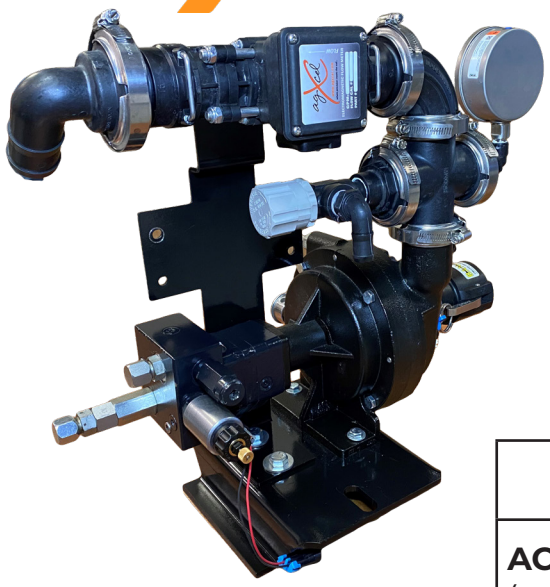
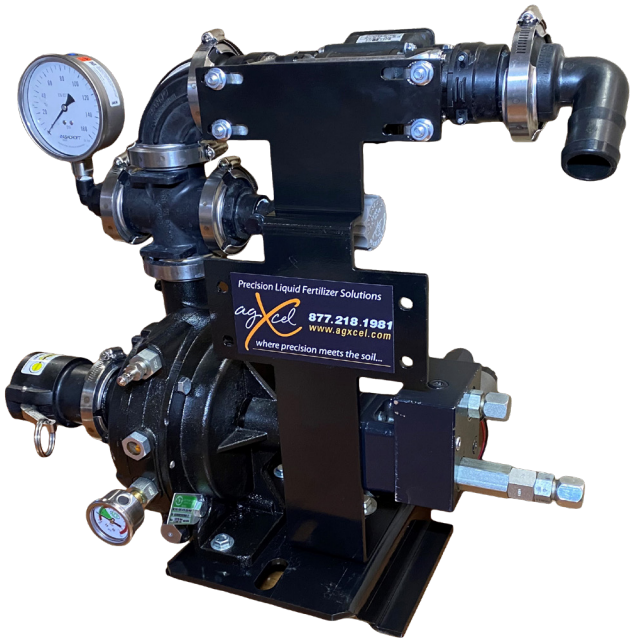
GX5 Hydraulic Centrifugal
fertilizer system operation manual

2106 F Avenue / Kearney NE 68847

GX5





SYSTEM	MIN GPM	MAX GPM
ACE PRO 125 CENTRIFUGAL (w/Raven 15FM)	**0.7 GPM**	**100 GPM**
ACE PRO 155 CENTRIFUGAL (w/Raven 60FM)	**1.5 GPM**	**140 GPM**

S/N STICKER

GX5

REV.SH10132026v1

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

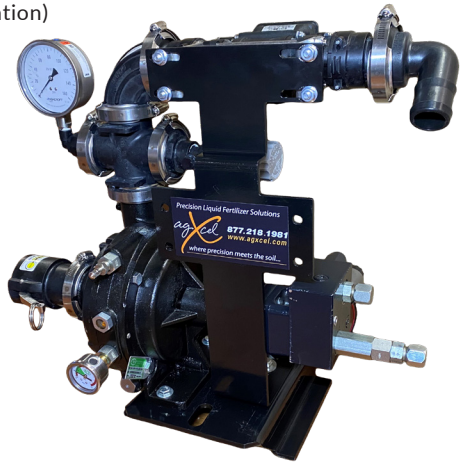
E *INFO@AGXCEL.COM*

P *877.218.1981*

W *WWW.AGXCEL.COM*

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:

- AgLeader
- Case
- John Deere
- Trimble
- Raven
- & More

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 or hydraulic pumps 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

1. Install the OEM display and Liquid Control Module per OEM instructions.
2. Open the AgXcel GX packages. Layout and familiarize yourself with the components.
3. Mount the GX5 system on your equipment.
4. Plumb the tank to the GX5. Pump kit includes a 30 mesh filter.
5. Install the manifold system. This is a GX1 chassis base bracket that have floating ball indicators. These will mount on the tool bar. Check valves should be mounted according to the mounting instructions provided and plumbing to each row unit delivery point from the floating ball indicators.
6. Attach the flow meter outlet to section valve or manifold inlet. If using section valves, attach section valve outlets to the corresponding floating ball indicator inlets.
7. Attach harnesses to the appropriate OEM liquid rate controller.
8. Setup OEM controller to manage. An AgXcel quick start is provided according to integration provided.
9. Fill system with water and conduct initial operation and tests to ensure all setting and calibrations are correct.
10. Winterize system with RV antifreeze if freezing temperatures are expected.



Look out for QR codes throughout our catalog to jump directly to our corresponding YouTube information page. Here's one! Give it a try!

AGXCEL MAGNETIC FLOWMETER OPTION

(Read Instructions Completely before Beginning Installation)

NEW

GXORION2 PLUS FLOW CHART

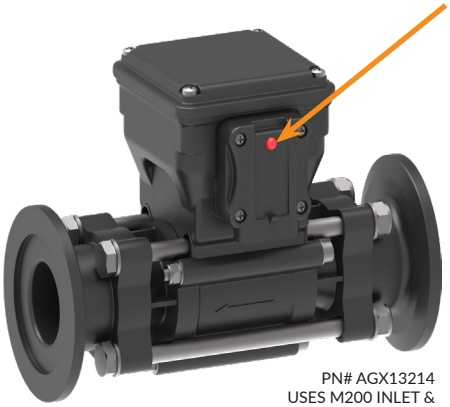
FLOW RANGE (GPM)	PULSES PER GALLON	JOHN DEERE GS2/GS3 2K LRCM		AG LEADER L1		TRIMBLE		AUTOX SPRAYMATE PLUS	
		DB8 CABLE	CAL#	DB8 CABLE	CAL#	DB8 CABLE	CAL#	DB8 CABLE	CAL#
.53 - 53	1135	NO	1135	NO	1135	NO	1135	NO	2270
2.11 - 211	284		284		284		284		568

FLOW RANGE (GPM)	PULSES PER GALLON	RAVEN RCM		AG LEADER L2		MUELLER		GX8	
		DB8 CABLE	CAL#	DB8 CABLE	CAL#	DB8 CABLE	CAL#	DB8 CABLE	CAL#
.53 - 53	1135	NO	1135	NO	1135	NO	1135	NO	2270
2.11 - 211	284		284		284		284		568

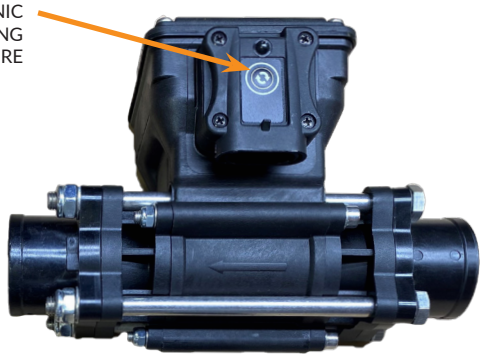
AGXCEL MAGNETIC FLOWMETER OPTION

(Read Instructions Completely before Beginning Installation)

NEW GXORION2 PLUS



PN# AGX13214
USES M200 INLET &
OUTLET FITTINGS



PN# AGX13213 HAS 1"
FNPT INLET &
OUTLET - SEE BOX BELOW
FOR FITTINGS

Features:

- Compatible with high conductivity fluids
- Output only by flowing fluid
- Parts in contact with fluid made of polypropylene and Stainless Steel 316
- Operating status LED
- Electronic cleaning of conductive deposits
- No mechanical moving parts inside the pipe
- Performances independent from fluid density and viscosity
- Low sensitivity to turbulence
- High precision
- Low maintenance

GX ORION2 PLUS MAGNETIC FLOW METER KITS		FM ONLY
KIT PN#	DESCRIPTION	PN#
AGX13213	GXORION2 PLUS KIT - (0.53 TO 53 GPM) W/BRACKET & MOUNTING HARDWARE - 1" FNPT	AGX13210
AGX13214	GXORION2 PLUS KIT - (2.11 TO 211 GPM) T5M W/BRACKET. MOUNTING HARDWARE & M200 FLANGE	AGX13211
DIVIDE BY 8 HARNESS PN# AGX38228	ORION ADAPTER HARNESS PN#AGX53671	

PN#	INLET/OUTLET ADAPTION TO 1" OR 2" FLANGE MANI-FOLD FOR .53-53GPM FLOW
AGX33132	FC100 (for M100 flange)
AGX50016	GASKET FOR FC100
AGX51338	1" MPT TO M100 FLANGE
AGX51365	M100 TO M200 ADAPTER
AGX38267	FC200 (for M200Flange)
AGX38269	GASKET FOR FC200

