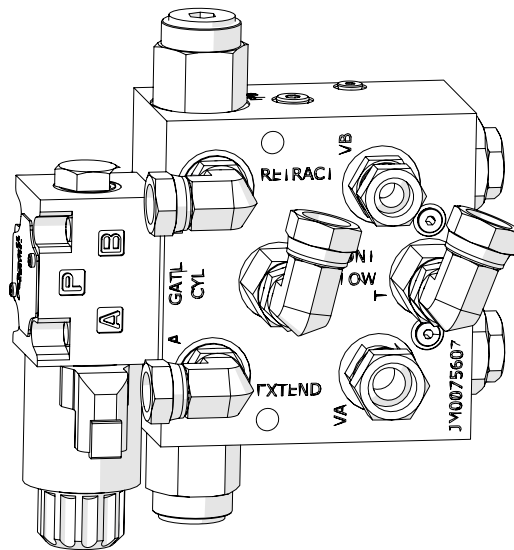




Manual

Auto Gate Shut Off INSTALLATION MANUAL

IFM-GS-3
560AGS-3



Gate Mode 2 (End Pulse)

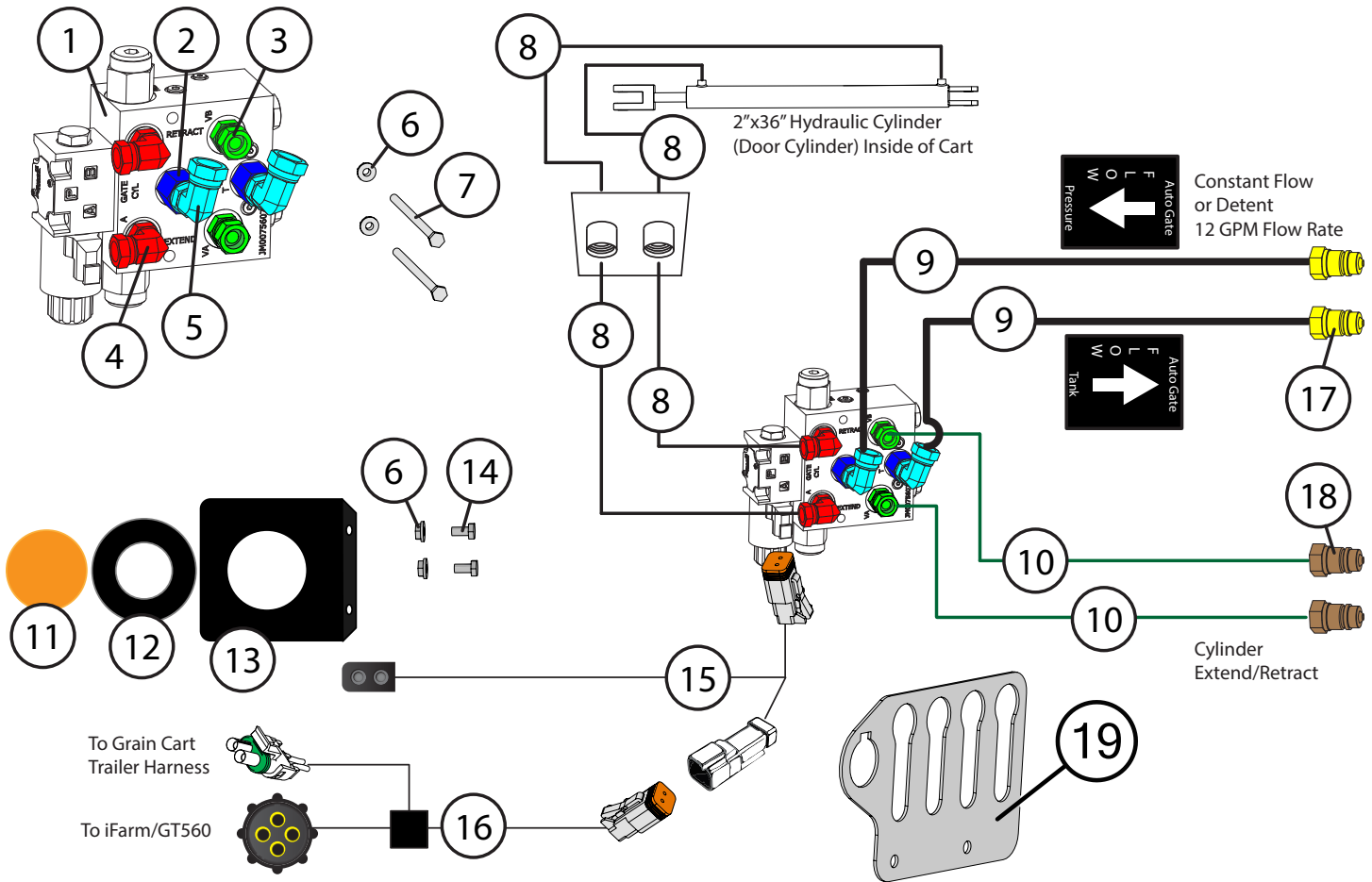
Rev. 8.22.2023

J&M Manufacturing Co, Inc

284 Railroad Street - P.O. Box 547 | Fort Recovery, OH 45846 | Ph: (419) 375-2376 | Fax: (419) 375-2708

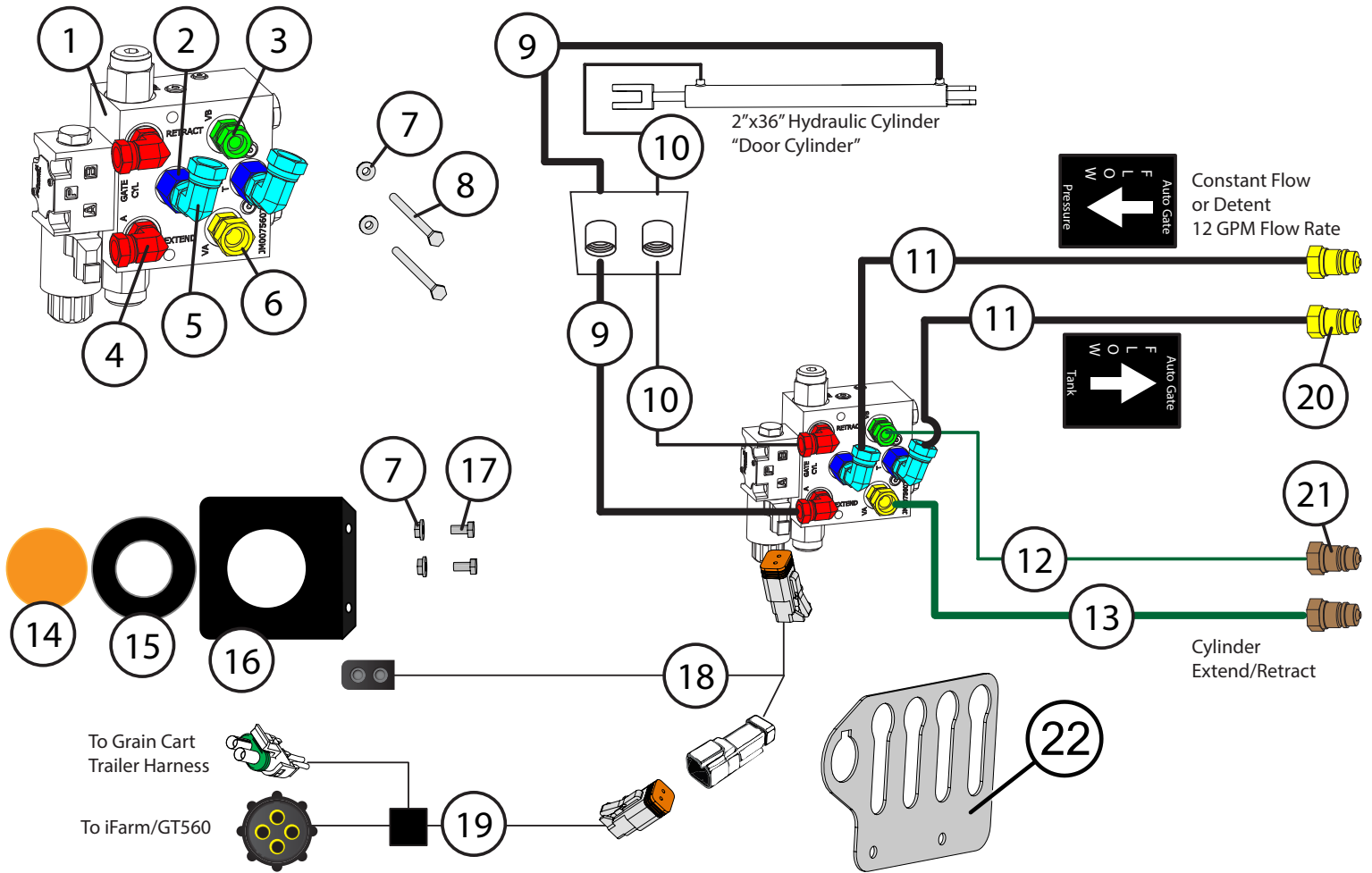
www.jm-inc.com

812 Auto-Gate



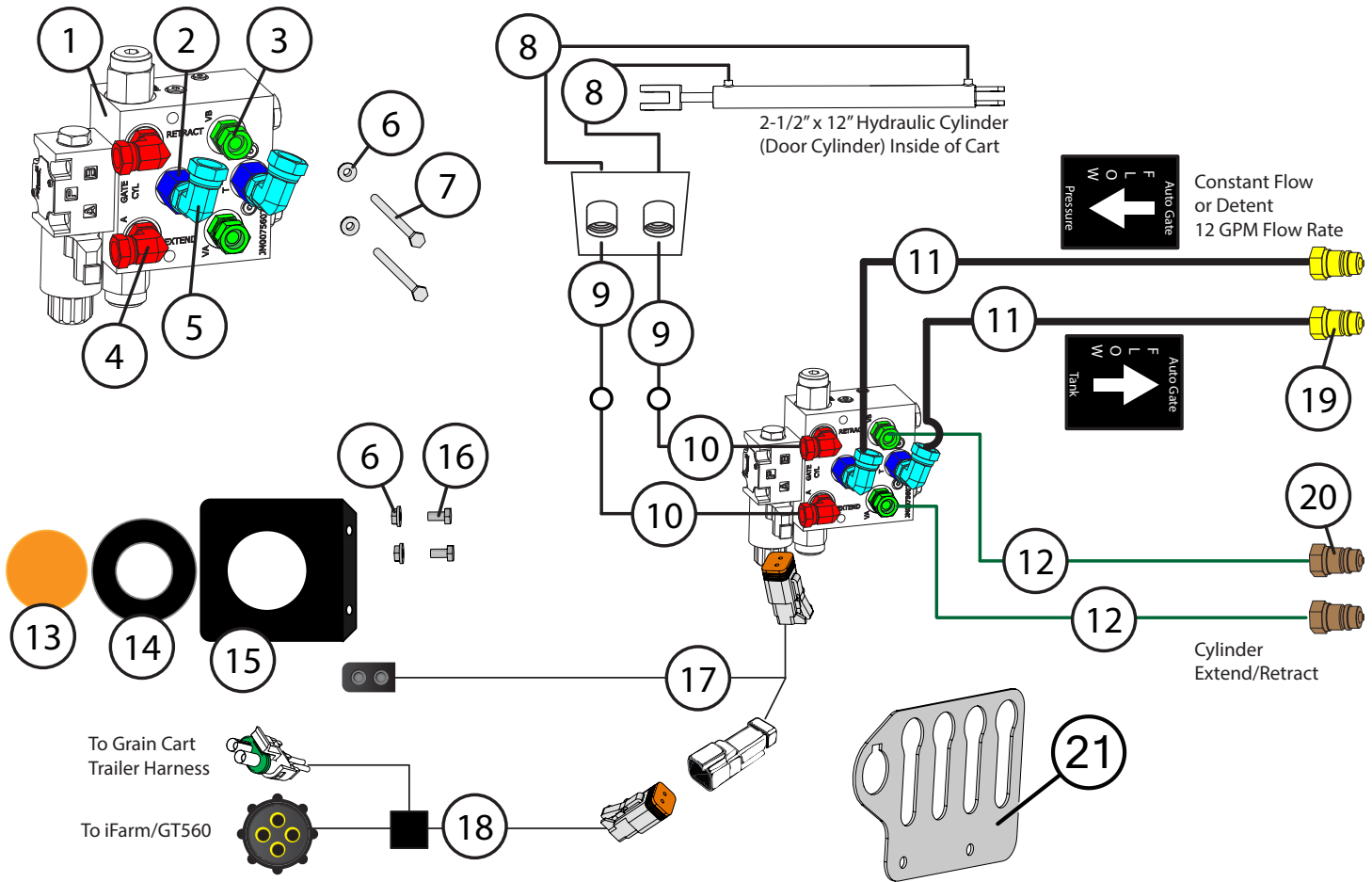
Description	Part No.
1 Auto Gate Control Manifold Assembly (Small and Dual Auger Carts)	JM0080323
