GXR45

AUTO BATCH LFP GAS

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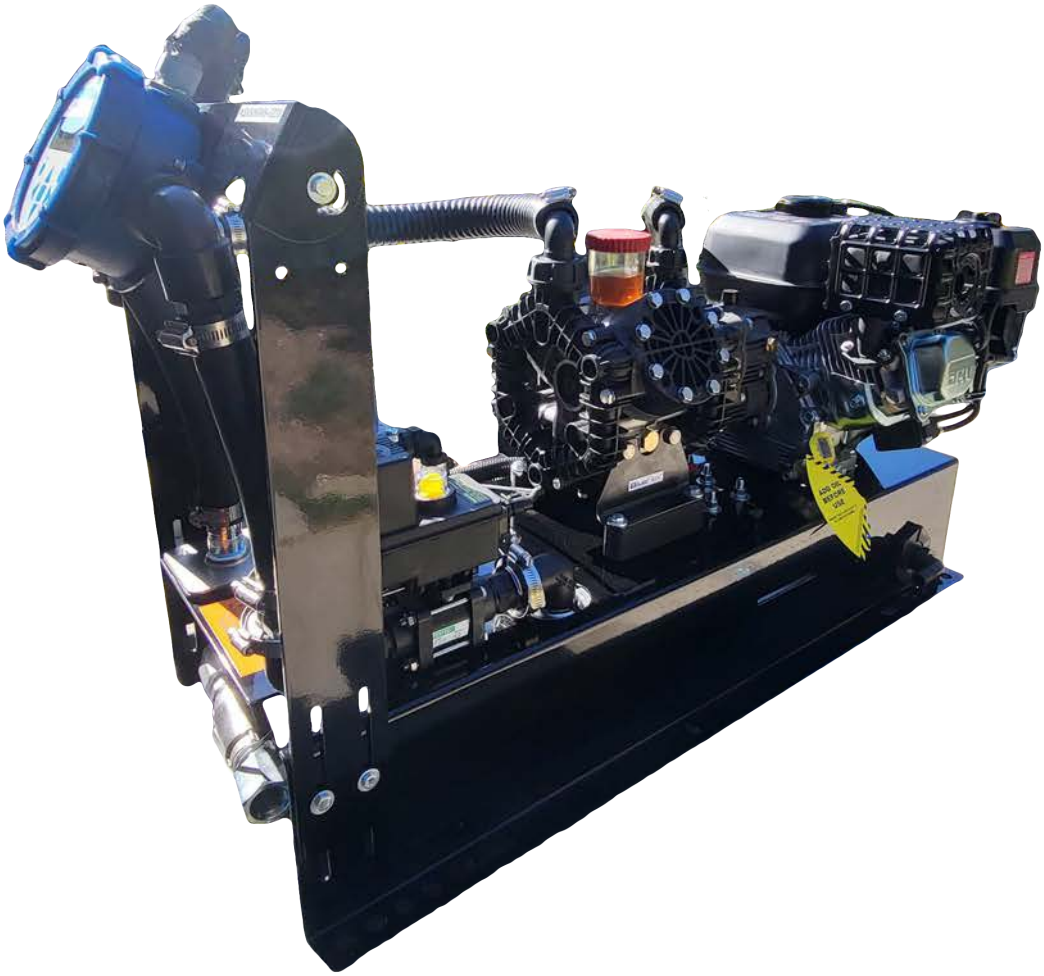

Controller Overview Video

Quickstart Video

Disclaimer

AgXcel has taken every effort to ensure the correctness of this document, to ensure the highest quality and accuracy. However, AgXcel assumes no responsibility for omissions and errors, nor is any liability assumed for damages resulting from the use of information contained within this document as there are many uncontrolled variables.
AgXcel shall not be responsible or liable for accompanying or significant reparations or a loss of expected benefits or profits, loss or delay of work, or inaccuracies of data arising out of the use, or inability to use, this system or any of its components. AgXcel shall not be held responsible for any modifications or repairs made outside our facilities, nor damages resulting from inadequate maintenance of this system.

 CAUTION 

Read this document carefully before installing, testing and using the AgXcel GXR-45 AUTOBATCH injection system.

- Follow all safety information presented within this document.
- Keep safety labels in good condition. Replace missing or damaged safety labels as necessary and verify labels are included on replacement parts or new equipment components.
- If you require assistance with any portion of the installation or service of this solution contact your local AgXcel Dealer or contact AgXcel directly.

SOME OF THE MOST IMPORTANT SAFETY PRECAUTIONS ARE INCLUDED IN THIS MANUAL. HOWEVER WE CANNOT WARN YOU OF EVERY CONCEIVABLE HAZARD THAT CAN ARISE IN OPERATION AND MAINTENANCE. ONLY YOU CAN DECIDE WHETHER OR NOT YOU SHOULD PERFORM THE GIVEN TASKS.

Chemical Handling and Safety

Chemicals used in agricultural applications may be harmful to your health or the environment if not used responsibly. Review the safe, effective, and legal use and disposal of agricultural chemicals with the chemical supplier.

- Always follow safety labels and instructions provided by the chemical manufacturer or supplier.