NEW RAVEN FM



PN# AGX13520 - OR
PN# AGX13519
USES M200 INLET &
OUTLET FITTINGS

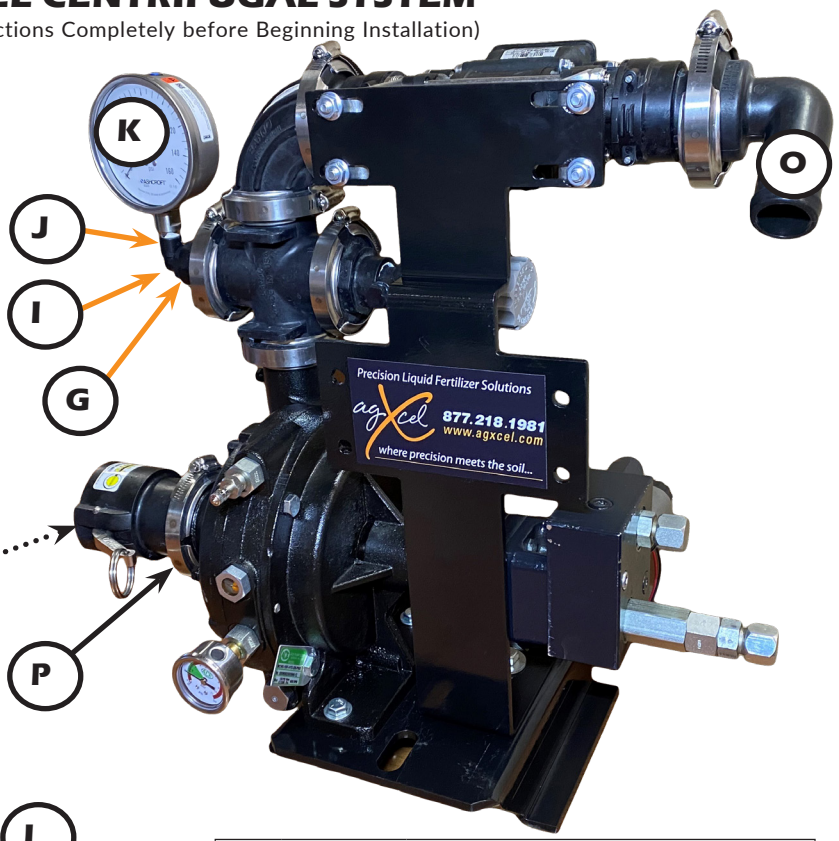
FLOW RANGE (GPM)	PULSES PER GALLON	ALL INTEGRATION		MICRO TRAK ONLY	
		DB8 CABLE	CAL#	DB8 CABLE	CAL#
15P (.5-40 GPM)	380	NO	380	NO	760
60P (2-150GPM)	130		130		260

RAVEN TURBINE FLOW METER	
FM ONLY PN#	DESCRIPTION
AGX13519	RVN_RFM15P/FLANGED HP- M200 INLET/OUTLET NORMAL (.5 - 15 GPM) MAX (.5 - 40 GPM)
AGX13520	RVN_RFM60P/FLANGED HP- M200 INLET/OUTLET NORMAL (2 - 60 GPM) MAX (2 - 150 GPM)
RAVEN ADAPTER HARNESS PN#AGX53989	

GX5

AGXCEL CENTRIFUGAL SYSTEM

(Read Instructions Completely before Beginning Installation)

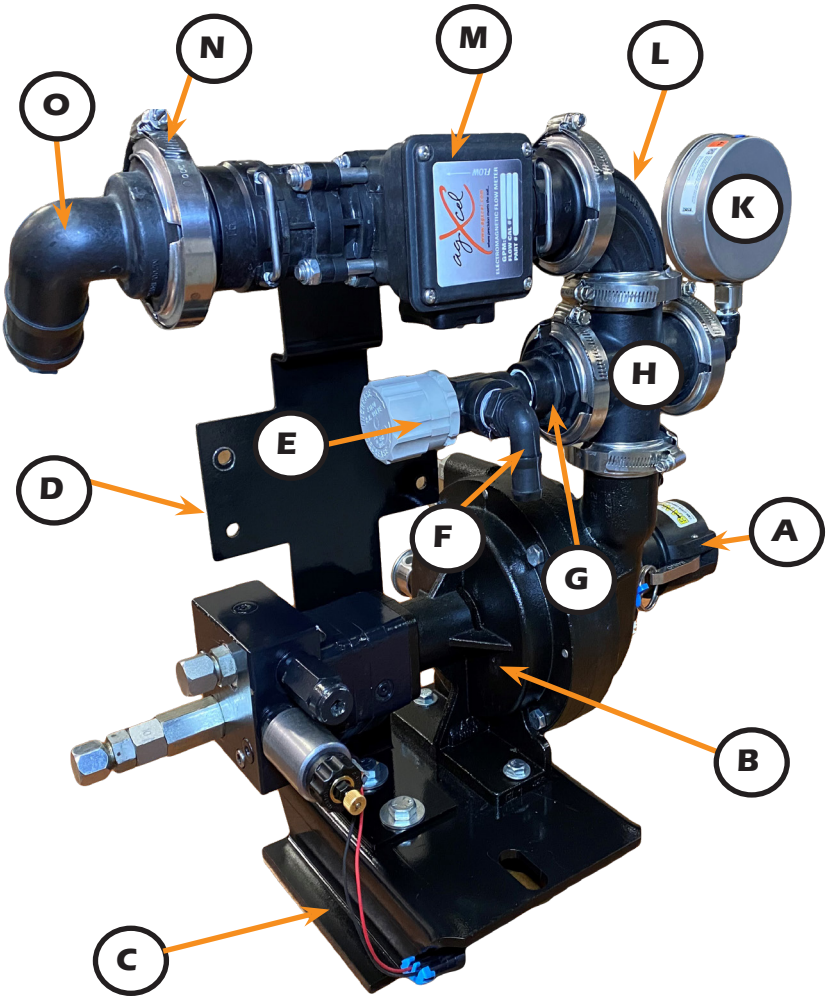


CENT 125 SERIES PN#AGX13315
CENT 155 SERIES PN#AGX13215

GX5 Hydraulically driven Centrifugal pump is a self-priming hydraulic motor driven with hydraulic PWM.

- Max fluid Temp: 140°F/60°C
- Motor: High Efficiency Close Coupled Gear Motor
- Max. motor psi: 2700
- Pump Seals: FKM/Carbon Ceramic
- Impeller: Thermoplastic with Stainless Steel hub
- Universal 200 Flange
- Wet Seal Technology

SYSTEM WILL COME WITH A 2" ST FLANGE TO 2" FP FLANGE ADAPTER- OPTIONS OF USING A COUPLER ARE AVAILABLE FOR ADDITIONAL COST.



STYLE AND/OR PLUMBING IS SUBJECT TO CHANGE WITHOUT NOTICE.

GX5 CENTRIFUGAL		
PN#		DESCRIPTION
A	AGX51417	M220200CPG - 2" STD TO 2" FP REDUCE
B	AGX13316	ACE CENT 125 PUMP/MOTOR/ PWM
	AGX13193	ACE CENT 155 PUMP/MOTOR/PWM
C	AGX39043	ACE BASE
D	AGX39044	ACE FLOW BRACKET
E	AGX39456	BYPASS
F	AGX50870	HB075-90 - 3/4" MNPT HB ELBOW
G	AGX51398	M200PLG075 - 2"FLANGE 3/4" FNPT
H	AGX51389	M200CR - 2" FLANGE CROSS
I	AGX32433	3/4" REDUCER 1/4" FNPT
J	AGX52142	SL025-90 - 1/4" MNPT TO 1/4 FNPT ELBOW
K	AGX33812	160 PSI GAUGE
L	AGX51401	M200SWP90 - 2" FLANGE SWEEP ELBOW
M	FLOW METER OPTIONS SEE PG.2	
N	AGX38267	FC200 (USES 150G)
	AGX38269	150G (NOT SHOWN)
0	SEE OUTLET OPTIONS - IF DON'T SEE WHAT NEED CONTACT A SALES TO INQUIRE	
P	AGX50804	FC220 (USES 200G)
	AGX49617	200G GASKET (NOT SHOWN)
Q	AGX51385	M200CPG - 2" FLANGE COUPLER