2 #8 Male ORB x #8 Female ORB - Straight	JM0080267
3 1/2" Male ORB x 3/8" Female NPSM Swivel; Straight	JM0010298
4 #8 Male ORB Swivel x #6 Female NPSM Swivel - Elbow	JM0080266
5 1/2" Male ORB x 1/2" Female NPSM Swivel; 90 Degree Elbow	JM0047392
6 1/4"-20 Gr5 Z SF Hex Nut	JM0001630
7 1/4"-20 x 3-1/2" Gr5 Z Hex Bolt	JM0046621
8 1/4" x 43" Hydraulic Hose 43 inch 4M3k-4G-6MPX-4G-6MP	JM0024904
9 1/2" x 236" Hydraulic Hose 236inch8M3k-8G-8MP-8G-8MPX	JM0047376
10 Hydraulic Hose 1/4" x 212" 212inch4M3k-4G-8MP-4G-6MPX	JM0030611
11 2-1/2" Amber Round LED Light/Reflector	JM0001895
12 Round Grommet for LED 2-1/2" Light/Reflector	JM0001902
13 3-1/2" Round LED Mount	JM0034956
14 1/4"-20 x 3/4" Gr5 Z Hex Bolt	JM0001507
15 Auto Gate Light Harness (LED Light "Y" Cable)	JM0046624
16 J&M Relay Harness (1 per IFM-GS-1P(auto-gate))	JM0037374
17 1/2" Female NPT x Male Pioneer - Low Flow, Ball Style	JM0039220
18 1/2" Female NPT x Male Pioneer - High Flow, Cone Style	JM0018254
19 4 Keyed 12 Series Hydraulic Hose Holder	JM0032434

