted on the left wing for the floating ball manifolds.



AgXcel CCS GX2 Mounting Bracket PN# 53970

To install the CCS Mounting Bracket, loosen but DO NOT remove the 2 center bolt on the cross beam. Slide the bracket into the 2 bolts and then tighten the 2 bolts down according to the owner's manual recommended requirements.

GX2 CHASSIS MOUNTING OPTIONS

(Read Instructions Completely before Beginning Installation)



GX2 Flat-Base installed on a 1990 drill. This method is also used on the DB planters. The Flat-Base can be bolted to a bracket or it also has holes so that it can be mounted with u-bolts to a tool bar.

GX2 extender brackets for mounting on stacker bars. This brackets moves the GX2 away from the tool bar so as not to impede movement of the folding stacker bar

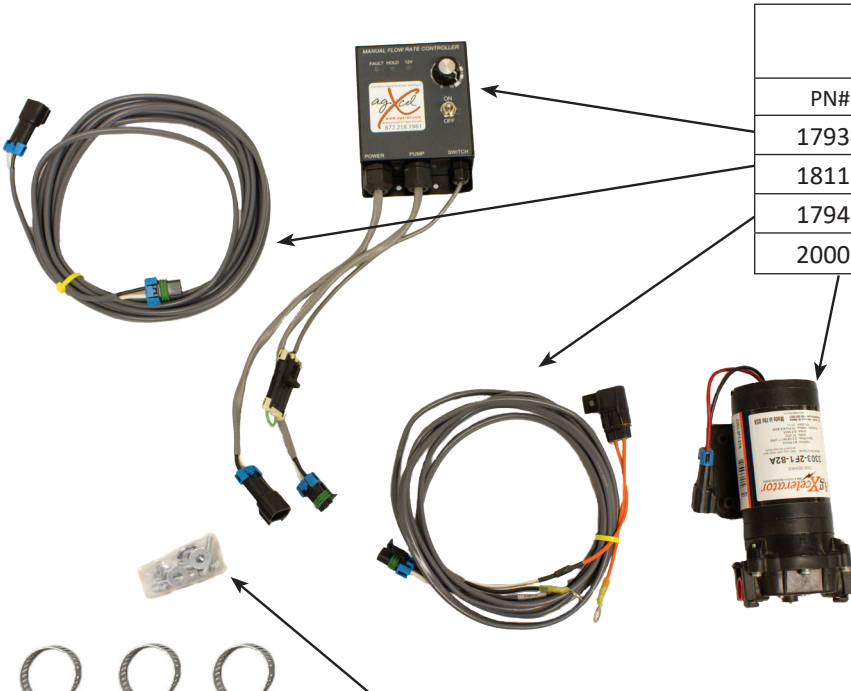


PN#55060
GX2 Extender
bracket mount


AGXCEL AGITATION KIT

PN# 19986

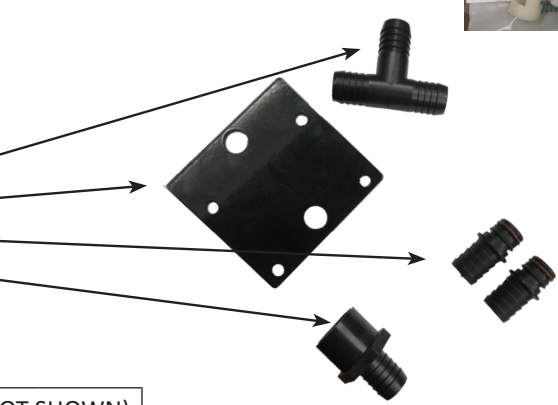
(READ INSTRUCTIONS COMPLETELY BEFORE BEGINNING INSTALLATION)



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

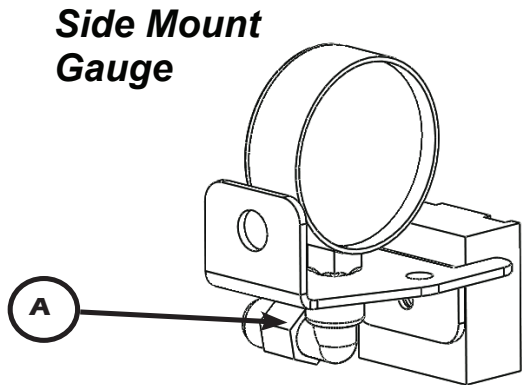
17649	#6 HD CLAMPS	2
56138	3/8" PUMP O'RING BARB	1
20808	3/8" BARB STEM	1

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

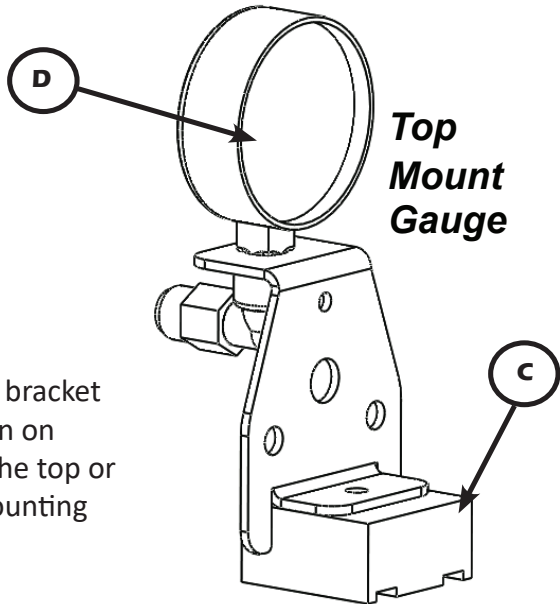
**AGXCEL REMOTE MOUNT
PRESSURE GAUGE KIT**

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

agxcel
**2106 F AVENUE
KEARNEY NE 68847**
877.218.1981

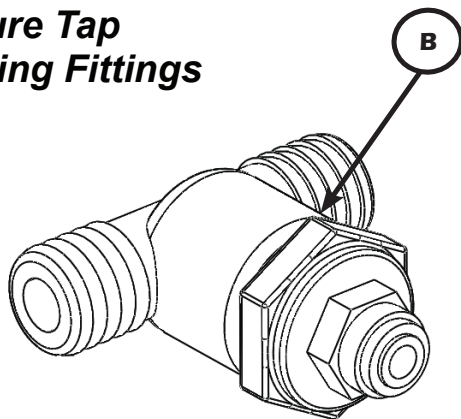


The remote pressure gauge kit includes a gauge with bracket and magnet for easily mounting in any visible location on your implement. The bracket will work to mount to the top or side of a metal frame. Assemble as shown for the mounting that works best in your application.



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.

**Pressure Tap
Plumbing Fittings**



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
ONLY 1 GAUGE PER KIT	33816	4" AMMONIA 60 PSI GAUGE
	33812	4" AMMONIA 160 PSI GAUGE

D

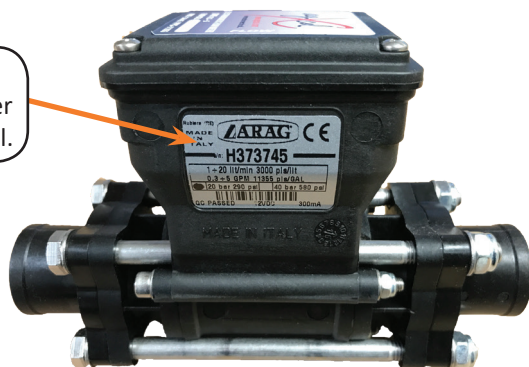
FLOW METER OVERVIEW

(Read Instructions Completely before Beginning Installation)

AGXCEL MAG FLOW METER

The AgXcel Mag Flow meter is a magnetic flow meter, also technically known as an electromagnetic flow meter. A magnetic field is applied to the metering tube, which results in a potential difference proportional to the flow velocity perpendicular to the flux lines. The physical principle at work is electromagnetic induction. The Mag meter is superior to other flow meter since there are no moving parts to replace or maintain just as when dirt or fertilizer with particles is present. Also given that the Mag meter detects the flow of ions in the liquid, it can therefore accommodate for viscosity or liquid density changes. Given the superior features of the Mag flow meter, a quick catch test is always recommended to ensure precision application.