E INFO@AGXCEL.COM

AGXCEL LIQUID APPLICATION

OUTLET OPTIONS (TO MANIFOLD/ROWS

	PN#	DESCRIPTION
O	AGX51383	M200BRB90 - 2” FLANGE 2”HB ELBOW
	AGX32409	M200150BRB90 - 2” FLANGE 1.5” HB ELBOW
	AGX51370	M200125BRB90 - 2” FLANGE 1.25” HB ELBOW
	AGX51364	M200100BRB90 - 2” FLANGE 1” HB ELBOW
	AGX51381	M200BRB - 2” FLANGE HB STRAIGHT
	AGX51374	M200150BRB90 - 2” FLANGE 1.5” HB STRAIGHT
	AGX51369	M200125BRB90 - 2” FLANGE 1.25” HB STRAIGHT
	AGX51363	M200100BRB90 - 2” FLANGE 1” HB STRAIGHT
	AGX51382	M200BRB45 - 2” FLANGE 2”HB 45 DEG
	AGX51375	M200150BRB45 - 2” FLANGE 1.5” HB 45 DEG
A	AGX51417	M220200CPG - FLANGE REDUCER 2” STD- 2”FP **
	AGX51365	M200100CPG - FLANGE REDUCER 2” - 1”
	AGX51389	M200CR
	AGX51334	M100CR
	AGX51402	M200TEE
	AGX51366	M200100TEE
	AGX51347	M100TEE

SECTION HARNESSING

PN#		DESCRIPTION
NOT SHOWN SITUATIONAL HARNESSING	AGX53594	6 SEC BOOM HARNESS
	AGX53800	12 SEC BOOM HARNESS
	AGX54097	10FT BOOM EXTENSION
	AGX54099	30FT BOOM EXTENSION
	AGX54102	50FT BOOM EXTENSION

RAVEN SECTION VALVES

PN#		DESCRIPTION
R	AGX13261	1 SECTION MANIFOLD ONLY
	AGX13262	3 SECTION MANIFOLD ONLY
	AGX13263	5 SECTION MANIFOLD ONLY
KIT VERSIONS OF “ R“	AGX13270	1 SECTION SWATH KIT
	AGX13271	2 SECTION SWATH KIT
	AGX13272	3 SECTION SWATH KIT
	AGX13273	4 SECTION SWATH KIT
	AGX13274	5 SECTION SWATH KIT
	AGX13275	6 SECTION SWATH KIT

SECTION OUTLETS TO MANIFOLD

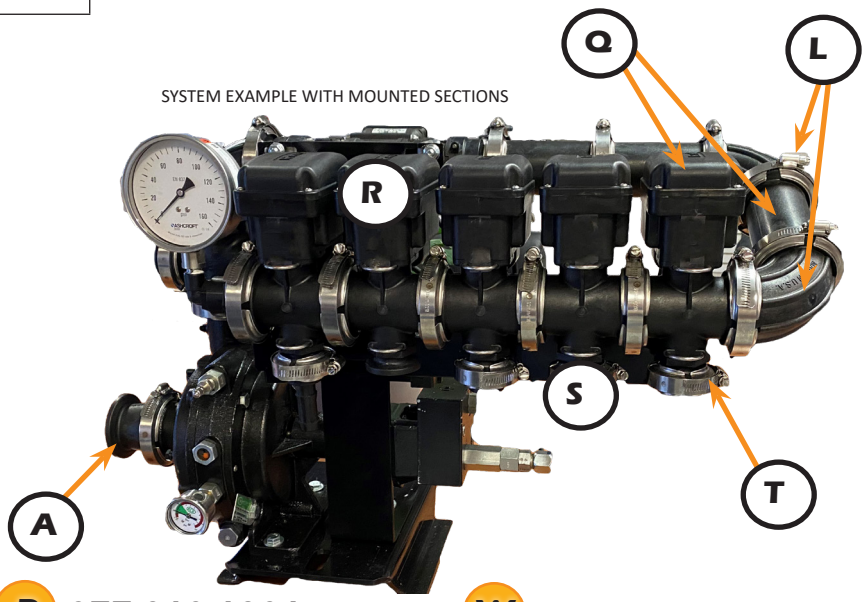
PN#		DESCRIPTION
S	AGX38254	M100075BRB90
	AGX51312	M100075BRB
	AGX51327	M100BRB45
	AGX51326	M100BRB
	AGX51328	M100BRB90
T	AGX33132	FC100 (USES 075G)
	AGX50016	075G GASKET (NOT SHOWN)

MOUNTING BRACKETS FOR SECTION VALVES

PN#		DESCRIPTION
NOT SHOWN	AGX18082	1-2 SECTION MOUNTING BRACKET
	AGX18088	3-5 SECTION MOUNTING BRACKET
	AGX18083	6 SECTION MOUNTING BRACKET
	AGX13309	SECTION MOUNTING PLATE

PLUMBING	AGX53502	1” BLK RUBBER HOSE
	AGX38424	2” SPIRAL HOSE
	AGX33132	FC100 (USES 075G)
	AGX38267	FC200 (USES 150G)
	AGX50804	FC220 (USES 200G) **
	AGX50016	75G GASKET
	AGX38269	150G GASKET
	AGX49617	200G GASKET **
	AGX51435	M220D - 2” FP FLANGE X 2” FEM COUPLER
	AGX49603	200E - 2“ MALE ADAPTER TO 2” CAM COUPLER

SYSTEM EXAMPLE WITH MOUNTED SECTIONS



ACE PRO 5 SERIES PUMPS

FMCWS-125-HYD Series OASIS WetSeal Technology High Performance Hydraulic Motor Driven Centrifugal Pump

The Pro 5 Series has the same compact, close coupled design that you have come to expect with several new features to maximize life and reliability. E-coat corrosion protection and larger bearings provide longer life. Oasis™ Wet Seal Technology prevents run dry failure and isolates seals from harsh chemicals. Interchangeability of parts within the Pro 5 Series simplifies stock and reduces inventory needed for field support.



SPECIFICATIONS

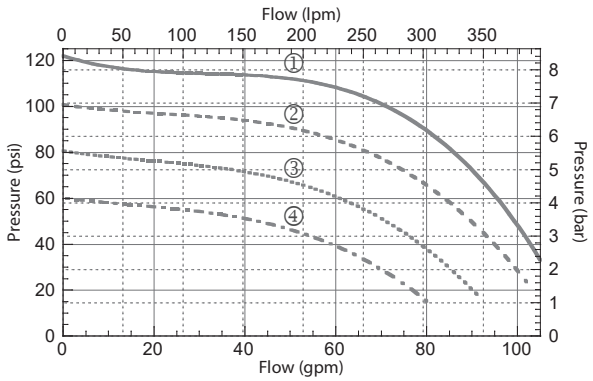
Pump Specifications		
Ports	1-1/4" x 1" NPT	
Max. Flow	92 GPM (350 LPM) for 204	110 GPM (416 LPM) for 206
Max. Pressure	120 PSI (8.3 BAR)	
Construction	E-coated Cast Iron	
Seal	Carbon ceramic / FKM	
Shaft	Stainless Steel	
Bearings	Sealed for long life	
Impeller	Thermoplastic with Stainless Steel Hub	
Wear Ring	Stainless Steel	

Motor Specifications			
Type	High Efficiency Close Coupled Gear Motor		
Seal	High Pressure Double Lip Teflon		
Internal Coasting Check	Prevents Damaging Pressure Spikes when Turned Off		
Size	-204	-206	-206 PWM
Maximum Flow	4 GPM(15.1 LPM)	7 GPM (26.5 LPM)	
Maximum Pressure	2650 PSI (180 BAR)	2700 PSI (186 BAR)	
Bypass Needle	Up to 9 GPM (34 LPM)	Up to 9 GPM (34 LPM)	Not included
Use on HYD Systems	PC, LS, and OC	PC, LS, and OC	PC & LS
External Reverse Check	✓ 1/2" FNPT	✓ 1/2" FNPT	✓ #10 SAE
Inlet Adapter / Restrictor Body 1/2" FNPT	✓	✓	×
Restrictor Insert	✓	✓	×
-206 PWM	Integrated 12V Proportional Control Valve and Pressure Relief Valve for use in Precision Applications using Pulse Width Modulated control systems.		
Case Drain (Option)	Available	Available	Not Available
Flow Limiter (Optional)	LS-204N	LS-206N	Do not use