PRE INSTALLATION WARNINGS AND SAFETY

CAUTION – The GX50 INJECTION UNIT is capable of injecting up to 290 PSI

YOU CAN BE SERIOUSLY HURT IF YOU DO NOT FOLLOW INSTRUCTIONS

The installation of the GX50 INJECTION unit is very versatile however for the best performance please follow the best practices below.

1. **Positioning the Unit** – The GXR-45 AUTOBATCH may be placed in any location that is not a high traffic area. However, the unit must be secured, and must be positioned on level ground or plat-form. Ensure that it is not in a location where vehicles, fork lifts, or pill tanks will directly hit the unit as these could damage the outer casing of the pump or filters and hoses.

2. **Tank Feed** – When plumbing the product tote to the unit, intake hose should be no more than 30 Feet in length maximum. AgXcel Recommends keeping tote level with the Unit. This will ensure that the unit does not have to work harder to draw the chemical from the tank. Shorter Hose length will ensure easier flushing of the unit. Less chemical will be in the tank to pump line.

3. **Injection Feed** – The injection hose is 1" in diameter and 30 feet in length. The quick acting valve has a special locking clasp on the valve's operating handle, which minimizes the chance of accidental opening. This also helps to minimize the loss of product when disconnecting, by locating the seat disc in the bottom of the filler coupling.

   a. **Check Valve** - 2 1" Stainless steel check valves are installed on the discharge side of the GXR-45 injection pump. Should a check valve fail the 2nd check valve will ensure no chemical or vapors will push back into the product pump and tote.

4. **High Pressure** – The GXR-45 AUTOBATCH is a high-pressure injection unit with the ability to inject up to 290 PSI. However, AgXcel highly recommends the following precautions:

   a. **Safety Bypass Kunkle Valve -** This factory calibrated valve will open when pressures exceed 230 PSI Excess pressure and liquid will bypass back into the tote to ensure there is no loss of product nor risk of product exposure.

   b. **Diaphragm Pressure Relief Valve -** Set at 150 Psi this will keep the system at a safe pressure and still allow for injection at peak gallons per minute. Valve is calibrated before shipment. This valve is adjustable when needed in order to obtain proper injection pressure.

5. **Operating Temperatures -** This equipment has the capability of operating at a max of 180 F, and a minimum of 35 F. If Attempting to operate at lower temperatures, precautions need to be taken to ensure damage to the gas engine or pump is prevented. For help on this subject please contact AgXcel.

   Pro tip - Operating temperature refers to the temperature inside the system while powered on and performing its designating function. Ambient temperatures refer to outside air/weather. These two often differ from each other.

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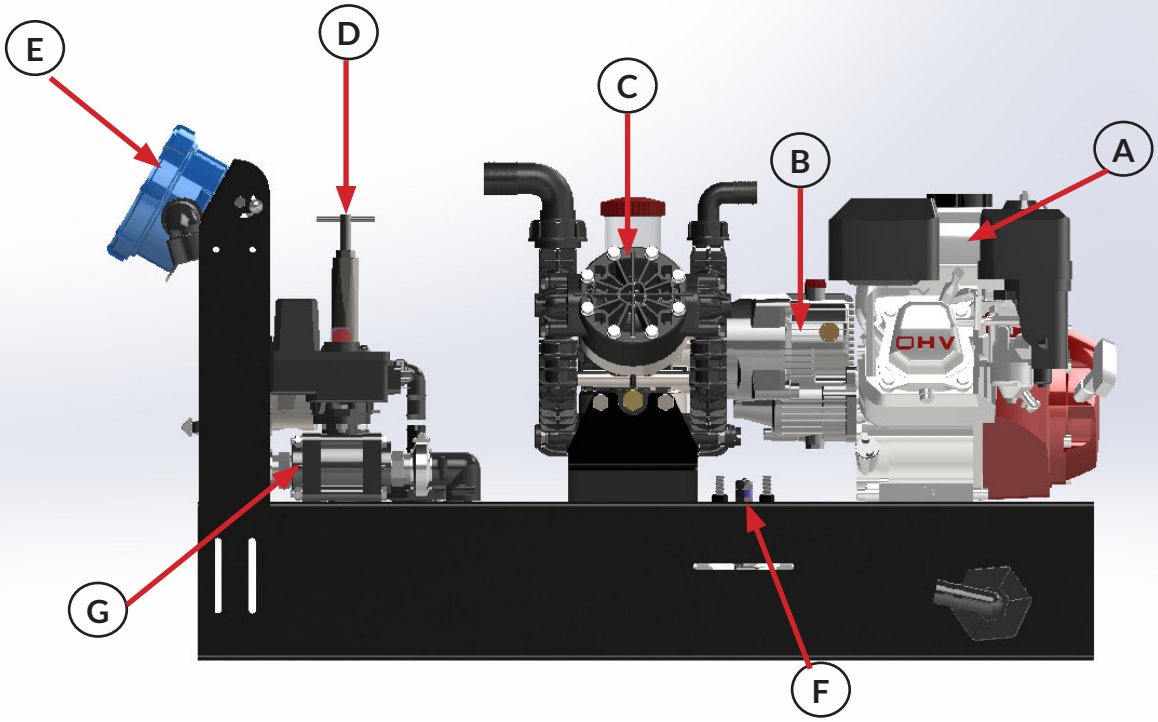
GXR-45 BREAKDOWN