Serial number, flow meter range and calibration number are all listed on the side label.



The new style Magnetic Flow Meters have a black body casing with an integrated AMP Super seal connector.



When using a magnetic flow meter one of the harnesses below must be used for the OEM controller to be able to calculate the flow. See chart below to see which harness is needed.

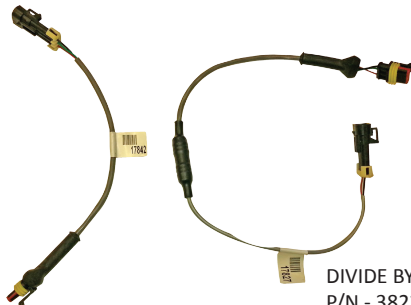
NOTE: RAVEN USES DIVIDE BY 8 HARNESS. 4400 USES REGULAR CABLE

FLOW RANGE (GPM) DIVIDE BY 8 REQUIRED	PULSES PER GALLON	JOHN DEERE GS2/GS3		AG LEADER		TRIMBLE		MICROTRAK	
		DB8 CABLE	CAL#	DB8 CABLE	CAL#	DB8 CABLE	CAL#	DB8 CABLE	CAL#
0.08 - 1.6	22710	YES	2839	NO	22710	NO	22710	NO	45420
0.13 - 2.6	22710	YES	2839	NO	22710	NO	22710	NO	45420
0.3 - 5	11355	YES	1419	NO	11355	NO	11355	NO	22710
0.6 - 13	4542	NO	4542	NO	4542	NO	4542	NO	9084
1.3 - 26	2271	NO	2271	NO	2271	NO	2271	NO	4542
2.6 - 53	1135	NO	1135	NO	1135	NO	1135	NO	2270

A controller that requires a DB8 harness is due to the fact that when inputting the flow meter cal number, some controllers can only input 4 digits. A DB8 harness will take the pulses per gallon and divide it by 8. Giving you a 4 digit cal number.

NOTE: To get the cal numbers for Micro-Trak controllers the formula is - Divide by 8, multiply by 2.

STANDARD ADAPTER HARNESS.
P/N - 53671



DIVIDE BY 8 HARNESS
P/N - 38228

AGXCEL TURBINE FLOW METERS

FM750 Reg
Micro-Trak Cal Number - 145 (SprayMate, Auto-X)
Pulses Per Gallon - 72.50 (JD, AGL, Trimble)
Pulses Per 10 Gallon - 725 (Raven)

FM750 LF
Micro-Trak Cal Number - 466 (Spraymate, Auto-X)
Pulses Per Gallon - 233 (JD, AGL, Trimble)
Pulses Per 10 Gallon - 2330 (Raven)



GX ORION MAGNETIC FLOW METER KITS		FLOW METER ONLY
KIT PN#	DESCRIPTION	PN#
54877	GXORION KIT - (0.08 TO 1.6 GPM) W/BACKET & MOUNTING HARDWARE	54250
54876	GXORION KIT - (0.13 TO 2.6 GPM) W/BACKET & MOUNTING HARDWARE	34412
54875	GXORION KIT - (0.3 TO 5 GPM) W/BACKET & MOUNTING HARDWARE	34415
54872	GXORION KIT - (0.6 TO 13 GPM) W/BACKET & MOUNTING HARDWARE	53615
54874	GXORION KIT - (1.3 TO 26 GPM) W/BACKET & MOUNTING HARDWARE	53636
54873	GXORION KIT - (2.6 TO 53 GPM) W/BACKET & MOUNTING HARDWARE (1" FPT)	37613
55647	GXORION KIT - (2.6 TO 53 GPM) T5M W/BACKET. MOUNTING HARDWARE & T5 FITTINGS (1 1/2" BARBS)	55689
** See graph on pg. 24 to see if magnetic flow meter requires standard or Divide by 8 Harness (DB8).**		

WOLF LOW FLOW	
INTEGRATION	CAL #
Micro-Trak (SprayMate, AutoX)	7680
Pulses Per Gallon (JD/AGL/Trimble)	3840
Pulses Per Gallon (Raven)	38400

WOLF REG FLOW	
INTEGRATION	CAL #
Micro-Trak (SprayMate, AutoX)	1890
Pulses Per Gallon (JD/AGL/Trimble)	945
Pulses Per Gallon (Raven)	9450



REQUIRES WOLF ADAPTER CABLE
PN#55908

NEW WOLF TURBINE FLOW METER		FLOW METER ONLY
KIT PN#	DESCRIPTION	PN#
55909	WOLF FLOW METER 2,5/50 LT FL. (.7-13GPM) T5 F/M ENDS, WOLF HARNESS ADAPTER, BRACKETING AND 3/4" BARB T5 FITTINGS)	55864
55911	WOLF FLOW METER 10/200 LT FL. (2.6 - 53 GPM) T5 F/M ENDS, WOLF HARNESS ADAPTER BRACKETING AND T5 FITTINGS (OPTIONS OF 3/4" OR 1" BARB)	55910

Calibration/serial number Tag



FM SENSOR CABLE -ONLY-
PN#53552

TURBINE FLOW METER		FLOW METER ONLY
KIT PN#	DESCRIPTION	PN#
54870	AGXCEL LF FLOW METER, FM SENSOR CABLE WITH BRACKETING. GFN FLOW METER KIT .5-12 GPM (1.9-45LPM) 150 PSI, 3/4 FLOW METER	20309
54871	AGXCEL REG FLOW METER, FM SENSOR CABLE WITH BRACKETING. 2-40 GPM (6-150 LPM) 150 PSI, 3/4 FLOW METER	38310

TURBINE HALF HOUSING -ONLY-
PN#56117 (SPECIAL ORDER)

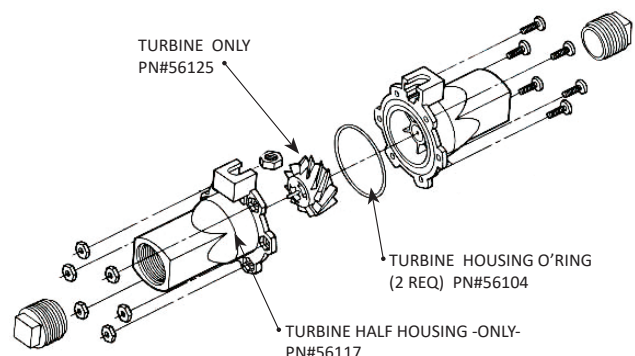
TURBINE HOUSING O'RING (2 REQ)
PN#56104 (SPECIAL ORDER)

TURBINE ONLY PN#56125
(SPECIAL ORDER)

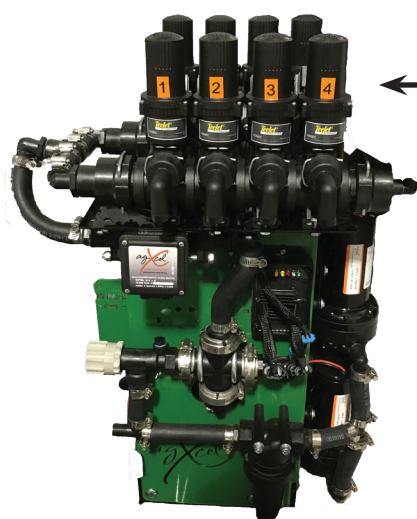


Removing metal tag from Turbine flow meters or altering casing or turbine will void warranty. Any returns or warranty issues will require original documentation (flow meter serial number/calibration tag).