1012-1522 Auto-Gate



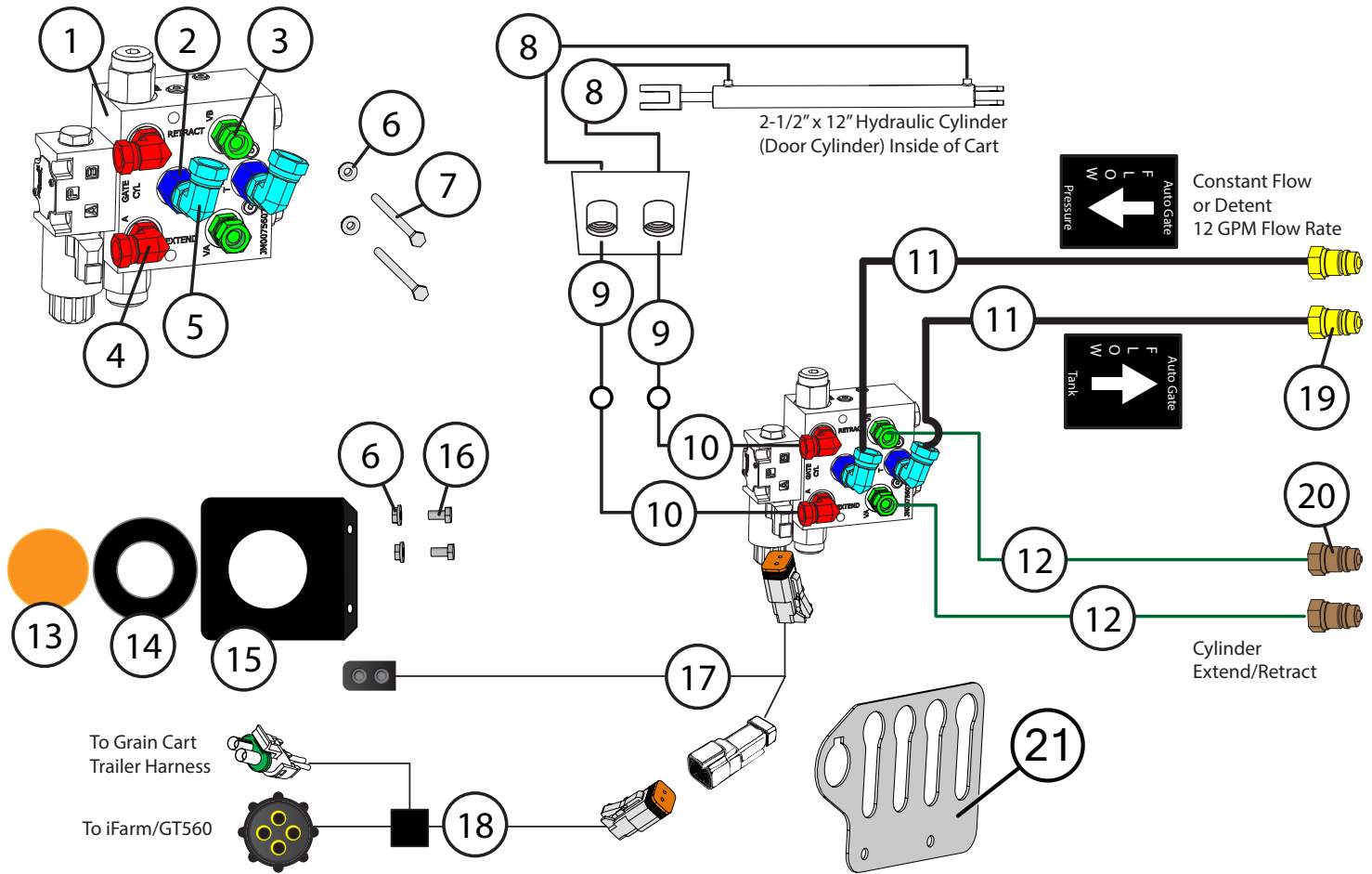
Description	Part No.
1 Auto Gate Control Manifold Assembly (1000 - 1400 Bushel Carts)	JM0080322
2 #8 Male ORB x #8 Female ORB - Straight	JM0080267
3 1/2" Male ORB x 3/8" Female NPSM Swivel; Straight	JM0010298
4 #8 Male ORB Swivel x #6 Female NPSM Swivel - Elbow	JM0080266
5 1/2" Male ORB x 1/2" Female NPSM Swivel; 90 Degree Elbow	JM0047392
6 1/2" Male ORB x 1/2" Female NPSM Swivel; Straight	JM0026804
7 1/4"-20 Gr5 Z SF Hex Nut	JM0001630
8 1/4"-20 x 3-1/2" Gr5 Z Hex Bolt	JM0046621
9 1/2" x 43" Hydraulic Hose 43inch8M3k-8G-8MPX-8G-6MP	JM0024906
10 1/4" x 43" Hydraulic Hose 43 inch 4M3k-4G-6MPX-4G-6MP	JM0024904
11 1/2" x 236" Hydraulic Hose 236inch8M3k-8G-8MP-8G-8MPX	JM0047376
12 1/4" x 236" Hydraulic Hose 236inch4M3k-4G-6MPX-4G-8MP	JM0046664
13 1/2" x 236" Hydraulic Hose 236inch8M3k-8G-8MP-8G-8MPX	JM0047376
14 2-1/2" Amber Round LED Light/Reflector	JM0001895
15 Round Grommet for LED 2-1/2" Light/Reflector	JM0001902
16 3-1/2" Round LED Mount	JM0034956
17 1/4"-20 x 3/4" Gr5 Z Hex Bolt	JM0001507
18 Auto Gate Light Harness (LED Light "Y" Cable)	JM0046624
19 J&M Relay Harness (1 per IFM-GS-1P(auto-gate))	JM0037374
20 1/2" Female NPT x Male Pioneer - Low Flow, Ball Style	JM0039220
21 1/2" Female NPT x Male Pioneer - High Flow, Cone Style	JM0018254
22 4 Keyed 12 Series Hydraulic Hose Holder	JM0032434