GXR-45 COMPONENTS		
PART NUMBER		DESCRIPTION
A	57289	CRX 225 6HP OHV
B	56204	GEARBOX FOR LFP45
C	38380	GX5 LFP 45 .5-11 GPM - PUMP ONLY
D	56631	PRESSURE RELIEF VALVE
E	57337	AUTO BATCH CONTROLLER & FLOWMETER
F	56588	KUNKLE PRESSURE RELIEF
G	39826	ELECTRIC 3-WAY BALL VALVE

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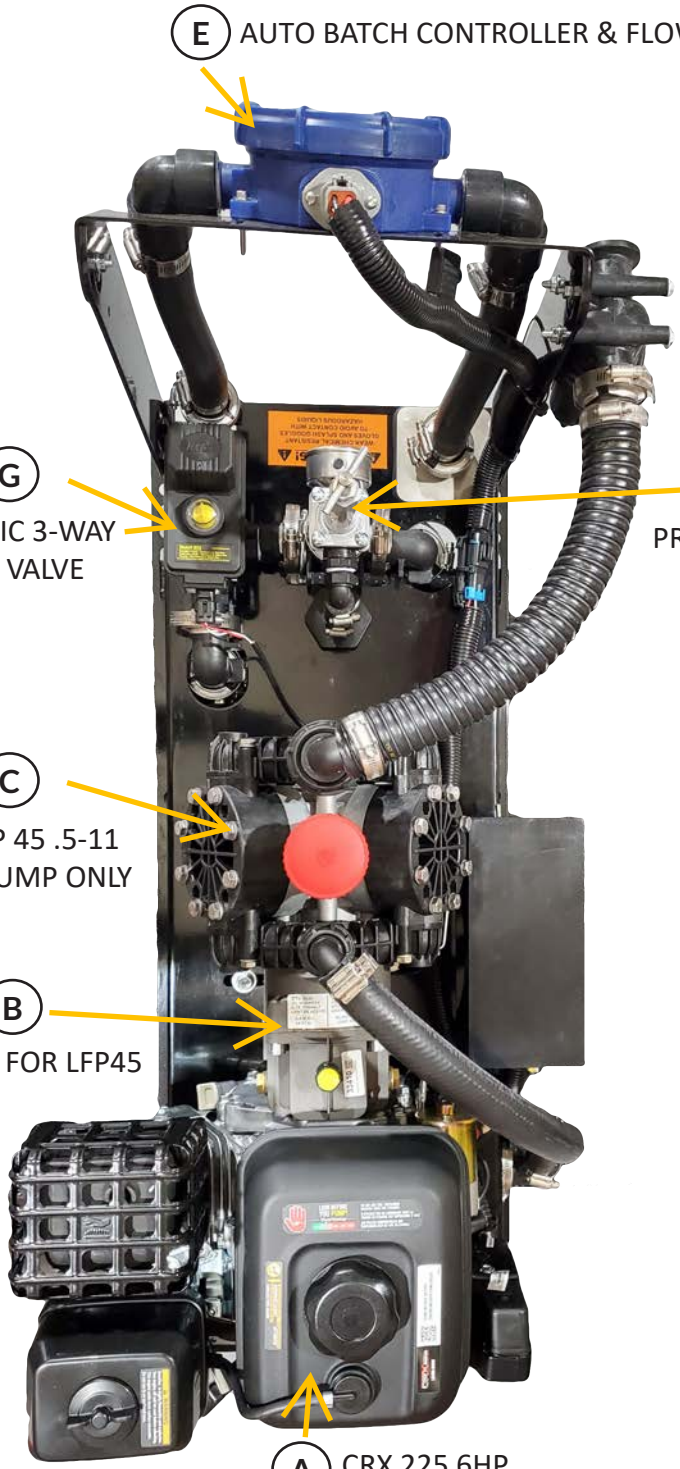
GXR-45 BREAKDOWN



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UNBOXING & SYSTEM SETUP

This section will assist you with the setup of your new GXR-45 AUTOBATCH injection unit.

During the unboxing of the GXR-45 unit, please be sure to review the packing list to make certain no items are missing.

The GXR-45 uses the CRX 225 6HP motor to drive the pump system. The motor requires regular 87 octane grade gasoline to run the system. Ensure you do not overfill the gasoline tank. (Be sure to reference included engine manual for maintenance and for troubleshooting of engine)

Located on the GXR-45 there are 3 reservoirs for oil. -

#1 - **CRX 225 Engine -** Check levels of the engine oil. Confirm level with dipstick and fill if needed. 10w-30 oil is recommended

#2 - **AR31185 Gear Reduction Box -** Takes SAE 85W - 140 Gear oil. Confirm level with dipstick and fill if needed.

#3 - **AR LFP 45 -** Requires non - detergent SAE 30 oil. Confirm level through visual guage.

After checking all fluid levels and adding gasoline into honda tank, connect enclosed anhydrous/ ammonia hose and valve to GXR-45 injection unit. Properly goop threads as to not allow any leaks from the connection.