Available Models		
	FMCWS-125-HYD-204	FMCWS-125-HYD-206
	FMCWS-125-HYD-206-PWM	

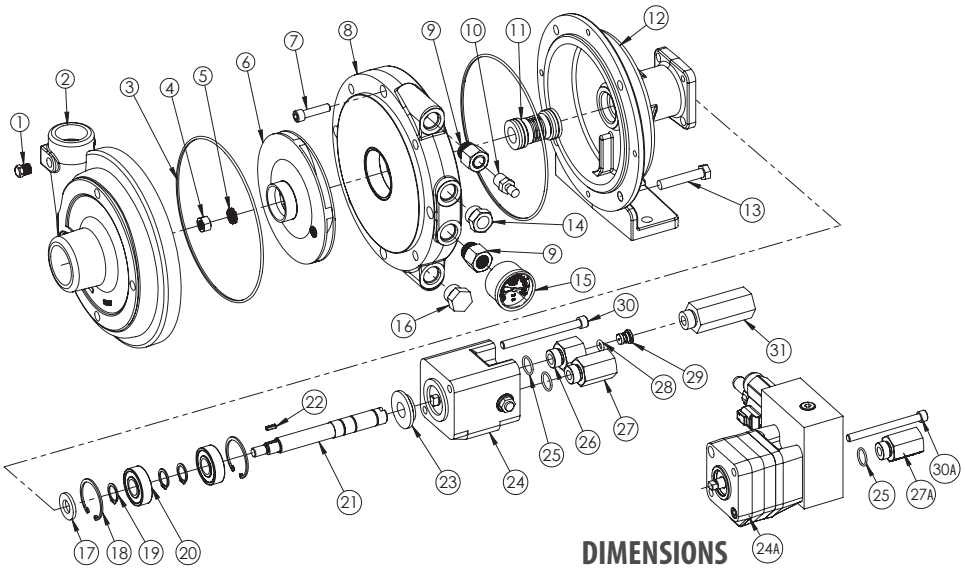
PERFORMANCE

FMCWS-125-HYD-206



CURVE	-206	
1	6.8 GPM	25.7 LPM
2	5.9 GPM	22.3 LPM
3	5.2 GPM	19.7 LPM
4	4.3 GPM	16.3 LPM

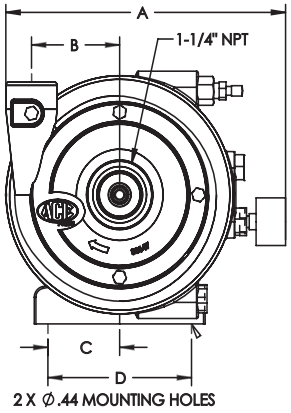


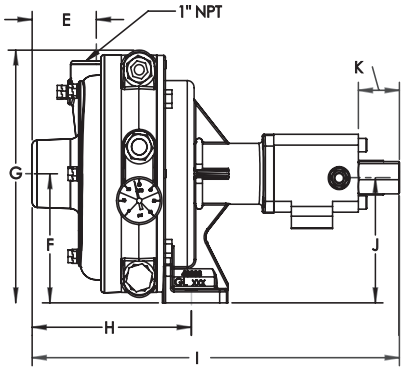


PARTS LIST

REF. #	PART NUMER	EDP #	DESCRIPTION	REQ.
1	BAC-53	41100	Pipe plug	4
1	41120	41120	Pipe plug, stainless steel (optional)	4
2	BAC-12-125	30147	Volute , 1-1/4" NPT X 1"NPT	1
3①	BAC-4-150	40015	O-ring, body seal	2
4	BAC-23-B-SS	40393	Nut, 3/8" NF, SS	1
5	BAC-24-B-SS	42702	Washer, 3/8" SS, vibration proof	1
6	BAC-26-125-P	40444	Impeller, thermoplastic, keyway	1
7	72762	72762	Bolt, 5/16" -18 x 1-1/4", socket head, SS	4
8	BAC-16	45285	Seal plate, cast iron, e-coated	1
9	41107	41107	Bushing, #8 SAE x 1/4" FNPT, with o-ring	2
10	41316	41316	Air valve, 1/4" NPT	1
11①	BAC-7-WS	40139	Seal, dual seal assembly, Type 21. 5/8" shaft	1
12	BAC-14-5-HYD	40288	Mounting frame, cast iron, e-coated	1
13	BAC-42	40970	Cap screw, 5/16"-16 x 2", hex head	4
14	55851	55851	Sight gauge, #8 SAE, with o-ring	1
15	50150	50150	Pressure gauge, 0-160 PSI, 1/4" NPT	1
16	41108	41108	Plug, #8 SAE, hex head, with o-ring	1
17	BAC-54	41130	Slinger	1
18	BACH-33	40820	Snap ring, internal, mounting frame	2
19	BACH-32-HD	40385	Snap ring, external, shaft	3
20	40880	40880	Bearing	2
21	BAC-6-125-HYD-SS-WS	41581	Shaft, .625 DIA, 125-155, SS, WS	1
22	BACH-25	40420	Key, 1/8" x 1/8" x 7/16" SS	1
23	S255	40177	Seal support spacer	1
24	BAC-75-HYD-204-PRO5	41325	Hydraulic motor, 4 GPM(includes 25-30)	1
24	BAC-75-HYD-206-PRO5	41329	Hydraulic motor, 7 GPM(includes 25-30)	1
24A	BAC-75-HYD-206-PRO5-PWM	41290	HYD motor, integrated PWM valve, 7GPM (includes 27A, 30A)	1
25	41875	41875	O-ring, #8 SAE fitting	2
26	BAC-80-8SAE	41455	Body, restrictor orifice, #8 SAE x 1/2" NPT, w/ O-ring	1
27	BAC-78-8SAE	41441	Reverse check assembly, #8 SAE x 1/2" NPT, w/ O-ring	1
27A	BAC-78-10X8SAE	41462	Reverse check assemby, #10 SAE x 8 SAE, w/ O-ring	1
28	41448	41448	O-ring, restrictor	1
29	BAC-79-5	41457	Orifice, restrictor insert (204), w/ O-ring	1
29	BAC-79-7	41456	Orifice, restrictor insert (206), w/ O-ring	1
30	41252	41252	Cap screw, 5/16"NC x 3-1/2" socket head, SS (for 204 motor)	2
30	41259	41259	Cap screw, 5/16"NC x 3-3/4" socket head, SS (for 206 motor)	2
30A	41263	41263	Cap screw, 5/16"NC x 5-1/2" socket head, SS (for 206-PWM motor)	2
31	LS-204N	41417	Flow limiting valve, #8 MSAE x 1/2" FNPT (204) (optional)	1
31	LS-206N	41418	Flow limiting valve, #8 MSAE x 1/3" FNPT (206) (optional)	1
*32①	55032	55032	Barrier fluid, quart	-
①	RK-FMCWS-PRO5	52728	Repair kit, includes items 3 (2 each), 11, and 32	-
*	RK-BAC-75-HYD-L	41374	Repair kit; 200 series hyd motor with high pressure lip seal	-

DIMENSIONS





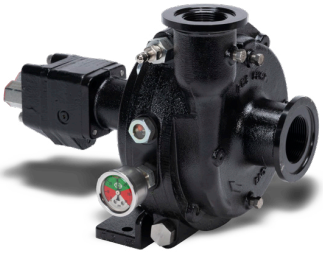
Ref.	A	B	C	D	E	F	G	H	K
Inches	10.20	3.22	2.63	5.25	2.35	3.94	8.65	6.1	1.5
MM	259.1	81.8	66.8	133.4	59.7	100.1	219.7	154.9	38.1

	-204		-206		-206-PWM	
Ref.	I	J	I	J	I	J
Inches	14.07	4.04	12.12	4.28	14.09	5.13
MM	357.4	102.6	307.8	108.7	357.9	130.3

ACE PRO 5 SERIES PUMPS

FMCWS-155F-HYD Series OASIS WetSeal Technology High Performance Hydraulic Motor Driven Centrifugal Pump

The Pro 5 Series has the same compact, close coupled design that you have come to expect with several new features to maximize life and reliability. The pump life has been enhanced with standard E-coated castings, an optional chemical resistant stainless steel wet end, and larger bearings. Oasis™ Wet Seal Technology prevents run dry failure and isolates seals from harsh chemicals. Interchangeability of parts within the Pro 5 Series simplifies stock and reduces inventory needed for field support.