**** WARNING!!** If you disassemble the Turbine flow meter for cleaning be **EXTREMELY CAREFUL** not to damage or alter the turbine or casing for this will **VOID** your warranty **



GX SECTION KITS		VALVES ONLY
KIT PN#	DESCRIPTION	PN#
54833	1 SECTION VALVE SWATH KIT - INCLUDES MOUNTING BRACKET, POLY FITTINGS, HARDWARE, STAINLESS HOSE CLAMPS AND 50' OF 3/4 HOSE	54002
54834	2 SECTION VALVE SWATH KIT - INCLUDES MOUNTING BRACKET, POLY FITTINGS, HARDWARE, STAINLESS HOSE CLAMPS AND 50' OF 3/4 HOSE	40406
54835	3 SECTION VALVE SWATH KIT - INCLUDES MOUNTING BRACKET, POLY FITTINGS, HARDWARE, STAINLESS HOSE CLAMPS AND 100' OF 3/4 HOSE	40412
54836	4 SECTION VALVE SWATH KIT - INCLUDES MOUNTING BRACKET, POLY FITTINGS, HARDWARE, STAINLESS HOSE CLAMPS AND 150' OF 3/4 HOSE	40418
54837	5 SECTION VALVE SWATH KIT - INCLUDES MOUNTING BRACKET, POLY FITTINGS, HARDWARE, STAINLESS HOSE CLAMPS AND 150' OF 3/4 HOSE	40421
54838	6 SECTION VALVE SWATH KIT - INCLUDES MOUNTING BRACKET, POLY FITTINGS, HARDWARE, STAINLESS HOSE CLAMPS AND 200' OF 3/4 HOSE	40427
** Depending on section mounting location, extensions not included in kits above may be necessary. **		



**Optional ways to mount the sections.



PN#53957 GX5 BRACKET ASSEMBLY FOR JD 1770 NT FRONT FOLD PLANTER FOR 24 ROW PLANTERS WILL NOT FIT DB MODELS

MISC HARNESS	
53594	6 SECTION BOOM HARNESS
53800	12 SECTION BOOM HARNESS
20031	TRANSDUCER/SECTION EXTENSION (SOLD BY THE FT)



** OPTIONAL PRESSURE TRANSDUCER KIT (PN#53491) AVAILABLE FOR PURCHASE IN PLACE OF THE GAUGE **

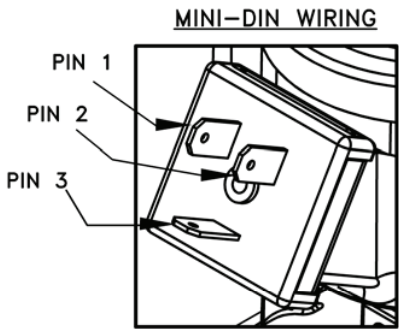
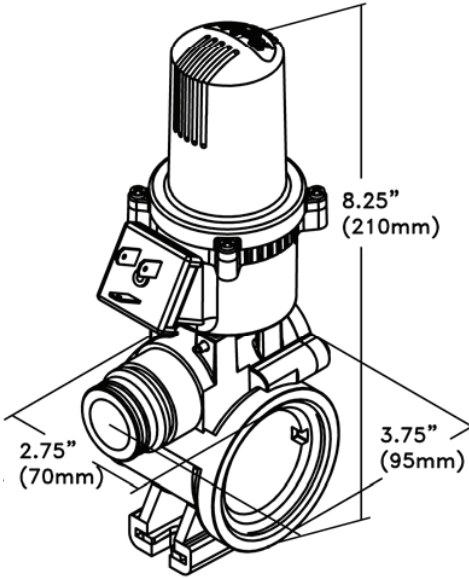


SPECIFICATIONS:

- MAXIMUM PRESSURE RATING: 215 PSI (15 BAR)
- FLOW RATE: 11.7 GPM (44 l/min) @ 5 PSI (.34 BAR) PRESSURE DROP
- FLOW RATE: 16.5 GPM (63 l/min) @ 10 PSI (.69 BAR) PRESSURE DROP
- CURRENT DRAW: LESS THAN 0.5 AMP AT 12 VDC
- RESPONSE TIME: 0.6 SECONDS
- WETTED MATERIALS: POLYPROPYLENE, STAINLESS STEEL, VITON, AND TEFLON

FEATURES INCLUDE:

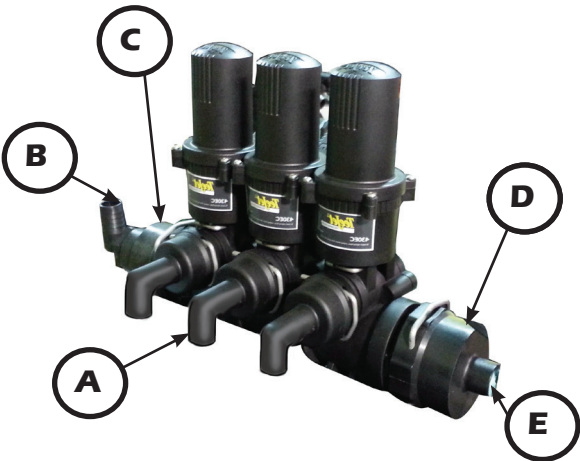
- REGULATED BYPASS FEATURE SIGNIFICANTLY IMPROVES PRESSURE STABILITY WHEN BOOM SECTIONS ARE SWITCHED ON OR OFF
- GRADUATED BYPASS PORT IS ADJUSTED TO MATCH BOOM SECTION FLOW WHICH REDUCES SYSTEM PRESSURE INCREASES AND DECREASED
- REGULATED BYPASS ALLOWS THE REGULATING VALVE TO MAINTAIN A MORE STABLE POSITION
- BYPASS PORT IS COMPATIBLE WITH EXISTING TEEJET QUICK CONNECT FITTINGS
- BUILT IN MINI-DIN CONNECTOR
- “EC” STYLE IS COMPATIBLE WITH AUTOMATIC BOOM SECTION CONTROLS
- MOTOR ASSEMBLY COMPLIES WITH IP67 RATING
- QUICK RELEASE MOTOR ASSEMBLY ALLOWS FOR FIELD INSPECTION AND MANUAL VALVE ACTUATION
- ALL METAL GEARS FOR STRENGTH AND DURABILITY
- RESETTABLE INTERNAL FUSE (DISCONNECT POWER FOR 20 SECONDS TO RESET)
- “EC” STYLE MOTOR USES A SINGLE POLE, SINGLE THROW SWITCH
- STAINLESS STEEL STEM AND BALL PROVIDE EXCELLENT DURABILITY
- VALVE IS MOUNTED WITH 5/16” (8MM) BOLTS



WIRING CHART		
PIN	TERMINAL	WIRING "EC" WIRING "E"
1	(+) POS.	(+) POS.
2	(-) NEG.	(-) NEG.
3	SWITCHING	GROUND

PLUMBING	
19920	1/4" TUBING
17614	3/8 BLK HOSE
17649	SST #6 CLAMPS
37619	1/2 BLK HOSE
308	3/4 BLK HOSE (PRECUT IN 50FT)
19646	SST #12 CLAMPS

SECTION MISC		
PN#		DESCRIPTION
A	40869	3/4" X 90 HOSE BARB OUTLET
B	32305	1" X 3/4 POLY ELBOW
C	41725	1" X LQC END CAP KIT
D	41729	1/4 X LQC END CAP KIT
E*	32361	1/4" HEX PLUG
	52142	1/4" POLY ELBOW (FOR GAUGE)
NOT SHOWN	53463	SECTION MOUNTING BRACKET