Batch Controller - A customized 12 volt batch controller included with the system operates with the use of attached 12 volt battery.

Tote Setup - Agxcel has included a tote connection kit, this needs to be assembled and connected to product tote. Confirm that the product tote that the GXR-45 injection unit is connected to is a product that is approved for use by AgXcel.

Tote Note - most product totes have vented caps/lids. in the case of a non-vented tote, customer needs to find a way to vent so suction will not collapse tote.

Priming System - Now that every item is connected, you are now ready to start the engine and prime the line.

Important Note - For initial startup and/or after storage, it is AgXcel's recomendation to prime anhydrous valve prior to attaching to nurse tank.

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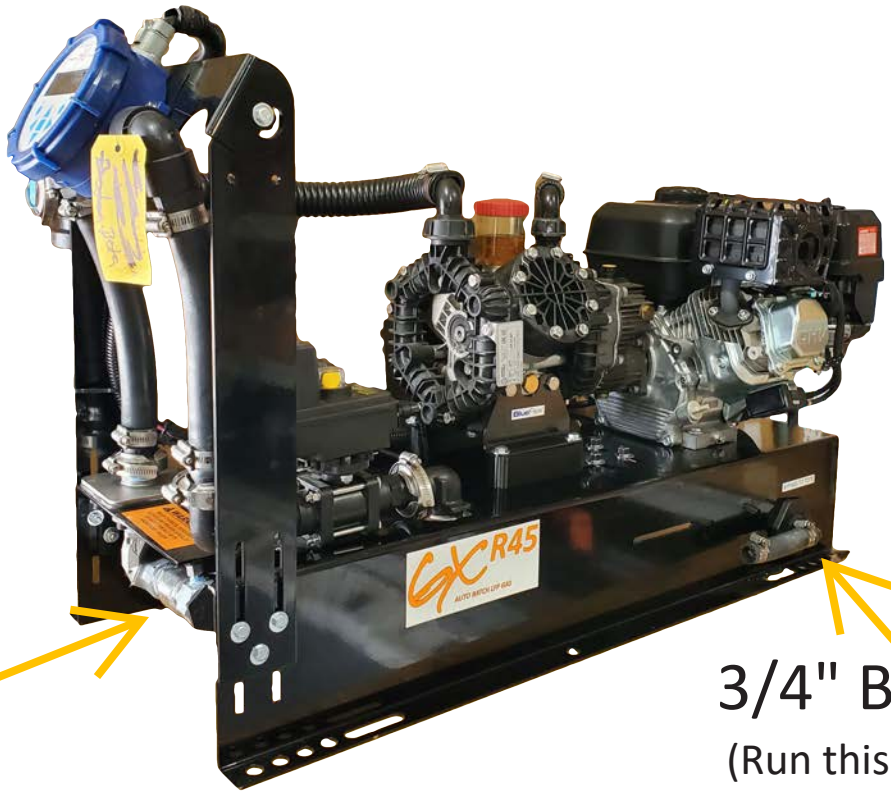
UNBOXING & SYSTEM SETUP

1" Banjo Flange Inlet

There will be a plug on the flange fitting to prevent debris from entering the filter during shipping. Remove this plug and attached the hose to this filter and the other end to your tote.



NH3 Hose Outlet

3/4" Bypass
(Run this hose back to the tank)

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UNBOXING & SYSTEM SETUP

Tote Inlet

Tote Recirculation

Outlet

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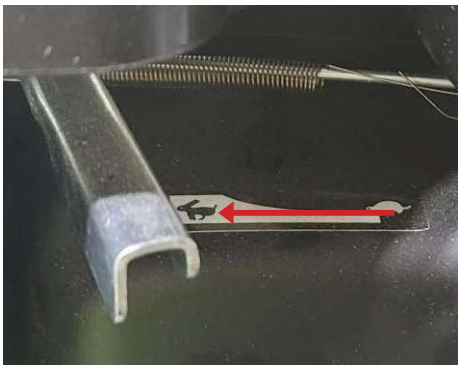
ENGINE STARTUP

1 - Be sure to follow all pre-system checks before attempting to operate engine. Shift choke to the right, and set gasoline to ON position.

2 - Position the throttle lever to the turtle. Once engine is started, move throttle to the rabbit position.



3 - Set key to the on position. When ready, turn key to start. Engine will start turning over if battery has a charge.

4 - If battery has discharged. A pull starter may be used in order to start the system and recharge the battery. Pull the started grip lightly untill you feel resistance, then pull briskly until engine starts.

5 - Once engine has been started, be sure to turn choke off and set your throttle.

CAUTION: Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.