1132, 1432 Auto-Gate Shut-Off Assembly



Description	Part No.
1 Auto-Gate Shut-Off Valve Small Carts and Dual Auger Carts	JM0080323
2 1/2" Male ORB x 1/2" Female ORB; Straight	JM0080267
3 1/2" Male ORB x 3/8" Female NPSM Swivel; Straight	JM0010298
4 1/2" Male ORB x 3/8" Female NPSM Swivel; 90 Degree Elbow	JM0080266
5 1/2" Male ORB x 1/2" Female NPSM Swivel; 90 Degree Elbow	JM0047392
6 1/4"-20 Gr5 Z SF Hex Nut	JM0001630
7 1/4"-20 x 3-1/2" Gr5 Z Hex Bolt	JM0046621
8 1/4" x 19" Hydraulic Hose 19inch4M3k-4G-6MPX-4G-6MP	JM0048197
9 1/4" x 218" Hydraulic Hose 218inch4M3k-4G-6MPX-4G-6FP	JM0080175
10 1/4" x 43" Hydraulic Hose 43 inch 4M3k-4G-6MPX-4G-6MP	JM0024904
11 1/2" x 236" Hydraulic Hose 236inch8M3k-8G-8MP-8G-8MPX	JM0047376
12 1/4" x 236" Hydraulic Hose 236inch4M3k-4G-6MPX-4G-8MP	JM0046664
13 2-1/2" Amber Round LED Light/Reflector	JM0001895
14 Round Grommet for LED 2-1/2" Light/Reflector	JM0001902
15 3-1/2" Round LED Mount	JM0034956
16 1/4"-20 x 3/4" Gr5 Z Hex Bolt	JM0001507
17 Auto Gate Light Harness (LED Light "Y" Cable)	JM0046624
18 J&M Relay Harness (1 per IFM-GS-1P(auto-gate))	JM0037374
19 1/2" Female NPT x Male Pioneer - Low Flow, Ball Style	JM0039220
20 1/2" Female NPT x Male Pioneer - High Flow, Cone Style	JM0018254
21 4 Keyed 12 Series Hydraulic Hose Holder	JM0032434

1732, 2032, 2332 Auto-Gate Shut-Off Assembly



Description	Part No.
1 Auto Gate Control Manifold Assembly (Small and Dual Auger Carts)	JM0080323
2 3/8" Male ORB x 3/8" Female ORB; Straight Reducer	JM0039051
3 3/8" Male ORB x 3/8" Female NPSM Swivel; Straight	JM0044256
4 3/8" Male ORB x 3/8" Male NPT; 90 Degree Elbow	JM0047350
5 #6 Male ORB Swivel x #8 Female NPT Swivel - Elbow	JM0080171
6 1/4"-20 Gr5 Z SF Hex Nut	JM0001630
7 1/4"-20 x 3-1/2" Gr5 Z Hex Bolt	JM0046621
8 1/4" x 19" Hydraulic Hose 19inch4M3k-4G-6MPX-4G-6MP	JM0048197
9 1/4" x 302" Hydraulic Hose 302inch4M3k-4G-6MPX-4G-6FP	JM0080176
10 1/4" x 43" Hydraulic Hose 43 inch 4M3k-4G-6MPX-4G-6MP	JM0024904
11 1/2" x 236" Hydraulic Hose 236inch8M3k-8G-8MP-8G-8MPX	JM0047376
12 1/4" x 236" Hydraulic Hose 236inch4M3k-4G-6MPX-4G-8MP	JM0046664
13 2-1/2" Amber Round LED Light/Reflector	JM0001895
14 Round Grommet for LED 2-1/2" Light/Reflector	JM0001902
15 3-1/2" Round LED Mount	JM0034956
16 1/4"-20 x 3/4" Gr5 Z Hex Bolt	JM0001507
17 Auto Gate Light Harness (LED Light "Y" Cable)	JM0046624
18 J&M Relay Harness (1 per IFM-GS-1P(auto-gate))	JM0037374
19 1/2" Female NPT x Male Pioneer - Low Flow, Ball Style	JM0039220
20 1/2" Female NPT x Male Pioneer - High Flow, Cone Style	JM0018254
21 4 Keyed 12 Series Hydraulic Hose Holder	JM0032434

iFarm App Settings and Testing

Setting Grain Cart Hydraulics

Attach all the hydraulic hoses to the tractor's remotes. Two sets of remotes will be required.