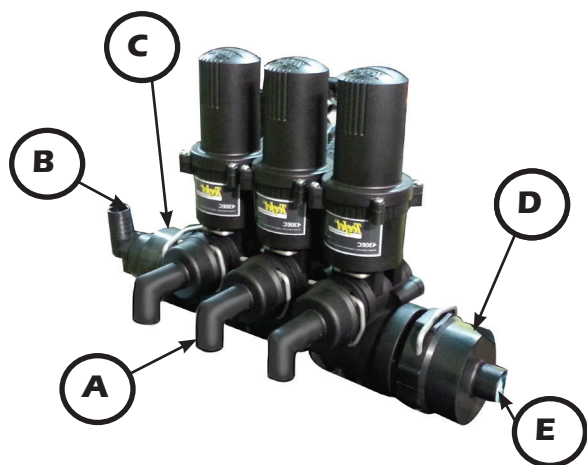
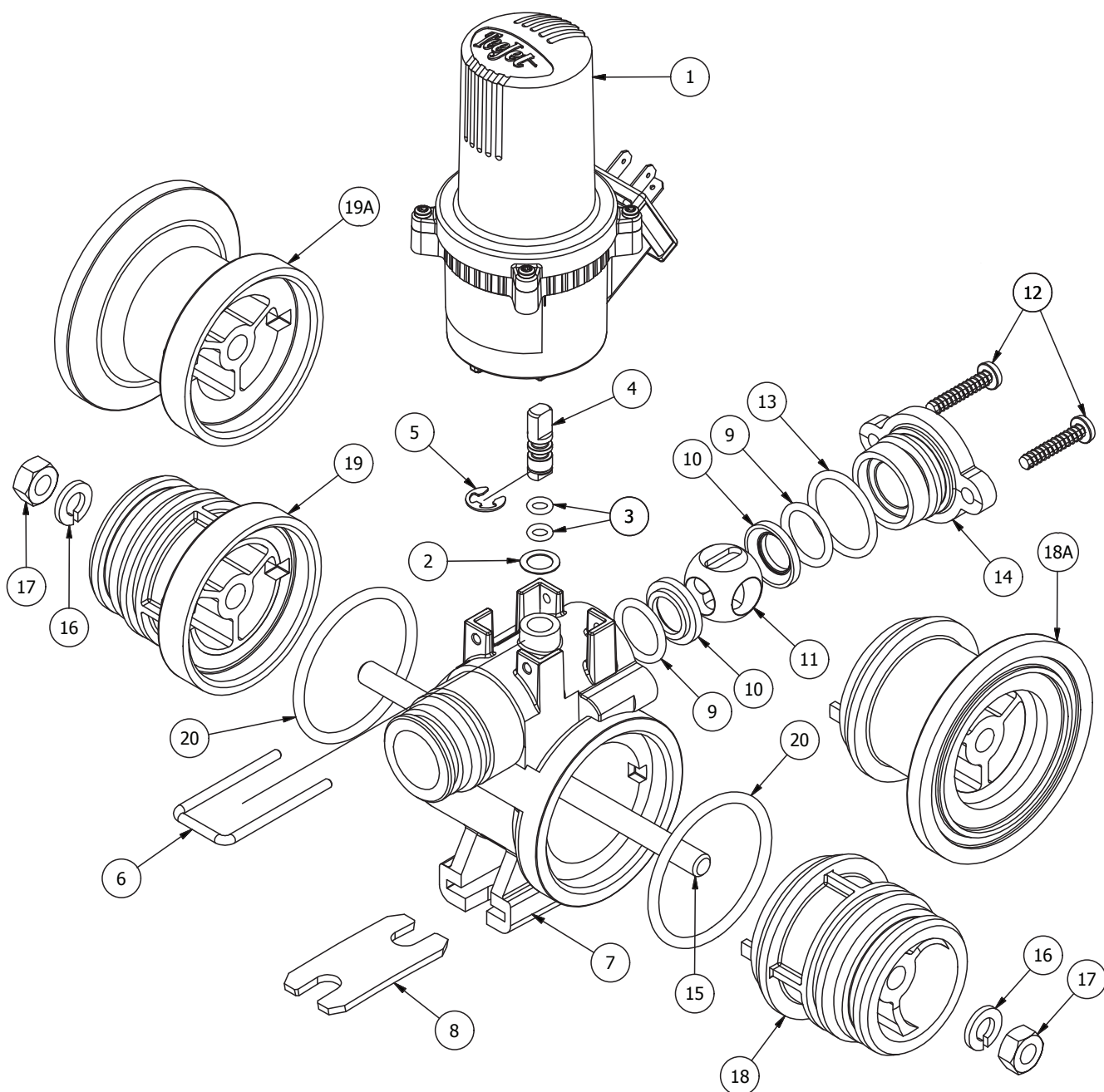


GX SECTION BREAK OUT

PN#	DESCRIPTION	ITEM#
41722	430 EC REPLACEMENT MOTOR	1
46087	FLAT WASHER, 302SS	2
46562	O RING, VITON (2 REQ'D)	3
47843	STEM, 303 STAINLESS STEEL	4
46114	E-CLIP RETAINING RING, 17PH STAINLESS STEEL	5
46091	430 MOTOR RETAINING CLIP, 302 STAINLESS STEEL	6
46083	430 VALVE BODY, PP, FOR 430 POLY (BLACK)	7
45826	MOUNTING PLATE, FOR USE ON 430 EC MOTORS	8
46491	"O" RING VITON (2 REQ'D)	9
46086	SEAL, TEFLON(2 REQ'D)	10
46085	2-WAY BALL, 303SS, FOR USE ON 430EC VALVES	11
51313	SCREW, 302 STAINLESS STEEL (2 REQ'D)	12
46498	O-RING,VITON	13
46084	430 2WAY END CAP POLY (BLACK)	14
46105	1 SECTION MANIFOLD CONNECTING ROD, 303 STAINLESS STEEL	15
46106	2 SECTION MANIFOLD CONNECTING ROD, 303 STAINLESS STEEL	
46107	3 SECTION MANIFOLD CONNECTING ROD, 303 STAINLESS STEEL	
46108	4 SECTION MANIFOLD CONNECTING ROD, 303 STAINLESS STEEL	
46109	5 SECTION MANIFOLD CONNECTING ROD, 303 STAINLESS STEEL	
46110	6 SECTION MANIFOLD CONNECTING ROD, 303 STAINLESS STEEL	
CALL	** SPECIAL ORDER ITEMS - 7 UP TO 15 SECTION MANIFOLD CONNECTING ROD, 303 STAINLESS STEEL	
46123	M8 SPLIT LOCK WASHER	16
45589	M8X1.25 HEX NUT	17
46088	430 MALE INLET ADAPTER FOR SECTION VALVE POLY (BLACK)	18
46782	75 FLANGE MALE INLET NYLON (BLACK)	18A
46089	430 FEMALE INLET ADAPTER	19
46781	75 FLANGE FEMALE INLET NYLON (BLACK)	19A
46542	O-RING, VITON (2 REQ'D)	20
41735	TWO WAY SUB ASSEMBLY 430 2-WAY SUB ASSY, TEE JET SECTION VALVE BODY SUB ASSEMBLY, INCLUDES ITEMS 2-5, 7-14 ON EXPLODED VIEW.	2-5 7-14
41761	3WR 1.5M MINI-DIN	NOT SHOWN