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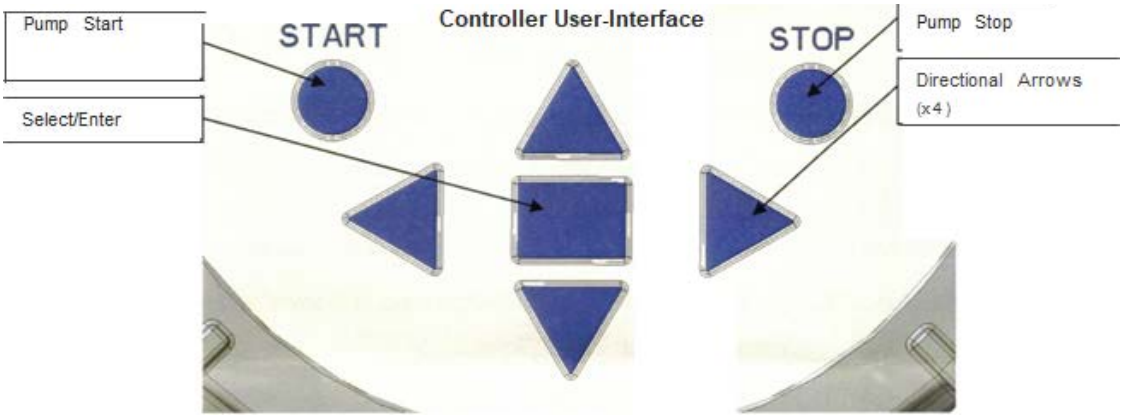
AGXCEL BATCH CONTROLLER

Specifications:

Maximum Amperage rating = 30 Amps
Max Flowrate = 55 GPM
Min Flowrate = 2 GPM
Default Duty Cycle = 100%
Default Slew Rate = 0.5 sec
Batch Controller Material = 30% Glass-Filled Polypropylene
Viton 0-Rings
Controller Accuracy = ±2.5%

1) Reference the button placement and product interface for instructions for using the 12V Batch Controller.



2) Manual
   a) On the main menu, Select "Manual"
   b) Press the "PUMP START" Button
   c) Monitor the batch controller for the amount of liquid pumped through the system
      i) Adjust Motor Duty during use by using the up/down directional arrows
   d) Once the desired amount of liquid is pumped, press the "PUMP STOP" button
   e) If needed, use the up/down directional arrows to reset the amount
3) Program
   a) On the main menu, Select "Program"
   b) Use the left/right directional arrows to toggle to the gallons section of the screen
   c) Press Up/Down directional arrows to select the number of gallons/liters to pump
   d) Press the "PUMP START" Button to start the 12 Volt Pump
   e) The Batch Controller will automatically turn off the pump once the desired amount goes through the system

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AGXCEL BATCH CONTROLLER

4) Calibration

a) Confirm you have an accurately marked level/line/etc . to calibrate too

b) Use the left/right directional arrows to toggle to the gallon numbers on the right side of the display

c) Press up/down directional arrows to select the amount (gallons/liters) to calibrate too

d) Toggle back to "Start" on the display screen with the left/right directional arrows and press the "PUMP START" button

e) Press the "PUMP STOP" Button when the desired amount of liquid is in the tank

f) Select "Save" then "Exit" on the display. Now the calibration amount is saved and ready to use

5) Settings

a) Within the settings menu, you can change/view the following information (Use the directional arrows and Select/Enter buttons to navigate the settings menus):

i)Product information

ii) Change units

iii) Motor Settings

(1) Motor Frequency

(2) Duty Cycle

(3) Slew Rate

iv)Manually change the Calibration Factor v)

Reset to factory settings

vi) Set Screen Shutdown time

6 - Once gas engine is running (WITH DIGITAL METER CALIBRATED) attach anhydrous valve to nurse tank. Once attached, open anhydrous valve.