The original gate hoses (green "zip" ties) will operate the gate as normal. Manual gate operation doesn't require continuous flow. This acts as a fail safe. In the event you need to close the gate, simply operate like normal.

The auto-gate flow hoses must be set to continuous flow. There is a flow check valve in the valve body to allow only one way operation.

Testing the System

With the hydraulic hoses and 7-pin trailer harness connected, run the tractor running to open and close the gate with the controls to verify the direction. Leave the gate fully open.

On the remotes which the auto-gate flow hoses are connected to, set hydraulics to "Continuous" or "Detent".

In the iFarm Cart app, navigate to the "Device" page, and select the "Test" tab.

- The iFarm app must be connected to a 12VDC powered iFarm Cart device.

Press "Test Gate". This will close the gate and activate the auto-gate active LED. Navigate away from the Test page

- If gate does not close, reverse the auto-gate flow hoses connected to the tractor's remotes.

- If auto-gate active LED does not light, verify 12VDC power to system.

App Setup and Calibration

For your system to operate accurately, calibrate your hydraulics pressure, auger volume, and your gate output mode. The iFarm will send a 12VDC output to the auto-gate valve at a calculated weight before the target weight is reached. This calculated weight is adjusted with the following settings.

Navigate to the "Device" page and then to the "Gate" tab.

Gate Mode

This auto-gate valve requires the device to be set to Gate Mode 2. This sends a 12VDC output to the auto-gate valve to close the gate.

Auger Size (bu)

30 (Default) Range 50-180

This value represents the number of bushels flowing in the grain cart. If the target weight is "Over", "Increase" this value. If transferred weight is "Under" target weight, "Decrease" this value. 1 unit equals 56 - 60 lbs or what the currently active commodity lbs/bushel is. Ex: Target is 50000 lbs and transferred weight was 54500 lbs, "Increase value by 80.36 bu.

$(54500 \text{ (Transferred)} - 50000 \text{ (Target)}) = 4500 \text{ (Amount Over/Under)}$

$4500 \text{ (Amount Over/Under)} / 56 \text{ (Current Commodity Lbs/bu)} = 80.36 \text{ bu}$

Close Time (s)

3 (Default) Range 2.5 - 7

This value represents the time it takes the internal gate from a fully open to fully closed position. This can be calculated from the "Test" tab in the "Device" page. Fully open the gate and manually record the total close time. Enter the time in seconds in this field. Press "Save Settings" to write these values to the iFarm Cart device.

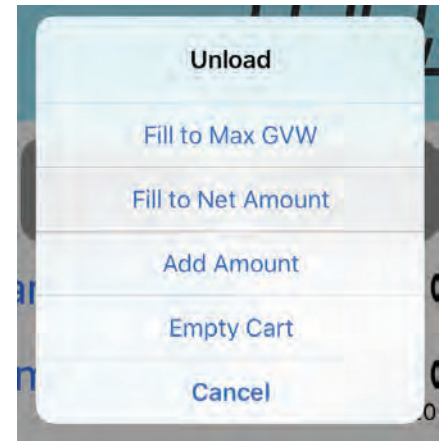


iFarm App Settings and Testing

Initializing the Auto-Gate Output

Step 1 - Press the "Unload" button on the display page. Select an unload weight option.

- **Fill to Max GVW**
Auto-gate will fill to a maximum allowable weight available in the selected truck. If full, press "Empty" to reset the truck to allow loading again. This will also transfer weight to the selected destination.
- **Fill to Net Amount**
Enter the total weight you wish the truck to be filled to. Example: If you want the truck's total weight to be 70,000 lbs instead of the standard 80,000 lbs, enter 70,000.
- **Add Amount**
Enter any weight to unload. If you want to unload 26,000 lbs for each hopper, enter 26000.
- **Empty Cart**
This disables auto-gate and will always allow for the cart to completely unload. Once the weight has stopped moving the gate will automatically shut.
- **Cancel**
Exits the unload menu and returns you to the display page.



Step 2 - Set Auto-Gate Flow remotes to "Continuous Flow" or "Detent". This can also be a timed amount. Set your tractor's hydraulics to a time that is longer than your total normal unload cycle. (~3-4 mins)

Step 3 - Activate your PTO and slowly increase the throttle to 2000 RPM engine speed. (~1000 RPM PTO speed)

Step 4 - Open the internal gate for the grain cart to your desired unload height with the gate hydraulic remotes. The auto-gate output will activate before you reach the target weight due to the gate settings in the app for your particular grain cart model.