**** For section kits or valves only see chart on pg. 26 ****



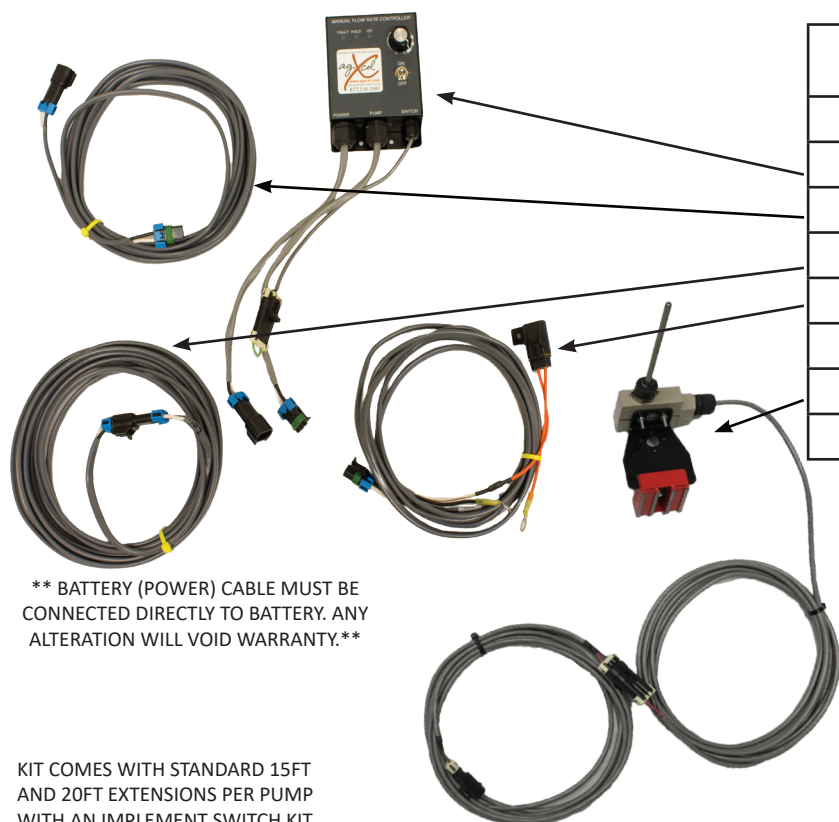


SECTION MISC		
	PN#	DESCRIPTION
A	40869	3/4" X 90 HOSE BARB OUTLET
B	32305	1" X 3/4 POLY ELBOW
C	41725	1" X LQC END CAP KIT
D	41729	1/4 X LQC END CAP KIT
E*	32361	1/4" HEX PLUG
	52142	1/4" POLY ELBOW (FOR GAUGE)
NOT SHOWN	53463	SECTION MOUNTING BRACKET

MANUAL RATE CONTROL KIT

SINGLE PUMP PN# 563

DUAL PUMP PN# 564



**** BATTERY (POWER) CABLE MUST BE CONNECTED DIRECTLY TO BATTERY. ANY ALTERATION WILL VOID WARRANTY.****

KIT COMES WITH STANDARD 15FT AND 20FT EXTENSIONS PER PUMP WITH AN IMPLEMENT SWITCH KIT (OR MERCURY SWITCH KIT) WITH TWO 15FT EXTENSIONS AND MAGNET MOUNT. IN CASE OF A DUAL PUMP CONFIGURATION A "Y" HARNESS IS INCLUDED TO CONTROL BOTH PUMPS.

MANX CONTROL KIT SINGLE PN#563		
PN#	ITEM	QTY
17934	MANX CONTROLLER	1
18113	15 FT EXTENSION	1
53660	20 FT EXTENSION	1
17944	BATTERY CABLE 15FT **	1
ONLY 1 KIT BELOW WILL BE INCLUDED:		
53824*	RUN/HOLD KIT*	1
54066*	MERCURY SWITCH KIT*	1

*KITS WILL COME WITH EITHER A MERCURY SWITCH OR AN IMPLEMENT SWITCH.

FEATURES:

- Rheostat manual speed control for 12-volt pumps
- 6" wiring for power input and output for motor standard
- Sealed heavy-duty electrical connectors
- Reverse polarity protection
- On/Off control switch with power indicator lamp
- Smoother adjustment of pump flow/pressure, which results in reduced sensitivity at the top of the adjustment scale
- Optional stainless steel ammonia gauge can be mounted either outside of the cab or onto the control box (*Optional remote gauge kit PN# 53769*)
- Run/Hold circuit on 35 amp units
- Control mounted hardware included
- All AgXcel Manual Rate Controllers are backed by a 1-year warranty

MANX CONTROL KIT DUAL PN#564		
PN#	ITEM	QTY
17934	MANX CONTROLLER	1
18113	15 FT EXTENSION	2
53660	20 FT EXTENSION	2
17944	BATTERY CABLE 15FT **	1
17945	"Y" PUMP CABLE	1
ONLY 1 KIT BELOW WILL BE INCLUDED:		
53824*	RUN/HOLD KIT*	1
54066*	MERCURY SWITCH KIT*	1



MANUAL RATE CONTROL KIT

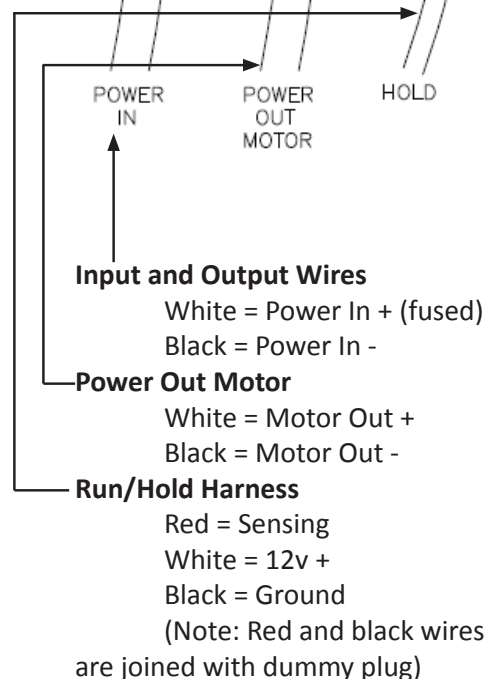
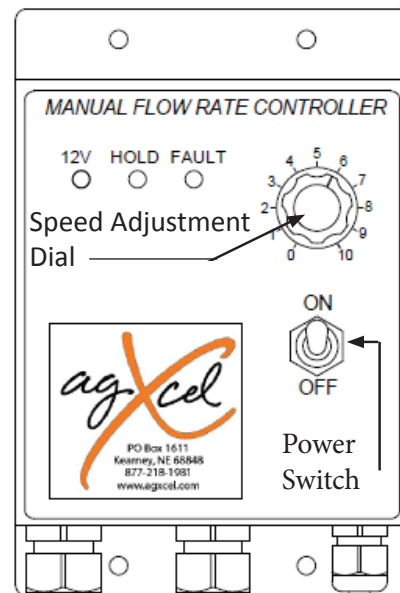
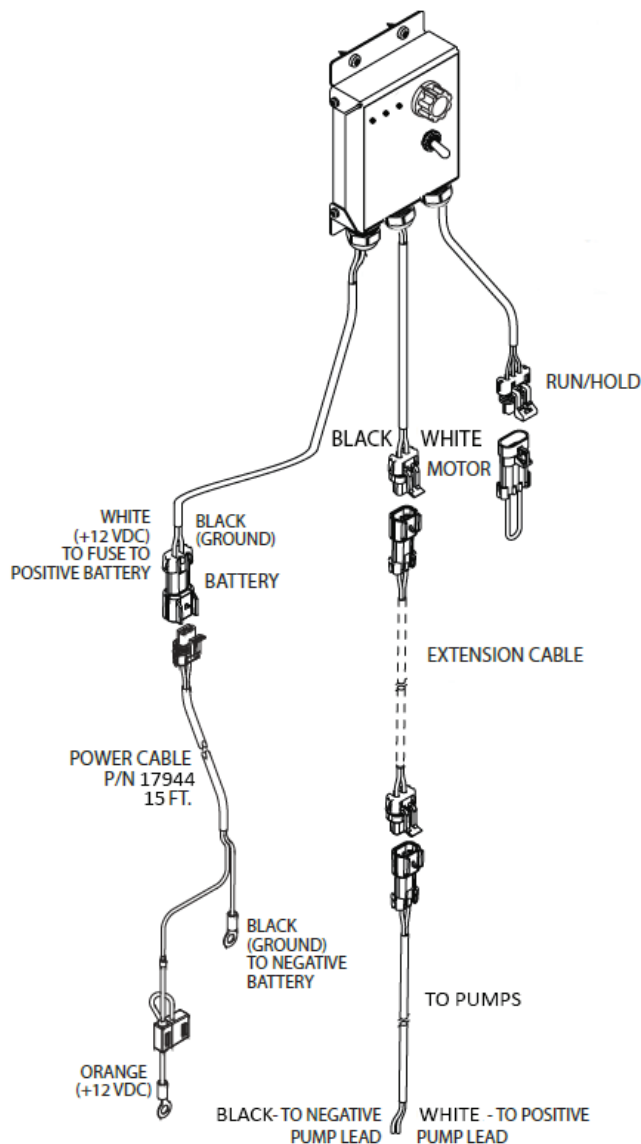
SINGLE PUMP PN# 563