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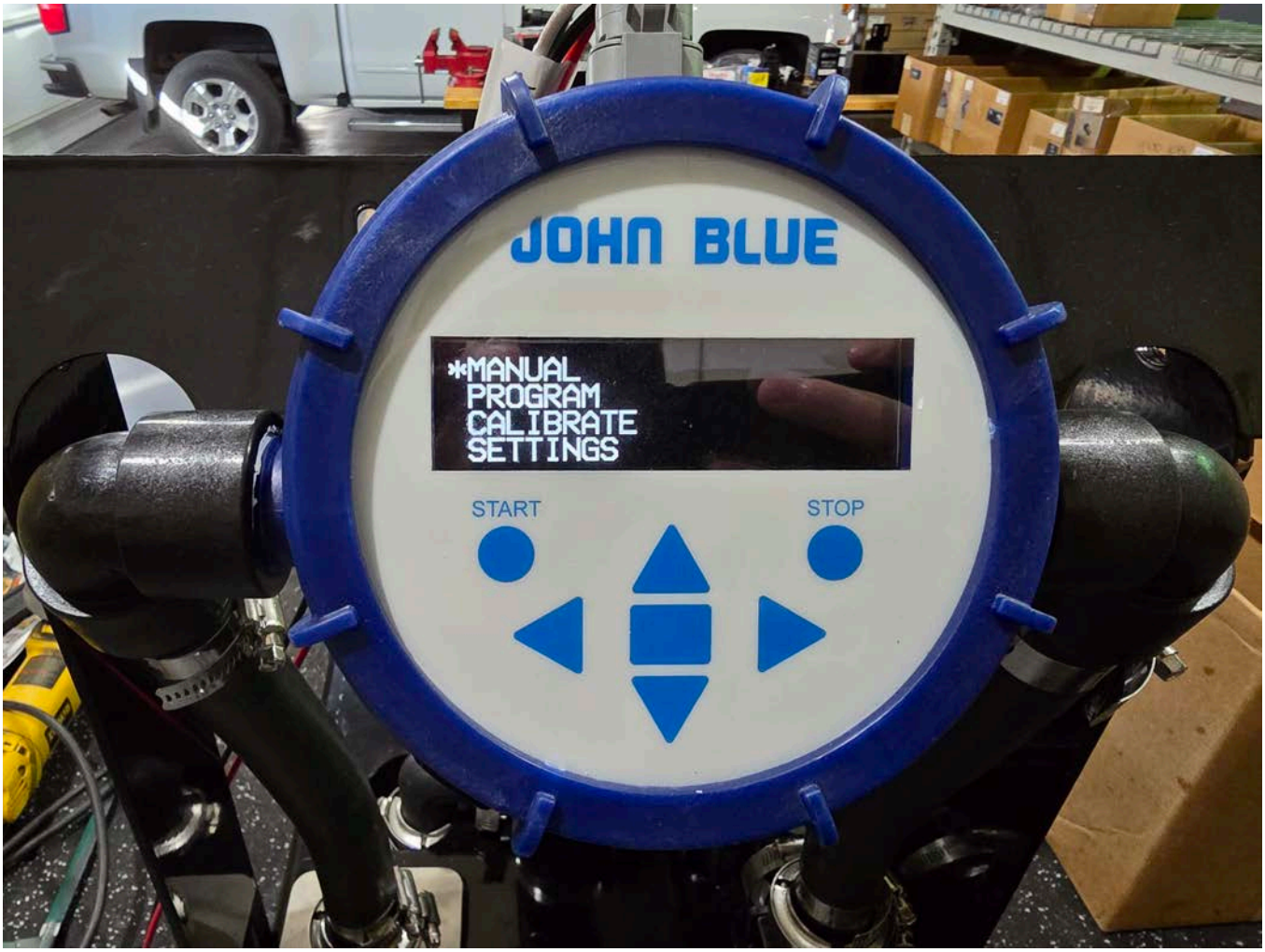
AGXCEL BATCH CONTROLLER



When the flowmeter is first powered on, you will be brought to the home page. From here you are presented with four options. Manual, Program, Calibrate, & Settings. These options do the following...

Manual

- Allows the GXR45 pump to continuously pump liquid to the nurse tank when started until operator presses stop to then recirculate liquid back to the tote.

Program

- Allows the operator to enter a desired target application. Once the ball valve turns to push liquid to the nurse tank and the target has been achieved, the ball valve will then turn again and the pump will then recirculate liquid back to the tote instead of sending liquid to the nurse tank.

Calibrate

- Here is where the operator will do a catch test. This is to tell the flowmeter how many pulses is equal to one gallon of liquid.

Settings

- This will not need to be used by the operator unless if instructed to do so by AgXcel.

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AGXCEL BATCH CONTROLLER

Manual

On the Manual page is one of two ways that the operator can control the direction of flow. When the application has not been started, the pump will be pushing liquid to the tote through the recirculation hose since the ball valve has not been turned. Once the operator selects START on the screen and presses the START button on the flowmeter, the ball valve will then turn to allow liquid to flow to the hose that will connect to the nurse tank. The user will then have to watch the GALLONS PUMPED on the screen. Once the desired amount of liquid has been pumped into the nurse tank, the operator then has to press the STOP button on the controller. This will turn the ball valve back to the previous position and liquid will start to flow back through the recirculation hose. To go back to the home page, scroll down to EXIT and press the large blue square in the center of the arrows to select EXIT. There will be a * symbol next to the option that will be selected.

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AGXCEL BATCH CONTROLLER

PROGRAM

The Program page is the second way of controlling flow with the GXR45. The Program option is very similar to the Manual option except for the operator is able to enter a desired target. Once the target has been achieved, the ball valve will then turn and recirculate flow back to the tote.

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AGXCEL BATCH CONTROLLER

To enter a target gallon amount to be injected into the nurse tank, press the right arrow button to move the * selector. The * will disappear when when a digit is selected. Instead you will see the digit that is selected will be smaller that the others. In this photo, the third digit to the left is selected. Once selected, you can press the up or down digit to change the number. Once your desired target is entered, move back to the START option on the left side using the left arrow key. Once the * is next to START, you will then need to press the START button on the flowmeter to turn the ball valve to allow flow to go to the nurse tank instead of recirculating back to the tote. Pressing the center square when the * is next to START will not turn the ball valve. Once the target has been achieved, the ball valve will then automatically turn to redirect flow back through the recirculation hose to the tote. To go back to the home page, scroll down to EXIT and press the large blue square in the center of the arrows to select EXIT. There will be a * symbol next to the option that will be selected.