155 PRO 5 SERIES

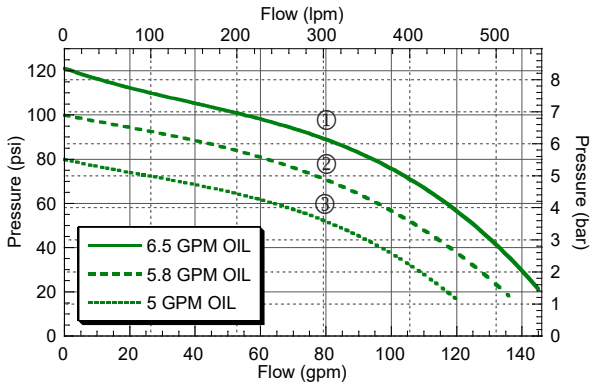
SPECIFICATIONS

Pump Specifications				
Ports	220 x 200 Flange and 1-1/2" x 1-1/4" PT			
Max. Flow	145 GPM (550 LPM) for 206		155 GPM (587 LPM) for 304	
Max. Pressure	120 PSI (8.3 BAR) for 206		130 PSI (9.0 BAR) for 304	
Construction	E-coated Cast Iron or 316 Stainless Steel (FS)			
Seal	Carbon ceramic / FKM			
Shaft	Stainless Steel			
Bearings	Sealed for long life			
Impeller	Thermoplastic with Stainless Steel Hub			
Wear Ring	Stainless Steel			
Motor Specifications				
Type	High Efficiency Close Coupled Gear Motor			
Seal	High Pressure Double Lip Teflon			
Internal Coasting Check	Prevents Damaging Pressure Spikes when Turned Off			
Size	-206	-206 PWM	-304	-304 PWM
Maximum Flow	7 GPM (26.5 LPM)		9 GPM (34 LPM)	
Maximum Pressure	2700 PSI (186 BAR)		2500 PSI (172 BAR)	
Bypass Needle	Up to 9 GPM (34 LPM)	Not included	Up to 9 GPM (34 LPM)	Not included
Use on HYD Systems	PC, LS, and OC	PC, LS	PC , LS, and OC	PC, LS
External Reverse Check	✓ 1/2" FNPT	✓ #10 SAE	✓ 1/2" FNPT	✓ #10 SAE
Inlet Adapter / Restrictor Body 1/2"FNPT	✓	×	✓	×
Restrictor Insert	✓	×	✓	×
-206 PWM	Integrated 12V Proportional Control Valve and Pressure Relief Valve for use in Precision Applications using Pulse Width Modulated control systems.			
Case Drain (Option)	Available	Not Available	Available	Not Available
Flow Limiter (Optional)	LS-206N	Do not use	LS-304N	Do not use

Available Models	
FMCWS-155F-HYD-206	FMCSC-155FS-HYD-206
FMCSC-155F-HYD-206-PWM	FMCSC-155FS-HYD-206-PWM
FMCWS-155F-HYD-304	FMCSC-155FS-HYD-304
FMCSC-155F-HYD-304-PWM	FMCSC-155FS-HYD-304-PWM

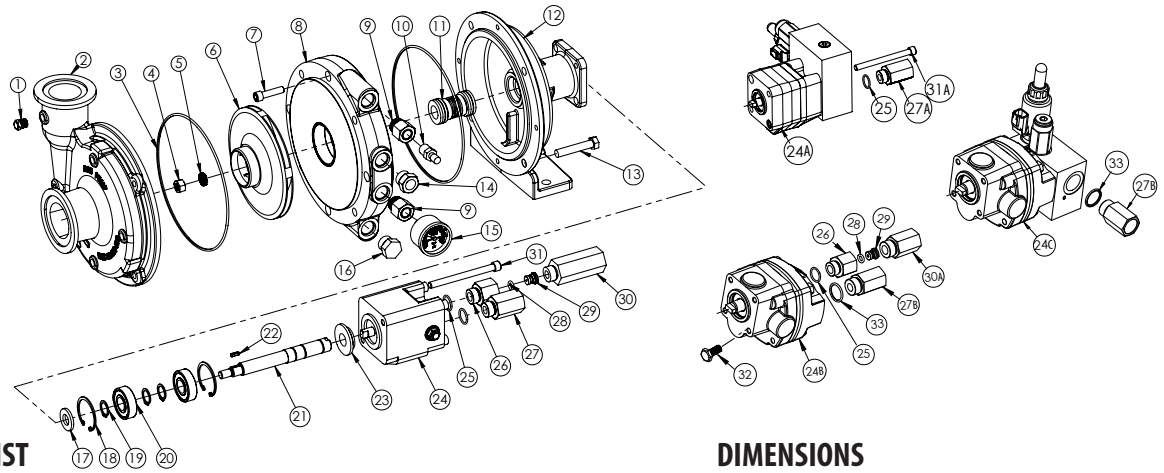
PERFORMANCE

FMCWS-155F-HYD-206



CURVE	-206	
1	6.5 GPM	24.6 LPM
2	5.8 GPM	22.0 LPM
3	5 GPM	19.0 LPM



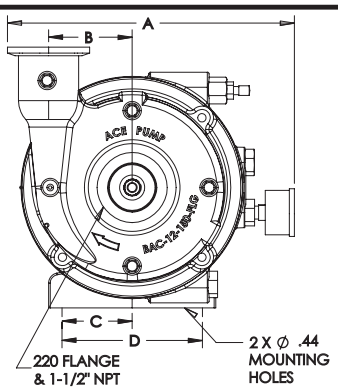


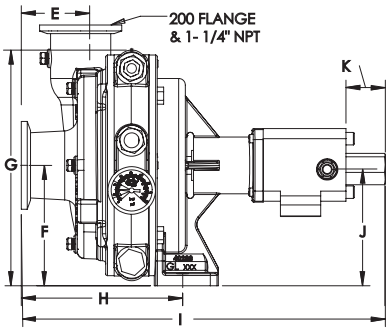
PARTS LIST

REF. #	PART NUMER	EDP #	DESCRIPTION	REQ.
1	BAC-53	41100	Pipe plug	4
1	41120	41120	Pipe plug, stainless steel (optional)	4
2A	BAC-12-150-FLG-EC	40257	Volute , cast iron, NPT and flanged, E-coated	1
2B	BAC-12-150-FLG-SS	40249	Volute , stainless steel, NPT and flanged	1
3①	BAC-4-150	40015	O-ring, body seal	2
4	BAC-23-B-SS	40393	Nut, 3/8" NF, SS	1
5	BAC-24-B-SS	42702	Washer, 3/8" SS, vibration proof	1
6	BAC-26-155-P	40453	Impeller, thermoplastic, keyway	1
7	72762	72762	Bolt, 5/16"-18 x 1-1/4", socket head, SS	4
8A	BAC-16	45285	Seal plate, cast iron, e-coated	1
8B	BAC-16-SS	45286	Seal plate, stainless steel	1
9	41107	41107	Bushing, #8 SAE x 1/4" FNPT, w/ o-ring	2
10	41316	41316	Air valve, 1/4" NPT	1
11①	BAC-7-WS	40139	Seal, dual seal assembly, Type 21, 5/8" shaft	1
12	BAC-14-5-HYD	40288	Mounting frame, cast iron, e-coated	1
13	BAC-42	40970	Cap screw, 5/16"-16 x 2", hex head	4
14	55851	55851	Sight gauge, #8 SAE, with o-ring	1
15	50150	50150	Pressure gauge, 0-160 PSI, 1/4" NPT	1
16	41108	41108	Plug, #8 SAE, hex head	1
17	BAC-54	41130	Slinger	1
18	BACH-33	40820	Snap ring, internal, mounting frame	2
19	BACH-32-HD	40385	Snap ring, external, shaft	3
20	40880	40880	Bearing	2
21	BAC-6-125-HYD-SS-WS	41581	Shaft, .625 DIA, 125-155, SS, WS	1
22	BACH-25	40420	Key, 1/8" x 1/8" x 7/16" SS	1
23	S255	40177	Seal support spacer (206)	1
23	S300	40162	Seal support spacer (304)	1
24	BAC-75-HYD-206-PRO5	41329	Hydraulic motor, 7 GPM (includes 23, 26, 27, 29, 31)	1
24A	BAC-75-HYD-206-PRO5-PWM	41290	Hydraulic motor, integrated PWM valve, 7 GPM (includes 23, 24A, 25, 27A, 31A)	1
24B	BAC-75-HYD-304	41381	Hydraulic motor, 9 GPM (includes 23, 24B, 25, 26, 27B, 28, 29)	1
24C	BAC-75-HYD-304-PWM	41348	Hydraulic motor, integrated PWM valve, 9 GPM (includes 23, 24C, 27B, 32, 33)	1
25	41875	41875	O-ring, #8 SAE fitting	2
26	BAC-80-8SAE	41455	Body, restrictor orifice, #8 SAE x 1/2"NPT, w/ O-ring	1
27	BAC-78-8SAE	41441	Reverse check assembly, #8 SAE x 1/2"NPT, w/ O-ring	1
27A	BAC-78-10X8SAE	41462	Reverse check assembly, #8 SAE x #10 SAE, w/ O-ring	1
27B	BAC-78-10X10SAE	41467	Reverse check assembly, #10 SAE x #10 SAE, w/ O-ring	1
28	41448	41448	O-ring, restrictor	1
29	BAC-79-7	41456	Orifice insert, restrictor, w/ O-ring (206) (Do not use with 206-PWM)	1
29	BAC-79-8	41447	Orifice insert, restrictor, w/ O-ring (304) (Do not use with 304-PWM)	1
30	LS-206N	41418	Flow limiting valve, #8 MSAE x 1/2" FNPT (206) (optional)	1
30A	LS-304N	41429	Flow limiting valve, #8 MSAE x 1/2" FNPT (304) (optional)	1
31	41259	41259	Cap screw, 5/16"NC x 3-3/4" socket head, SS (for 206 motor)	2
31A	41263	41263	Cap screw, 5/16"NC x 6" socket head, SS (for 206-PWM motor)	2
32	41330	41330	Cap screw, 5/16"NC x 3/4" socket head, (for 304 motor)	2
33	41445	41445	O-ring, #10 SAE	1
*34①	55032	55032	Barrier fluid, quart	-
①	RK-FMCWS-PRO5	52728	Repair kit, includes items 3 (2 each), 11, and 34	-
*	RK-BAC-75-HYD-L	41374	Repair kit; 200 series hyd motor with high pressure lip seal	-
*	RK-BAC-75-HYD-300-L	41362	Repair kit; 300 series hyd motor with high pressure lip seal	-