DUAL PUMP PN# 564



**2106 F AVENUE
KEARNEY NE 68847**

877.218.1981



AVAILABLE EXTENSIONS	
PN#	ITEM
17939	5 FT EXTENSION
17958	10 FT EXTENSION
18113	15 FT EXTENSION
53660	20 FT EXTENSION
53661	30 FT EXTENSION
53662	40 FT EXTENSION
19630	50 FT EXTENSION
53663	60 FT EXTENSION



INFORMATION ONLY

**** BATTERY (POWER) CABLE MUST BE CONNECTED DIRECTLY TO BATTERY. ANY ALTERATION WILL VOID WARRANTY.****

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.

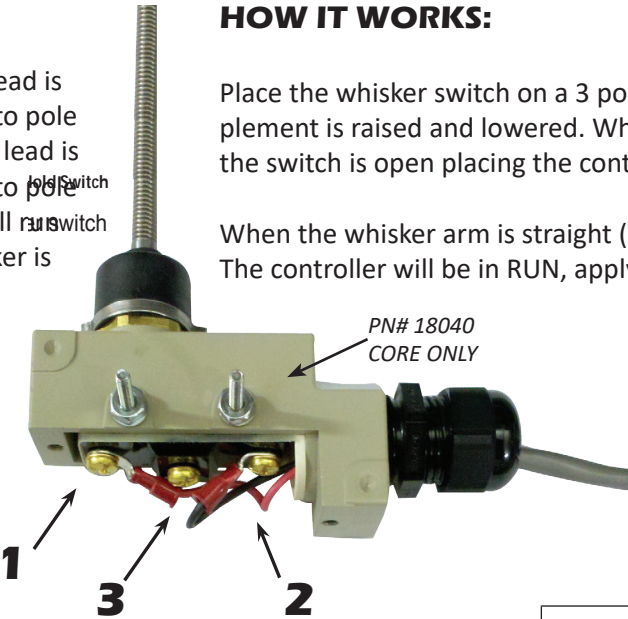


HOW IT WORKS:

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		



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 open ends)
- 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.

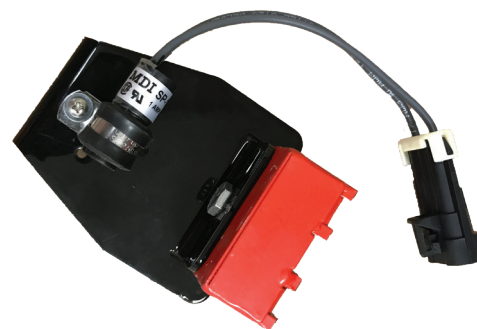


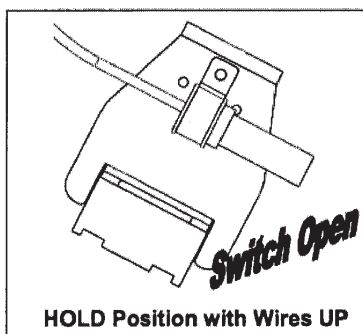
Illustration shown has a 3pin connector.

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.

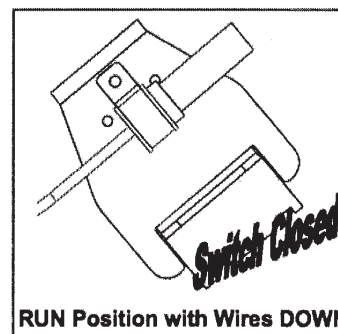
HOW TO TEST:

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		

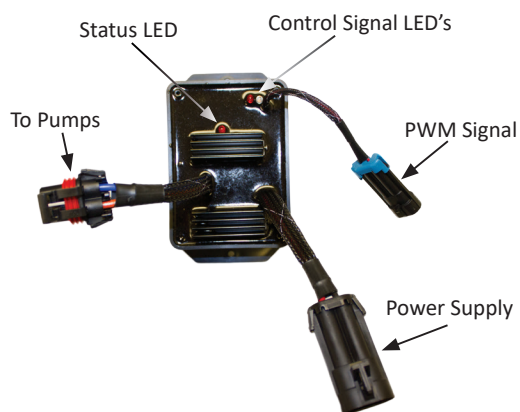
TROUBLESHOOTING

(Read Instructions Completely before Beginning Installation)

EPD LED Signals

AgXcel has 2 styles for EPD's. One of the models has three lights and the other model has five lights. Ensure that you are looking at the correct diagram to confirm the signals you are receiving.

The status LED on the PWM is a good indicator to determine if there's a problem with the system. It is especially helpful if you are calling in for tech support.



LED STATUS INDICATOR CODES		EDP Status Lights
Light on steady		Unit is turned on and operating normally
Steady Flashing		Unit in HOLD. Check Run/Hold jumper or remote switch for correct operation.
1 Flash/pause		Open circuit detected. Check motor connections for open.
2 Flashes/pause		Output short circuit detected. Check motor wiring.
3 Flashes/pause		Over-current condition. Check total load.
4 Flashes/pause		Input Power fault. Check input power wiring.
5 Flashes/pause		Input frequency out of range.
NOTE: Cycle power with the controller ON/OFF switch to clear a fault code		

EDP Status Lights

	Color	Time Line	LED State	Condition
POWER	Power (12V) Green		Off	No power (or less then 6.8V)
	Power (12V) Green		1hz Flash	Under Voltage (less then 10.5V)
	Power (12V) Green		On Solid	12V supplied (power is acceptable)
PWM	PWM Blue		Off	No PWM Signal to the Module
	PWM Blue		1hz Flash	PWM signal present
	PWM Blue		On Solid	Maximum Duty Cycle
TEMP	High Temp Yellow		Off	Module within Temperature Range
	High Temp Yellow		1hz Flash	Module Temp is elevated
	High Temp Yellow		On Solid	Module Auto Shutdown from Temp
MOTOR CURRENT	Current Red		Off	Normal Operation (Under Max)
	Open Circuit Red		1hz Flash	Open Circuit Condition
	Over Current Red		On Solid	Over Current (Output Shorted)
MOTOR RUNNING	Motor Orange		Off	Motor is not running
	Motor Orange		On Solid	Motor is running



The PWM's take 12 volts for power and will send that voltage to the pumps to kick on and off. If the pumps are not turning on, then your PWM might not be getting 12 volts or your pumps might have gone bad.

TROUBLESHOOTING

(Read Instructions Completely before Beginning Installation)

Pumps run for a few seconds then turn off

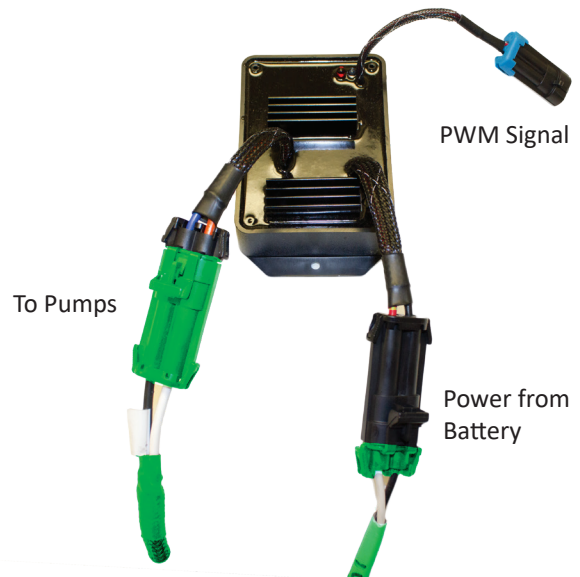
This symptom is due to the pumps drawing more current than the 40 amp limit of the EPD.