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AGXCEL BATCH CONTROLLER

Calibrate

Here is where the operator will do a catch test. This is to tell the flowmeter how many pulses is equal to one gallon of liquid. To do this, you will need a bucket that can measure one gallon. Two people are preferred for calibrating. One user will control the flowmeter, the other will monitor the liquid in the bucket. Once the user has the outlet NH3 hose in the bucket, the operator at the controller can then press START on the flowmeter. The operator must wait for the user at the bucket to tell him to stop the pump once one gallon has been achieved. To stop the flow, press the STOP button on the flowmeter. Note the number of the COUNT on the screen. The flowmeter only knows to look for one gallon, and you have to tell the flowmeter what count (or pulses) is equal to one gallon. If the user at the bucket did not catch one gallon, you will have to scroll down to RESET and press the center square to reset the count. You can then scroll back up to START. The lower the count, the less amount of liquid will be caught. The higher the count, the more liquid that will be caught. Once you have caught one gallon, scroll down to SAVE and press the center square to save the count. To go back to the home page, scroll down to EXIT and press the large blue square in the center of the arrows to select EXIT. There will be a * symbol next to the option that will be selected.

Controller Overview Video

Quickstart Video

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TROUBLESHOOTING

POSSBILE CAUSE	CORRECTION
FUEL VALVE LEVER OFF	MOVE LEVER TO ON POSITION
CHOKE OPEN	MOVE LEVER TO CLOSED POSITION UNLESS ENGINE IS WARM
ENGINE SWITCH OFF	TURN ENGINE SWITCH ON
OUT OF FUEL	REFUEL
BAD FUEL; ENGINE STORED WITHOUT TREATING OR DRAINING GASOLINE, OR REFUELED WITH BAD GASOLINE.	DRAIN FUEL TANK AND CARBURATOR *SEE HONDA GX200 MANUAL FOR FURTHER INSTRUCTIONS
SPARK PLUG FAULTY, FOULED, OR IMPROPERLY GAPPED	GAP OR REPLACE SPARK PLUG
SPARK PLUG WET WITH FUEL (FLOODED ENGINE)	DRY AND REINSTALL SPARK PLUG. START ENGINE WITH THROTTLE LEVER IN MAX POSITION.
FUEL FILTER RESTRICTED, CARBURETOR MALFUNCTION, IGNITION MALFUNCTION, VALVES STUCK, ETC.	TAKE ENGINE TO YOUR SERVICING DEALER

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BATCH CONTROLLER TROUBLESHOOTING

POSSBILE CAUSE	SOLUTION
Display reads "No Flow detected" once starting batch controller.	Check for closed valves, or blockages.
Batch Controller not accurate	Recalibrate the batch controller. System attributes could affect the calibration. Weather also possible cause.
Controller Overheating Warning	Call AgXcel
Controller Buttons not Working	Call AgXcel
No information readout on display	Call AgXcel
Controller Impeller Housing Leaking	Replace O-rings

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AR45 LFP TROUBLESHOOTING

POSSBILE CAUSE	SOLUTION
PUMP DOES NOT PRIME PROPERLY	INTAKE CIRCUIT NOT AIRTIGHT - TIGHTEN, REPAIR OR REPLACE HOSES AND FITTINGS AS NECESSARY
PRESSURE GAUGE NEEDLE WOBBLES	INTAKE CIRCUIT IS NOT AIRTIGHT RESIDUAL AIR IN PUMP

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MAINTENANCE

GOOD MAINTENANCE IS ESSENTIAL FOR SAFE, AND TROUBLE FREE OPERATION. FOR MORE IN-DEPTH MAINTENANCE SCHEDULE PLEASE SEE ALL INCLUDED MANUALS PROVIDED WITH SYSTEM.

CRX225 SERIES ENGINE

Maintenance Schedule

Follow the service intervals indicated in the chart below. Your engine may need to be serviced more frequently when operating in adverse conditions, such as excessive dust or airborne debris, high moisture, high vibrations, or intense heat or sunlight.

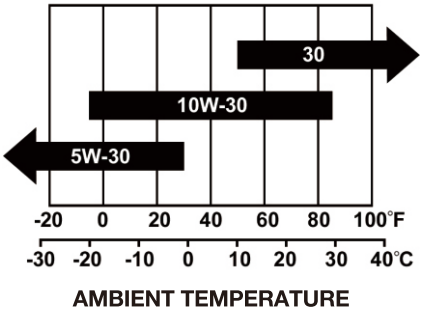
		Each time before use	The first month or 10 hours[Note 2]	Every three months or 50 hours[Note 2]	Every six months or 100 hours[Note 2]	Every year or 300 hours[Note 2]
Engine oil	Inspection	√				
	Replacement		√		√	
Air cleaner	Inspection	√				
	Cleaning			√[Note 3]		
Spark plug	Inspection and adjustment				√	
	Replacement					√
Spark arrester[Note 1]	Cleaning				√	
Idle speed	Inspection and adjustment					√[Note 4]
Valve clearance	Inspection and adjustment					√[Note 4]
Carbon canister[Note 1]	Inspection	Every two years[Note 4]				
Carbon canister tube[Note 1]	Inspection	Every two years[Note 4]				
Evaporative oil breather tube	Inspection	Every two years[Note 4]				

Note 1: Replace if damaged.
Note 2: Before each season and after then (whichever comes first).
Note 3: Service more frequently under severe, dusty, dirty conditions.
Note 4: To be performed by knowledgeable, experienced owners or the authorized dealer.