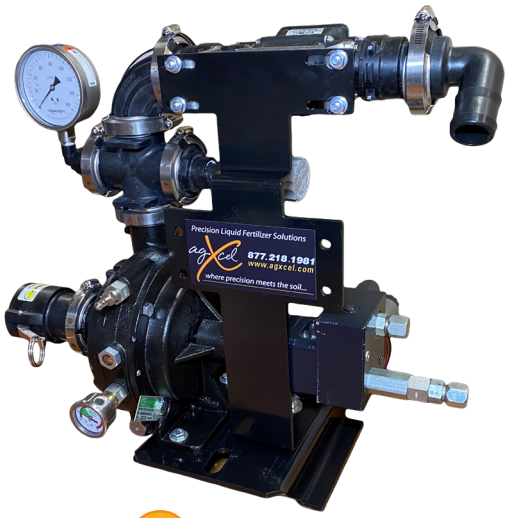
* Not shown in parts diagram

DIMENSIONS





Ref.	A	B	C	D	E	F	G	H	K
Inches	10.72	3.13	2.63	5.25	2.25	3.94	9.75	6.03	1.50
MM	272.3	79.5	66.8	133.4	57.2	100.1	247.7	153.2	38.1



GX5 RE-CIRCULATION FEATURE

(Read Instructions Completely before Beginning Installation)

ACE CENTRIFUGAL

Re-circulation Regulation valve



Bleeder Valve - A *bleeder valve* is used when the GX5 has air trapped in the system which is VERY rare. Open the valve to allow the air to release and then ensure that it is closed when GX5 is in operational mode.

APPLICATIONS

1. Recirculation 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 flowmeter 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 flowmeter. The application rate is still measured by the flow-meter and everything that passes through the flowmeter is applied to the ground. Adjust the regulation valve to set the required recirculation.

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

QR FOR FULL PARTS CATALOG

AGXCEL GXTANKTOPUMPKIT

PN# AGX53845 (GX5 TANK TO PUMP KIT)

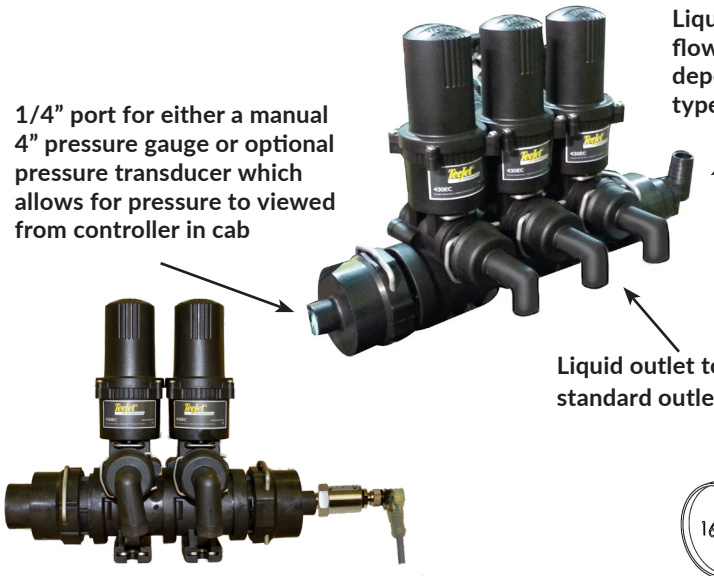
GX5 TANK TO PUMP KIT PN# 53845		
PN#	ITEM	QTY
AGX51381	BARB	2
AGX38269	GASKET	3
AGX51766	STRAINER 30 MESH	1
AGX51383	90-BARB	1
AGX38267	CLAMP	3



**** TANK KIT ****

SECTION VALVES - HOW THEY WORK

Section valves can be assembled into groups with a common inlet to control flow to each section. Common assemblies use up to 5-6 valves, however, more can be used where practical Many alternate fittings can be used to accommodate different hose sizes and configurations. The valves have a 3 pin weather pack electrical connector. This has a power, ground, and switched wire. The power measured to ground should have 12 volts when the controller is on. The switched wire will have 12 volts to turn the valve on, and 0 volts to turn the valve off.



Liquid inlet from flow meter or pump depending on system type

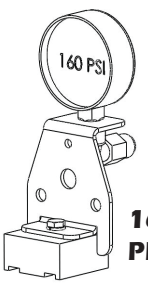
1/4" port for either a manual 4" pressure gauge or optional pressure transducer which allows for pressure to viewed from controller in cab

Liquid outlet to each section standard outlet is 3/4" barb.

PLUMBING	
AGX13398	3/8 BLK HOSE (PRECUT 50FT ROLLS)
AGX17649	SST #6 CLAMPS
AGX37619	1/2 BLK HOSE
AGX13393	3/4 BLK HOSE (PRECUT 50FT ROLLS)
AGX19646	SST #12 CLAMPS

MISC HARNESS	
AGX53594	6 SECTION BOOM HARNESS
AGX53800	12 SECTION BOOM HARNESS
AGX20031	TRANSDUCER/SECTION EXTENSION (SOLD BY THE FT)

PRESSURE TRANSDUCER KIT
PN# AGX53491
** OPTIONAL PRESSURE TRANSDUCER KIT (PN#AGX53491) AVAILABLE FOR PURCHASE IN PLACE OF THE GAUGE **



AgXcel has many different pressure gauge mounts and most all AgXcel systems have a visual pressure gauge mounted on the GX5 system

160 PSI - HYDRAULIC PUMP GAUGE KIT
PN# AGX53770

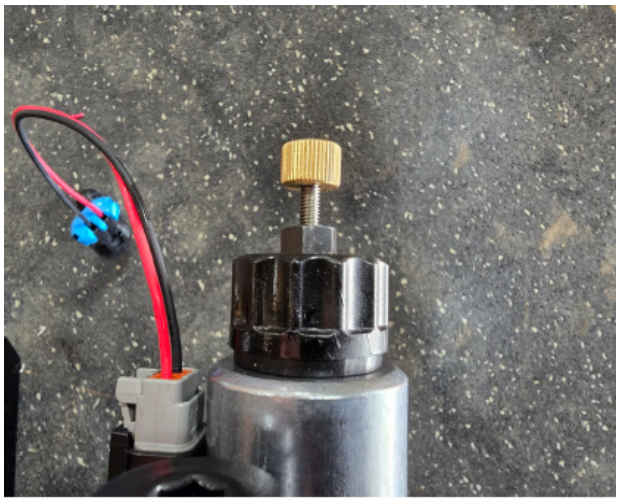
GX5 HYDRAULIC VALVE

(Read Instructions Completely before Beginning Installation)

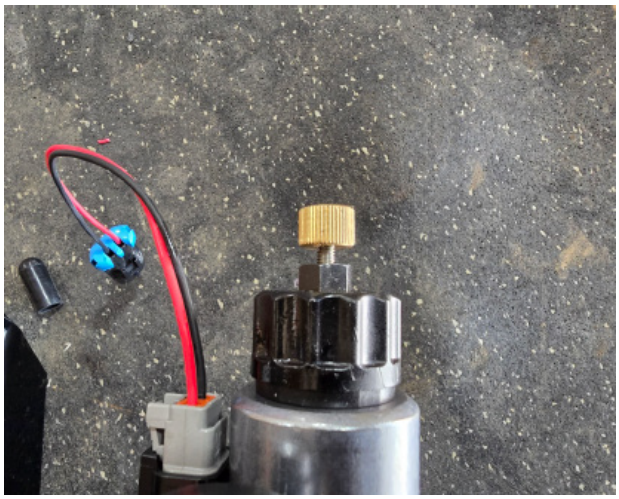
MANUAL OVERIDE INSTRUCTIONS

All Ace PWM products have a manual override function built into the valve. The override is proportional on all models except the Gemini which is on/off. This feature is useful for troubleshooting by determining if problems are due to hydraulic or electrical issues. The feature may also be used to operate the pump at a constant rate in the case of a controller failure. Remove cap and rotate knob counterclockwise to engage.