1. **Unplug the EPD** connector going to the battery for 2-3 seconds. Removing power from the EPD resets it.
2. **Go to Diagnostics**, Section Test to investigate this issue.
3. **In Section Test**, hold down “+” button for a few seconds. A single tap of this button produces a very small change in signal to the valve, so you must hold it.
4. Increase the flow slowly, checking the “1,2,3” screen to see you flow in GPM. Find the approximate flow where the EPD kicks out. If this is below the flow you need you will need to reduce system pressure by:
 - Looking for any unintended restrictions or plugged rows
 - Increase orifice size
 - Reduce ground speed
 - Reduce application rate

Electric pumps will not turn on

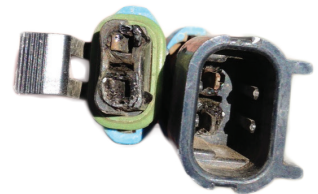
Connect pumps directly to battery

1. Find the EPD (electric pump driver) shown at right. Connect the two connectors (highlighted green, shown on the right) to each other. This will bypass the module and supply 12 volts directly to pumps.
2. Do the pumps run? If not, check the 40 amp fuse on the EPD harness that is connected to the tractor battery. Inspect harnesses and connections. Make sure wire colors match up. (white/white, black/black)
3. If using a dual pump system, test each pump by plugging one pump at a time directly to the battery.



Inspect connections for burned out connectors.

Inspect all connections for bent or burned out leads. Constantly running the system at a high pressure or getting more than the required voltage (12v) can result in burned out connections causing the system to not work properly.



RECOMMENDED CARE AND MAINTENANCE

(Read Instructions Completely before Beginning Installation)

WINTERIZATION

AgXcel recommends flushing your fertilizer pump and complete system with adequate amounts of water first. Next, use RV antifreeze to winterize your system by pumping an adequate amount through all components.

RECOMMENDED PRESSURE (GX ELECTRIC SYSTEMS ONLY)

Agxcel recommends to maintain a pressure between 10 and 20 psi. Doing so, and with proper winterization, will ensure the durability of the system, and reduce problems when preparing for the next season.

TESTING THE SYSTEM

Agxcel recommends testing your system with water first. Water testing will help determine if the plumbing and hardware is secure.

CALLING FOR TECH SUPPORT

Before calling for tech support, please check our troubleshooting section. If your problem cannot not be resolved please have your serial number handy so our technicians can easily look up your order. Serial numbers can be located on the chassis of the pump systems, or on the front page on the installation guide.

TROUBLESHOOTING

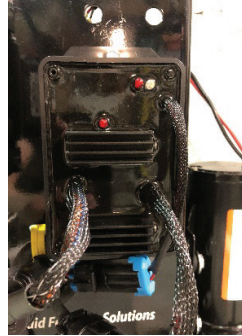
(Read Instructions Completely before Beginning Installation)

ELECTRIC SYSTEM WON'T TURN ON...

- Check for Voltage to your PWM. You can do this by checking to see if you have 12 volts going into your PWM.
 - If you don't have 12 volts going into your PWM, check the harness for a pinched wire and check the battery to make sure that the prongs are making a good connection with the battery.
- AgXcel has 2 different styles of PWM's.



You should have a consistent **GREEN** light on signaling 12 volts. You should also have a blinking **BLUE** light signaling a PWM signal exists.



You Should have a blinking **RED** light signaling 12 volts (The light in the middle). This light should be solid **RED** when the system is running.

- Make sure that the PWM is getting a signal.
 - This can be done by checking for 12 volts on the cable with the Green and Yellow wire extending out of the PWM when the system is running.
 - If there is no voltage, make sure that you are doing a NOZZLE FLOW CHECK. You can also check the pins to see if they are burned, bent or corroded. Check the harnessing to make sure that there are no pinched cables or cuts in the line.
- Check to see that the pumps are getting 12 volts
 - Check the male cable extending out of the PWM while the system is running for 12 volts. If a signal is not being sent out while the system is running, then your PWM might be bad.
 - Plug the Pumps directly to the battery to see if they kick on at full blast. If they do, then the pumps are alright and the PWM might not be sending a signal to the pumps.
 - If the pumps don't kick on when connected directly to the battery and when the PWM is sending 12 volts to the pumps, then your pumps might be bad.
- Make sure that your planter is DOWN or that your RUN/HOLD switch is looped if you are not using a RUN/HOLD switch

PUMP SYSTEM WON'T PRIME...

- Make sure that your filters are clean and you have no blockage in your plumbing.
- You can open your bleeder valve to allow air to escape the system
- Raising your rates while you are doing a Nozzle Flow Check can also get the liquid flowing through your system faster.
- Make sure that your filters are completely clean
- Make sure that your bypass valve is closed all of the way and locked



Opening the bleeder valve while the system is priming can let air escape your system that might be trapped. Keep this open until liquid starts to shoot out.



TROUBLESHOOTING

(Read Instructions Completely before Beginning Installation)

MY RATES ARE JUMPING AROUND...

- Make sure that liquid has reached and is flowing through your Flow Meter
- Check for 12 volts on the harness that plugs into the Flow Meter
- Ensure that you have the correct harness and the correct Flow Calibration number in your settings

FLOW RANGE (GPM) DIVIDE BY 8 REQUIRED	PULSES PER GALLON	JOHN DEERE GS2/GS3		AG LEADER		TRIMBLE		MICROTRAK	
		DB8 CABLE	CAL#	DB8 CABLE	CAL#	DB8 CABLE	CAL#	DB8 CABLE	CAL#
0.08 - 1.6	22710	YES	2839	NO	22710	NO	22710	NO	45420
0.13 - 2.6	22710	YES	2839	NO	22710	NO	22710	NO	45420
0.3 - 5	11355	YES	1419	NO	11355	NO	11355	NO	22710
0.6 - 13	4542	NO	4542	NO	4542	NO	4542	NO	9084
1.3 - 26	2271	NO	2271	NO	2271	NO	2271	NO	4542
2.6 - 53	1135	NO	1135	NO	1135	NO	1135	NO	2270

- If you have a Turbine flow meter and not a Magnetic flow meter, check for debris. Cleanout the flow meter by removing the 6 screws holding the outer casing together. Carefully clean and re-assemble.
- The turbine flow meter is bi-directional so it can be reversed for even wear.

If these steps do not work, then your Flow Meter might be going bad.



calibration/serial number tag

See pg. 24-25 for more flow meter information.



Removing metal tag from Turbine flow meters or altering casing or turbine will void warranty. Any returns or warranty issues will require original documentation (flow meter serial number/calibration tag).

**** WARNING!!** If you disassemble the Turbine flow meter for cleaning be **EXTREMELY CAREFUL** not to damage or alter the turbine or casing for this will **VOID** your warranty **

SYSTEM NOT BUILDING ENOUGH PRESSURE...

- Try using a smaller Orifice/Micro Tube size to build Pressure
- Try raising your GPA/MPH
- Make sure that your Bypass Valve is CLOSED and LOCKED
- Testing with water may be different than testing with fertilizer

See pg. 12 - 13 for more information.