General Maintenance

Engine Oil

SAE 10W-30 is recommended for general, all-temperature use. Other viscosities shown in the chart may be used when the average temperature in your area is within the indicated range.



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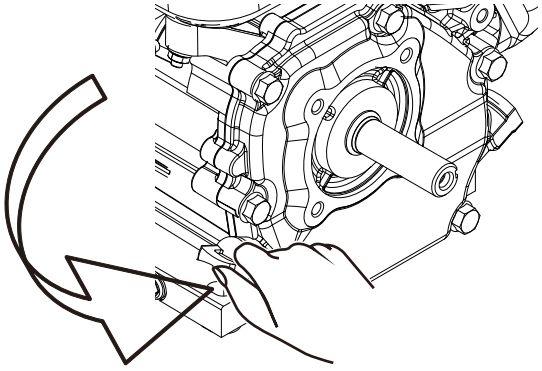
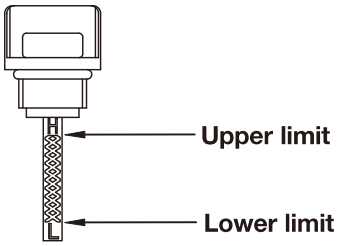
Add Oil

1. Place the engine on a level surface.
2. Remove the dipstick and wipe it clean.



Remove dipstick

3. Add recommended oil to the upper limit.



Dipstick

4. Fully tighten the dipstick.

Change Oil

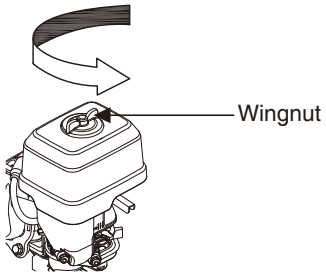
⚠CAUTION:
Change oil when the engine is warm from operation.

1. Place the engine on a level surface.
2. Clean area around dipstick and drain plug.
3. Remove oil dipstick.
4. Remove the oil drain plug and allow the oil to drain completely.
5. Reinstall and fully tighten the drain plug.
6. See **SPECIFICATIONS** (Page 10) for rated oil; fill to the upper limit. Reinstall and fully tighten the dipstick.
7. Dispose of used oil at an approved waste management facility.

⚠WARNING:
The engine is not filled with oil at the factory. Any operation before it has been properly filled with the recommended type and amount of oil may result in engine damage and void your warranty.

Air Filter

1. Unscrew the wingnut. Remove the air filter cover.



Remove air filter cover

2. Remove the filter element.
3. Clear away internal dirt and debris.
4. Replace the filter.
5. Reinstall the air cover filter, tighten the wingnut.

⚠WARNING:
DO NOT run the engine without the air filter. Serious damage to the engine can result without the air filter.

TROUBLE ANALYSIS AND TROUBLESHOOTING

Phenomenon	Problems	Solutions
Engine cannot be started.	The OFF/ON switch is in the **OFF** position	Set the OFF/ON switch to the **ON** position.
	There is no fuel.	Fill tank per instructions in this manual.
	Inadequate engine oil.	Check oil level. The engine cannot be started unless the oil level is above the prescribed lower limit.
	There is no ignition.	Using an external spark tester, assure that the cylinder has proper spark. If the spark is weak or missing altogether, contact your local authorized service dealer.

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Idle Speed

The idle speed has been pre-set at the factory and should rarely require readjustment.

⚠WARNING:

Improper adjustment of idle speed will damage your engine and void your warranty

Adjustment

Except as described in this Manual, there is no additional maintenance or adjustment required for your engine.

Improper adjustments or tampering can damage your engine and your equipment and will void your warranty.

⚠WARNING:

Tampering with the factory set governor will damage your engine and void your warranty.

If your engine is not working properly or if there are parts missing or broken, please DO NOT RETURN IT TO THE PLACE OF PURCHASE. Contact our Customer Service Department at 1-877-362-4271 or cservice@fna-group.com

STORAGE

Follow the instructions below for longer term storage if the engine will be out of service for 30 days or more.

⚠DANGER:

FIRE OR EXPLOSION

Gasoline is highly flammable and extremely explosive..

Empty the fuel tank before storing or transporting the engine.

1. Change the oil while engine is still warm from operation.
2. Then allow the engine to cool completely.
3. Drain all fuel completely from the fuel tank, fuel hose and carburetor.
4. Remove spark plug and pour about 1 oz. of engine oil into cylinder. Reinstall spark plug. Crank engine slowly to distribute oil and lubricate cylinder.
5. Clean the engine according to the instructions in the Maintenance section.
6. Store the unit in a clean, dry area out of direct sunlight.

AR 45 LFP SERIES LIQUID PUMP

Make sure the pump is depressurised before any maintenance occurs.

Filter - Inspect filter cartridge; Check and make sure it is free of debris, and in good condition

Pump Oil - Maintain oil level. Visual gauge will indicate the level of oil for the pump. Be sure to use Non-Detergent SAE 30 oil.

Pump - Inspect mounting of pump, fittings & bolts need to remain tight.

Leaks - If leaks start to occur, check and tighten up fittings.