Important: The manual override on the valve must be disabled for normal PWM operation, which is clockwise for rate controller operation.



Stem is up so the pump will be controlled from your liquid controller



Stem is down so the pump is in override and will not be controlled from your liquid controller

REGULATING HYDRAULIC FLOW TO THE PUMP

WARNING: NOT SUITABLE FOR PUMPING FLAMMABLE LIQUIDS.

WARNING: FAILURE TO REGULATE OIL FLOW WILL CAUSE MOTOR FAILURE.

There are three general types of hydraulic systems: 1) Load Sensing (LS), also known as Pressure Flow Compensating Closed Center, 2) Pressure Compensating Closed Center (PC), and 3) Open Center (OPEN). The flow of hydraulic oil is regulated in a different manner for each type of hydraulic system.

- **ACE Pumps with integrated PWM valves are not intended for use with open center hydraulic systems.**
- **This ACE Pump does not have a case drain.**
- **This ACE Pump can not be used with power beyond.**

GX5 HYDRAULIC VALVE

(Read Instructions Completely before Beginning Installation)

ADJUSTING PRESSURE COMPENSATING VALVE

This procedure is only for pump assemblies using the 206-PWM hydraulic motors.

The typical indicator for this adjustment is being unable to achieve the pump's maximum shut-off pressure of 120 psi. This is typically due to some variation in the tractor's hydraulic system.

WARNING - AVOID HIGH PRESSURE FLUIDS

Escaping fluid under pressure may penetrate the skin causing serious injury. Tighten all connections before applying pressure and inspect hoses regularly for wear or damage. If an accident occurs, seek medical attention immediately. Any fluid injected into the skin must be surgically removed immediately or gangrene may result.

Avoid the hazard by relieving pressure before disconnecting hydraulic lines. Refer to tractor owners manual for the correct method to relieve hydraulic pressure from the tractor supply.

PROCEDURE:

1. Turn off oil flow to the remote and relieve pressure trapped in the circuit.

2. Remove the cap with 5/16" Allen wrench



3. Adjust valve with 3/16" Allen wrench. Turn CW to increase pressure and CCW to decrease pres-sure (1 turn = approximately 7 psi)



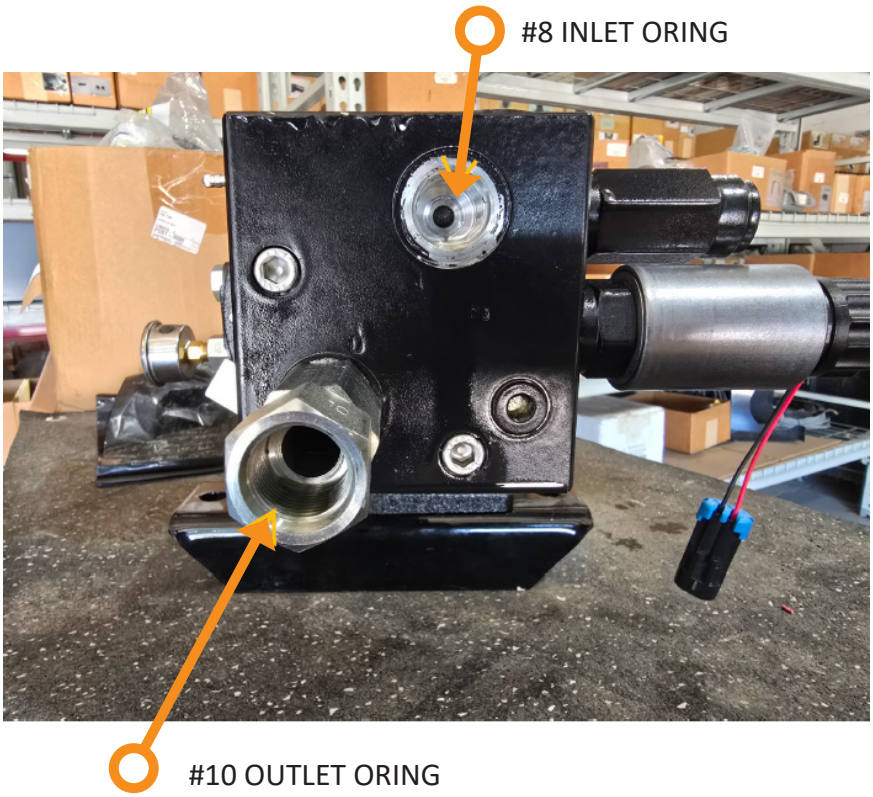
4. Replace cap and test
WARNING! DO NOT OPERATE WITHOUT CAP.

5. Repeat from step 1 as needed until pressure is achieved.

Caution: Do not exceed the maximum shut-off pressure for the pump.

GX5 HYDRAULIC CONNECTIONS

(Read Instructions Completely before Beginning Installation)



* INTERNAL CHECK VALVE INCLUDED SO THE PUMP CAN NOT BE RAN IN REVERSE.

GX5

HYDRAULIC HOSE

The pump inlet and outlet hydraulic hose must be purchased by the end user.
Recommends using 1/2" hydraulic hose with #8 inlet swivel fitting and #10 outlet swivel fitting.

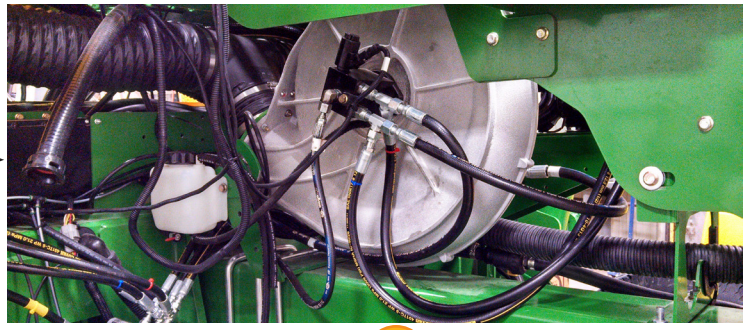
BEST OPTION - DEDICATED CIRCUIT (PREFERRED METHOD)

If you have a tractor remote available, attach the tractor remote valve directly to the pressure and return ports. DO NOT try to avoid this method simply to save another set of hydraulic hoses running to the tractor. Operating the hydraulic pump system on it's own circuit is the simplest for installation and operation. It guarantees the system won't negatively affect any other hydraulic components on your equipment.

ALTERNATE OPTION - PARALLEL BEFORE CCS BLOWER FAN

If you do not have a tractor remote valve available, this may be your best method. You can plumb AgXcel's GX5 hydraulic pump by "T"ing off the pressure line and return line before the CCS blower fan. If using this method, the PWM valve will remain closed (default position). AgXcel's GX5 series will only use very minimal amount of hydraulic oil that will not affect the CCS fan (Averaging 2-4 GPM, 7 GPM oil necessary for maximum flow). AgXcel DOES NOT recommend plumbing the hydraulic pump system in series with a vacuum fan. The vacuum fan uses just a few GPM of oil. Also, problems will be caused by excessive pressure at the vacuum fan motor.

Example of hydraulic plumbing "T" style with CCS fans →



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 anti-freeze to winterize your system by pumping an adequate amount through all components.

CHANGE PUMP OIL ANNUALLY (GX5 HYDRAULIC SYSTEMS ONLY)

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. Also check the Integration Quick start guide for further troubleshooting involving integration. If system was ordered through an Agxcel Authorized Dealer, please contact them for initial troubleshooting. If your problem remains un-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)

HYDRAULIC SYSTEM IS SURGING...

- Try raising and/or lowering your GPA/MPH
- Double check that your PWM SETTINGS are correct
- Check to see how many sections you have open/closed. You may not be able to close as many sections as you desire with the rates you are running at.
- Make sure that your filters are completely clean.
- If problem appears after a tank refill, debris from tank may have gotten into pump not allowing diaphragms to close properly.

HYDRAULIC SYSTEM WON'T TURN ON...

Make sure that your planter is DOWN

- Make sure that you have enough Hydraulic Fluid going to the Black PWM valve. Our PWM will only use as much Hydraulic Fluid as it needs.
- While you are running a NOZZLE FLOW CHECK, you can thread down and turn the gold knob on the PWM block. This will put the pump into MANUAL MODE. If your Hydraulic Pump kicks on, then you might not be getting enough hydraulic flow to your pump system.