ORIFICES		
SPECIAL ORDER ITEMS	P/N#	DISC
	35327	30-DC-00 - BLANK
	18203	30-DC010 - GREY VERY LOW FLOW
	17591	30-DC018 - TERRACOTA
	17964	30-DC023 - PINK
	17965	0-DC-01 - GREY
	17966	30-DC-015 - 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 - IMPERIAL GREEN
	19962	30-DC-12 - ROYAL BLUE

Pink is the smallest orifice and Royal Blue is the biggest orifice

PINK
YELLOW
GREY
NAVY BLUE
BROWN
SKY BLUE
GREEN
PURPLE
ORANGE
RED
BLACK

Pink is the smallest Micro Tubing and Black is the biggest Micro Tubing

RECOMMENDED CARE AND MAINTENANCE

(Read Instructions Completely before Beginning Installation)

WINTERIZATION

For winterization of the AgXcel electric pump system, AgXcel recommends the following steps to be taken to ensure successful winter storage.

- Flush the entire system thoroughly with WATER. This requires flushing at least 50 gallons of water through the system.
- Run the systems controller at various rates by increasing and decreasing the rate of the application. This will allow the liquid to flush any fertilizer that may be trapped in elbows or feeds.
- Allow the system to run at a low rate, (4 GPA) this would also be a good time to clean out the check valves and orifices by removing the twist cap where the orifice is mounted, and ensuring there is no trapped trash or fertilizer. Take the orifices out and store as this will allow for next season start up with no orifices should any trash get into the system over the winter.
- Next use RV antifreeze to winterize the system. This may be poured into the tank and ran at a moderate rate, 4 GPA until a steady flow is showing out of the application tube.

SEASON OPENER

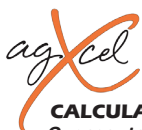
When starting your AgXcel electric pump system for the first time after a winter storage, sometimes the diaphragms may have a tendency to stick. Here are the appropriate steps required to properly jump start your system.

- Ensure that all testing is performed with **WATER** and **NOT** fertilizer. This will eliminate many upfront issues.
- Once the tank is filled with water, start the AgXcel system and identify any leaks or liquid blocks in the system.
- If the electric pumps are running but no liquid is being dispensed, this will be the time to run a water hose through the feed side of the pumps. This will place an appropriate amount of pressure through the diaphragms to release any sticking that may have occurred during the winter.

tip

If sectional valves are used make sure they are opened during time of testing

Remember, electric pumps can last up to 5 years when properly maintained. High system pressure (over 25 psi) can dramatically reduce the life and overall GPM performance of any electric pump setup. So before the season starts, make sure you test the system for overall GPM or GPA that are required for your season application rates to ensure a smooth start to your season.



CALCULATOR

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



OLD

Two piece Diaphragm & pressure pad o-ring

PN# 25803
Viton Only

PN# 54538
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 **

See page 12 -13 for check valve components and metering disc details.



VISUAL PARTS INDEX

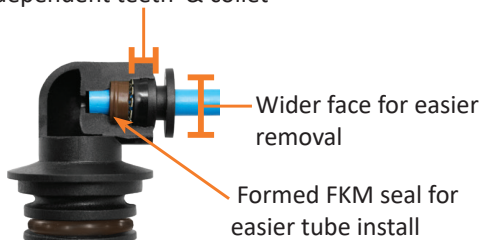
This is a visual index of our most common components and replacement parts for ease of ordering. If you do not see the component used in your kit, please contact our office for assistance.

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)






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. 39)
	25681	Flow column ball retainer

CHECK VALVES			
	KIT#	ASSEMBLED PN#	DESCRIPTION
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 

See page 12 -13 for check valve components and metering disc details.



FLOW COLUMN COMPONENTS		
	PN#	DESCRIPTION
	54333	Pro Stop E valve body only
	54379*	Pro Stop E valve body - no inlet/outlets *Inlets/Outlets will vary depending on use and plumbing - Call for assistance*
	55400	QRS Manifold Buna 4P
	55665	QRS Manifold Buna 3P
	55664	QRS Manifold Buna 2P
	55666	QRS Manifold Buna 1P
	38324	GX mounting sight column and/or ORS manifold bolt kit use 1 kit per bank of 12.
	17959	3/8" Y (use #6 clamps PN# 17649)
	18204	3/4" Y (use #12 clamps PN# 19646)

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 

For a more complete parts catalog available for download
see support section of www.agxcel.com

See page 12 -13 for check valve components
and metering disc details.

DISK ORIFICE CHART

For 30" row spacing



2106 F AVENUE
KEARNEY NE 68847

877.218.1981

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

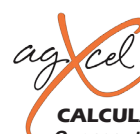
AgXcel GX Pressure recommendations (with a 10lb check valve)

- 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.12



CALCULATOR

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



DISK ORIFICE CHART

Common Grain Drill row spacings



7.5" 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	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)	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	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

15" Spacing

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)	60	0.081	8.0	7.1	6.4	5.8	5.3	4.9	4.6
	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
Black (35)	50	0.112	11.1	9.9	8.9	8.1	7.4	6.8	6.4
	60	0.124	12.3	10.9	9.8	8.9	8.2	7.5	7.0
	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
Brown (41)	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
	60	0.170	16.8	15.0	13.5	12.2	11.2	10.4	9.6
	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
Orange (46)	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
	60	0.228	22.6	20.1	18.1	16.4	15.1	13.9	12.9
	10	0.119	11.8	10.5	9.5	8.6	7.9	7.3	6.8
Maroon (52)	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
	60	0.293	29.0	25.8	23.2	21.1	19.3	17.8	16.6
Red (63)	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
Blue (80)	60	0.363	36	32	29	26	24	22	21
	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
Yellow (95)	50	0.486	48	43	38	35	32	30	27
	60	0.532	53	47	42	38	35	32	30
	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
Green (110)	40	0.702	69	62	56	51	46	43	40
	50	0.785	78	69	62	57	52	48	44
	60	0.859	85	76	68	62	57	52	49
	10	0.506	50	45	40	36	33	31	29
	20	0.715	71	63	57	51	47	44	40
White (125)	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
	60	1.239	123	109	98	89	82	75	70
	10	0.686	68	60	54	49	45	42	39
Lime Green (156)	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
	60	1.681	166	148	133	121	111	102	95
	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
	60	2.124	210	187	168	153	140	129	120
	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
	60	3.363	333	296	266	242	222	205	190

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

20" Spacing

20" Spacing

20" Spacing

Orifice Color (Approx Size)		PSI	Gal/Min	MPH						
			28-0-0	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	
	60	0.081	6.0	5.3	4.8	4.3	4.0	3.7	3.4	
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	
	60	0.124	9.2	8.2	7.4	6.7	6.1	5.7	5.3	
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	
	60	0.170	12.6	11.2	10.1	9.2	8.4	7.8	7.2	
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	
	60	0.228	17.0	15.1	13.6	12.3	11.3	10.4	9.7	
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	
	60	0.293	21.7	19.3	17.4	15.8	14.5	13.4	12.4	
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	
	60	0.363	27	24	22	20	18	17	15	
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	
	60	0.532	39	35	32	29	26	24	23	
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	
	60	0.859	64	57	51	46	43	39	36	
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	
	60	1.239	92	82	74	67	61	57	53	
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	
	60	1.681	125	111	100	91	83	77	71	
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	
	60	2.124	158	140	126	115	105	97	90	
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	
	60	3.363	250	222	200	182	166	154	143	

DISK ORIFICE CHART



2106 F AVENUE
KEARNEY NE 68847

877.218.1981

22" Spacing

Orifice Color (Approx Size)	PSI	Gal/Min		MPH						
		28-0-0	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	
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	
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	
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	
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	
Maroon (52)	10	0.149	10	9	8	7	6	5	4	
	20	0.210	14	13	11	10	9	8	7	
	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	
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	0.496	33	29	26	24	22	20	19	
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	
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	
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	
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	
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	

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

36" Spacing

Orifice Color (Approx Size)	PSI	Gal/Min		MPH						
		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	
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	
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	
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	
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	
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	
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	0.496	20	18	16	15	13	12	11	
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	
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	
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	
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	
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	

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



PH# 877.218.1981

**2106 F AVENUE
KEARNEY, NE 68847
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