Step 5 - Reduce throttle and disengage PTO.

Go to step 2 if you are repeating the same auto-gate unload.

GT560 Setup

The table below highlights common settings and the steps to adjust them.

Enter	Press	Select/Enter	Press	Select/Enter	Press	Description
6302	SELECT	STORED	ENTER	-	-	Tells the system what weight to pull for unload.
6305	SELECT	WEIGHT	ENTER	2500	ENTER	Weight to adjust for unload accuracy.
6303	SELECT	6.0	ENTER	-	-	How long you want the gate to shut. Helps avoid hydraulic back pressure
4001	SELECT	WEIGHT	ENTER	2500	ENTER	Beeping Starts before the door shuts. Set to 0 to disable.
4101	SELECT	UNDER	ENTER	-	-	Send 12v to close gate when preset reached

Setting up GT560 with Auto-Gate (AGS-560) option.

- Press **6302** on your monitor and hit SELECT. Select STORED or TRUCK preset value.
 - STORED preset allows you to enter an auto-unload weight.
 - Enter a desired unload weight and press ENTER to save preset for following unloads.
 - TRUCK preset allows you to fill the currently selected ID to the configured amount.
 - Press ID to find your different trucks and the weight they can hold. Press ENTER to input ID 1 capacity. Press down on the arrows to select ID 2 and enter the capacity of the second truck. Repeat that step for the third truck.
- Press **6305** on your monitor and hit SELECT. Select the WEIGHT setting and hit ENTER. Enter 2500 (preact number) for the adjusted weight that is in the auger after the gate closes. If you are consistently under or over your target weight, adjust this number by the amount off.
 - Example: 100 lbs heavy, change the preact number to 2600 (2500 + 100).
- Press **6303** on your monitor and hit SELECT. This setting is the time to shut the gate inside the cart. Our gate typically takes 3-5 seconds to close depending on the pressure from the tractor. Set this at 6 seconds ensure the gate will close completely.
- Press **4001** on your monitor and hit SELECT. Select WEIGHT and hit ENTER. This number should mirror the number you have set for the adjusted weight in your auger. It is an alarm that your gate is about to shut. If you want it to beep sooner, enter a larger number or set it to 0 to disable it.
- Press **4101** on your monitor and hit SELECT. Set to UNDER and hit ENTER. This triggers the 12V output to activate before your target weight.
 - Example: 50,000 Target -2500 Preact = 47,500 unloaded when the gate will close.

Using the Auto-Gate

- Enter an amount to unload if using STORED setting or select a truck by pressing the ID button.
- Enable tractor's hydraulic remotes connected to the Auto-Gate hoses to continuous flow (detent mode).
- Start the PTO and increase PTO speed to 1000 RPM (~2000 RPM engine speed).
- Open the grain cart's internal gate to allow for a desired unload speed.
- Auto-Gate will close automatically before reaching the target weight.
- When clean-out is complete, reduce PTO speed and disengage. you can also fold the auger at this time.
- Disable the tractor's hydraulic remotes connected to the Auto-Gate hoses.

Testing

- For your first use of the Auto-Gate system, test an unload of at least 5,00 lbs and no more than 1/2 of the trailer or wagon you are unloading into.
 - This allows a complete fill of the auger and enough time to manually close the gate if Auto-Gate is not set properly.
- Open the gate to only half when unloading during the test.
 - This verifies the hydraulics hose to the gate cylinder are correct when Auto-Gate is active.
 - If the gate opens higher, reverse the hoses going to the gate cylinder. Port's A and B on the Auto-Gate valve.
 - There is a one way check valve that will not allow reverse hydraulic flow.
- Record the amount the grain cart unloaded Compare to the desired unload amount and if needed adjust **6305** PREACT weight by the amount off.

Troubleshooting

- The grain cart does not close the gate automatically.
 - Verify the above settings are correctly entered into the GT560.
 - Verify you have entered a weight less than the total amount remaining in the grain cart before unloading.
 - Verify tractor's hydraulics to the Auto-Gate valve are in continuous flow and in the correct direction.
 - There is a one-way check valve that will not allow reverse hydraulic flow.
 - Check the electrical connection to the hydraulic Auto Gate valve.
- Can't enter a specific weight to unload.
 - TRUCK is currently set for the PRESET selection. Change **6302** to STORED.



Installation

Step 1

Install the Auto-Gate active LED mount, light and "Y" harness.

Using the mount as a template, position the mount on the front leg of the cart below the Transport/Field Position Facing toward the hitch. Mark the two hole positions and drill out using a 1/4" drill bit.



Attach mount using the two 1/4" x 3/4" bolts and 1/4" serrated flange nuts.

Install the LED light grommet and LED light.

Attach the LED "Y" harness to the rear of the LED light.