Turn hydraulics off, go to the AgXcel PWM valve and use the manual override on top of the electric coil to manually open the valve (Manual Override DOWN = valve fully open, see image on bottom of page). Turn hydraulics on at a LOW FLOW ONLY as the valve is 100% open. Try hydraulic lever in opposite direction. Does the pump turn? If it turns the problem is electric/electronics. If the pump does not turn then the problem is hydraulics.



When the GOLD knob is threaded down, your pump system will be in by-pass mode.



When the GOLD knob is up, your pump system will be controlled by your rate controller.

SECTION VALVE(S) WILL NOT MOVE

1. **Go to Diagnostics,** Section Test to investigate this issue.
2. **In Section Test,** check and un-check the boxes. With the box checked the valve should turn on. The valve should be off with the box not checked.
3. **Do you have a problem** with 1 valve or all valves.
4. **If working with the 7-12** section harness, identify if section 1-6 or section 7-12

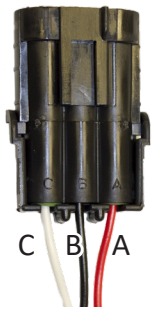
TROUBLESHOOTING

(Read Instructions Completely before Beginning Installation)

Symptom	Possible Cause	Solution
PWM signal does not adjust pump speed	Manual override is engaged	Disengage the manual override (see p. 5)
Pump runs when master switch is off	Manual override is engaged	Disengage the manual override (see p. 5)
	PWM valve type is selected in the rate controller	If agitation is not desired when the master switch is turned off select PWM Close valve type in the rate controller
Pump does not reach maximum rated shut-off pressure	Low oil flow	Increase oil flow to the remote or use tractor with higher flow capability
	Maximum PWM is set too low in controller	Increase maximum PWM value in controller
	Hydraulic hose diameter is undersized	Install properly sized hydraulic hose - see recommended hose size in your pump's operating manual
	Rate controller indicates over current warning	A signal booster or boost box may be needed for your system
	Pump is installed on a low flow remote or power beyond without adequate oil flow	Move pump to a priority remote
	Pressure compensating valve on the motor is set too low	Adjust valve setting (see p. 9)
Pump flow is surging or cycling	Valve calibration setting is too aggressive	Change valve cal to a less aggressive setting
	Oil flow too high causing relief valve to open	Reduce the oil flow to the pump
Slow response time or rate adjustment	PWM range too wide	Trim dead band by setting minimum PWM closer to application setting (see p. 5)
	Check controller settings	Contact controller manufacturer for support
	Incorrect valve calibration setting	Change valve cal to a more aggressive setting
Pump does not run when master switch is on	Tractor remote is off	Turn on the tractor remote
	Pressure and return lines are reversed	Swap the lines on the tractor
	Valve is bent or damaged	Replace valve
	Valve does not have power	Check coil with a screwdriver for magnetism
Pump does not run when master switch is on and coil is magnetized	Valve coil is not receiving adequate voltage	Check voltage with a multimeter (12 VDC required for proper operation)

TROUBLESHOOTING

(Read Instructions Completely before Beginning Installation)1



PIN	FUNCTION
A	+ 12 V Constant
B	GND
c	+ 12 V Signal

ONE VALVE DOESN'T

1.Check the harness connection to that valve. It is a 3 Pin Weather Pack connector. See image to the right.

2. **Check voltage pin A to Pin B.** Must be 12 volts, if not, go back to OEM connector and check voltage. See quick start guides for wiring diagrams, based on integration purchased.
3. **If no voltage,** contact your OEM dealer for assistance.
4. **If voltage is present on pins A&B** of 3 pin connection to valve, then check pin C to Pin B. This should be 12 volts when the valve is commanded on or open, this should be zero volts when valve is off or closed.
5. **If signal voltage is not present to** open valve, use diagrams in quick start to check pins
6. **If constant voltage (Pins A&B)** and switched voltage (Pins C&B) are present, inspect, repair or replace the valve.

ALL OR MULTIPLE VALVE(S) DON'T WORK

1. Generally, follow the same steps as for a single valve. However, concentrate on checking for constant voltage.
2. **This problem could also be related to** controller configuration. Review Implement Setup to make sure sections are correct in controller.

APPLICATION RATE FLUCTUATES

First you will need to determine if the fluctuation is caused by the controller sending sporadic signals to the valve or because of something else.

1. inspect and clean pump filters. Also check the plumbing from the supply tank to the pump. Strange flow rate fluctuating are often due to an obstruction to the pump inlet.

OR

1. Go to Section Test as shown in Initial Operation.
2. Turn the system to watch the flow in GPM on the 1,2,3 screen.
3. Is the flow steady within a very small range? For example, a fluctuation from 23 to 25 GPM would be considered normal. A fluctuation from 20 to 30 GPM is a problem. If only a small fluctuation is seen, skip to steps 4-7 and proceed to "Application Rate fluctuates in field"
4. If there is a large fluctuation observe the system flow. Is the discharge a steady stream? Are the flow indicators floating steady?
5. If visually the flow is steady but the display reports a fluctuation in GPM, inspect the flow meter.
6. If visually the flow is unsteady the flowmeter is working correctly reporting a flow problem. Is the pump turning steady or surging?
7. Look for any type of obstruction in the pump inlet. Clean the strainer. If continually plugging the strainer investigate fertilizer quality and necessary strainer size.

ELECTRIC/ELECTRONIC PROBLEM

PWM SIGNAL DIAGNOSTIC TEST

- Confirm that your manual override button is set to close (thread up the gold knob on GX5 PWM hydraulic block down and turn counter clockwise)
- Verify your hydraulics to the GX5 hydraulic pump is on
- On your controller, run a simulated nozzle flow test.
- While doing the nozzle flow check, your controller should be sending out voltage to the PWM solenoid.
- Take a metal object (like a screwdriver) and hold it next to the solenoid coil. If the controller was properly sending out this signal voltage, the PWM solenoid should create a magnetic pull which you would be able to feel by putting the metal object close to it.
- If no magnetic force is felt, disconnect the 2 pin PWM connection and check for voltage. You will need 6-12 volts to get the hydraulic valve to open.
- If 6-12 volts is not present, check harnesses and review control valve type set up.
- Go back to the OEM connector at the Liquid Rate Control Module (LRCM). Check for voltage. Refer to owner's manual for pinouts of the harnesses to test.
- If you do not get a voltage reading, ensure all connections for power and communication to the LRCM are properly connected and not damaged.
- If the problem still occurs, contact your OEM dealer for further assistance.

Limited Warranty on AgXcel Agricultural Pumps & Accessories

AgXcel agricultural products are warranted to be free of defects in material and workmanship under normal use for the time periods listed below, with proof of purchase.

- Pumps: one (1) year to the original purchaser from the date of manufacture, or one (1) year of use. This limited warranty will not exceed two (2) years, in any event.
- Accessories: ninety (90) days of use.

This limited warranty covers manufacturing defects or workmanship; that may develop under normal use and service in a manner up to the directions and usage recommended by the manufacturer.

Warranty does not apply to misuse or when pump or accessory is altered or used in excess of recommended speeds, pressures, temperatures, or handling fluids not suitable for pump or accessory material construction. Warranty does not apply to normal wear (such as but not limited to: seals/packings, valves, plungers and sealing o-rings), freight damage, freezing damage or damage caused by parts or accessories not supplied by AgXcel. All warranty considerations are governed by AgXcel's written return policy.

Liability of manufacturer for warranty is limited to repair or replacement of parts only at the option of the manufacturer when such products are found to be of original defect or workmanship at the time it was shipped from factory. This warranty is in lieu of all other warranties, expressed or implied, including any warranty of merchantability and of any and all other obligations or liabilities on the part of the manufacturers or equipment.

AgXcel's obligation under this limited warranty policy is limited to the repair or replacement of the product. All returns will be tested per Agxcel's factory criteria. Products found not defective (under the terms of this limited warranty) are subject to charges paid by the returnee for the testing and packaging of "tested good" non-warranty returns. No credit or labor allowances will be given for products returned as defective. Warranty replacement will be shipped on a freight allowed basis. Agxcel reserves the right to choose the method of transportation.

This limited warranty is in lieu of all other warranties, expressed or implied, and no other person is authorized to give any other warranty or assume obligation or liability on Agxcel's behalf. AgXcel shall not be liable for any labor, damage or other expense, nor shall AgXcel be liable for any indirect, incidental or consequential damages of any kind incurred by the reason of the use or sale of any defective product. This limited warranty covers agricultural products distributed within the United States of America. Other world market areas should consult with the actual distributor for any deviation from this document.