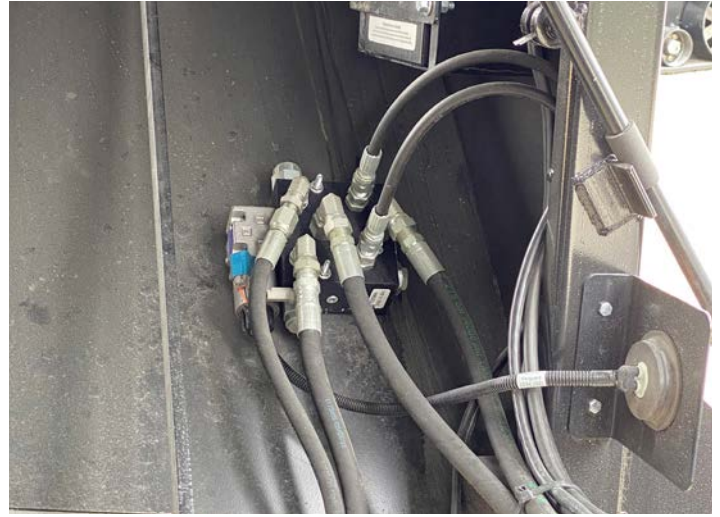


Installation

Step 2

Mount the Auto-Gate Valve Body

Using the valve as a template, position the valve on the driver side leg of the cart between the scale junction box and the front leg. Mark the two hole positions and drill out using a 1/4" drill bit. Position as shown.



Step 3

Relocate Existing Cylinder Hoses

Remove the 2 hoses from the ports on the grain cart and install on the autogate valve. The 1/2" hose attaches to the "VA" port. The 1/4" hose attached to "VB" port.



Step 4

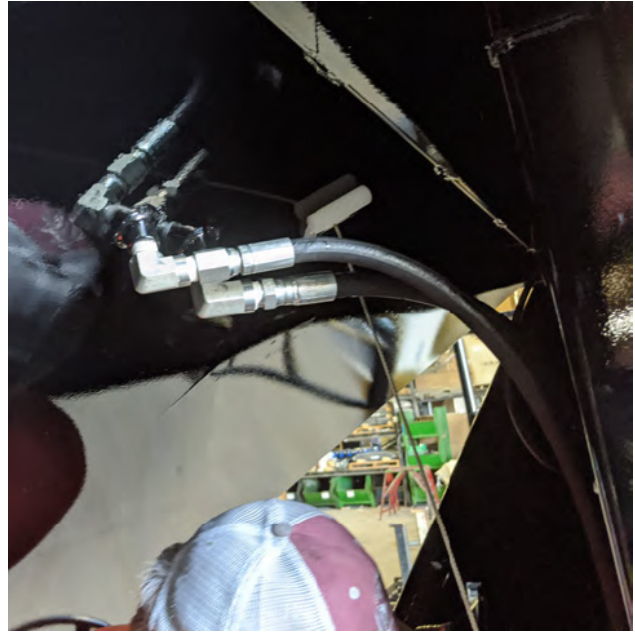
Installing New Cylinder Hoses

Attach the 1/2" hose to the "A" port on the valve and 3/8" hose to the "B" port on the valve.



Installation

Route the hoses up the front leg and attach the hoses to the grain cart hydraulic ports. The 1/2" hose is attached to the larger port on the driver side and the 3/8" hose is attached to the smaller port on the passenger side.



Step 5

Installing Flow Hoses

Remove the top portion of the PTO safety shield and route the two 1/2" hoses to the valve block. Attach one hose to the "P" port on the valve. Wrap the black "FLOW -> PRESSURE" decal around the hose, near tractor connection. The arrow should point away from the tractor.

Attach remaining hose to the "T" port on the valve. Wrap the black "FLOW , - TANK" decal around the hose, near tractor connection. The arrow should point towards the tractor.



Secure the hoses with large zip ties to the grain cart as shown.



Installation

Remove original power cable and install the new power cable with relay and output connector. Plug the “Y” Cable into the solenoid of the Auto-Gate valve using the gray deutsch connector. Plug the relay power cable output to the female deutsch connector.



Attach the auto-gate installed instructions on the front of the grain cart next to the iFarm Cart device for future reference.



Troubleshooting

Gate won't automatically shut, LED shows no output	No Auto Gate Unload was selected, Press unload and select an unload method. Check for 12VDC to the iFarm Cart.
Gate won't automatically shut, LED shows output	Check direction of hydraulic flow to the auto-gate flow hoses. Reverse if necessary. Verify all electrical connections are secured to valve.
Grain Cart Unloads more or less weight than selected	The auto-gate needs to be calibrated, see app setup and calibration. Scale sytem is damaged or needs service, verify your scales are accurate and in good working condition.
Gate output is active directly after selecting an unload	Gate is set to MODE 1, change to MODE 2 and save settings.
Grain cart shakes heavily during unloading	PTO speed is too slow, increase to 1000 RPM of PTO Speed.