Use this space to record information about your Maguire Machines:

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<th>Serial Number</th>
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Notes:
Maguire Products Inc.

Model MGF-ST
GRAVIMETRIC FEEDER

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To every person concerned with use and maintenance of the Maguire Gravimetric Feeder (MGF) it is recommended to read thoroughly these operating instructions. Maguire Products Inc. accepts no responsibility or liability for damage or malfunction of the equipment arising from non-observance of these operating instructions.

To avoid errors and to ensure trouble-free operation, it is essential that these operating instructions are read and understood by all personnel who are to use the equipment.

Should you have problems or difficulties with the equipment, please contact Maguire Products Inc. or your local Maguire distributor.

These operating instructions only apply to the equipment described within this manual.

Manufacturer’s Contact Information

Maguire Products Inc.
11 Crozerville Road
Aston, PA. 19014

Phone: 610.459.4300
Fax: 610.459.2700

Website: http://www.maguire.com

Email: info@maquire.com
Maguire MGF-ST Features

MGF-ST
Gravimetric Feeder

Throughput capacity:
Injection molding –
Up to 40.0 lb/hr
(18 kg/hr)

Extrusion –
Up to 120.0 lb/hr
(55 kg/hr)

Full function gravimetric feeder for the price of a volumetric model.

Eliminate Waste of Colorants and Additives
This compact loss-in-weight additive feeder precisely measures the amount of additive that is fed directly into the machine throat to eliminate costly waste.

Standard features:

3 Standard Modes of Operation
Cyclical, Continuous and Extrusion Following Modes. Rate (volumetic) also available.

Reduces Input Error
The easiest setup procedure in the industry: enter let-down ratio and either shot weight or lb/hr output and press start. Feeder automatically adjusts to screw recovery time and extruder output.

Fine Metering Resolution
100 rpm Stepper Motor advances at 200 increments per revolution. In combination with digital control, the 200-step rotation achieves fine metering resolution of ± 0.2%.

Automatic Re-calibration Ensures Continuous Accuracy
Automatic adjustments guarantee that feed rate is held to within ± 0.2% of desired let-down ratio.

Dual Load Cells
Balanced load readings improve accuracy.

Torque-limiting Drive Coupling
Protects drive motor in case of jammed auger.

Easy-to-Use Microprocessor Controller Saves Time
User-friendly controller has intuitive setup procedure.

USB Port
Allows data download, data printout and software update capability.

Detailed Material Usage Documentation
Microprocessor control allows data collection via G2 networking software, or MLAN protocol via Ethernet.

Eliminates Downtime Associated with Color Change
Feeder automatically re-calibrates to new color, so no additional setup required. Spare hoppers available for faster color changes.

Exclusive 5-Year Warranty
ASSEMBLY AND INSTALLATION INSTRUCTIONS

The MGF consists of these assemblies:

1. The Adaptor Frame Assembly
2. The Bar Assembly (for the Controller).
3. The Controller
4. The Load Cell Assembly
5. The Auger Tube Assembly
6. The Hopper Assembly

MOUNT THE ADAPTOR FRAME

1. The ADAPTOR frame mounts directly to the throat under your current natural material hopper. For proper ORIENTATION, consider the following:
   • Orient the Auger Tube Assembly at 90° to the machine barrel.
   • Clearance and ease of access for removing the hopper.
   • Easy viewing and access to the controller.
   • The feeder will hang from the side of the adapter that has the opening into the flow chamber.
2. Locate and drill the proper bolt patterns (top and bottom of the adapter frame). This frame will be bolted directly to the feed throat of your process machine and the natural material hopper will be bolted on top.

   The TOP plate has the ROUND hole.
   The BOTTOM plate has the SQUARE hole.

MOUNT THE CONTROLLER

3. The CONTROLLER will be mounted to a bar that bolts on the left side of the adaptor frame. You may also mount the controller in a remote location and use optional extension cords to connect the motor and load cell. Be sure that the mounting screws are tight.

HANG THE LOAD CELL ASSEMBLY

4. Hang the Load Cell Assembly from the side of the frame with the opening into the chamber. (See photo) Tilt unit. (1) Slip upper ear behind the corner post.
   (2) Slip the lower ear behind the other corner post. (3) Raise the lower ear up and rest the load cell assembly into frame as shown.

INSTALL AUGER TUBE ASSEMBLY

5. Insert the Auger Tube Assembly into Load Cell Assembly and hang onto the two bolt heads.

INSTALL HOPPER ASSEMBLY

6. Place the hopper assembly on the load cell assembly and secure with the hold downs.

PLUG IN ALL CORDS

7. Plug the motor and load cell cables into the Load Cell Assembly.
8. Plug the black power cable into a standard 120-volt (EURO, 230 VAC) outlet.
9. Standard equipped for contact closure applications only, your controller will be equipped with the supplied cable lead and 5-pin connector. You will also have a 20' length of cable with a mating 5-pin connector. This cable will connect to the MGF controller using the connector, and the open end will be wired to your equipment. The open ends leads should be wired to the screw signal normally open contact closure. When the screw is retracting contacts will close and then open at the end of the retract. The time closed is used by the MGF to adjust output. This 5-pin connector is also used with an extrusion following 0-10 volt signal. See the MGF wiring diagram on page 41.

10. If optionally ordered with 24 to 120 VDC or VAC plug the "SIGNAL" (gray) cord will be plugged into outlet that is energized only when the screw is turning. Signal voltage can be from 24 to 120 VDC or VAC. The screw signal on-time can not be less then 1 second. INJECTION time or CLAMP CLOSE time are options.

Description of Controls

1. POWER ON / OFF SWITCH - Turns power on or off. Switch light is illuminated when MGF is powered ON.

2. RUN / STOP SWITCH - This switch provides a run signal to the circuit board. For the MGF feeder to run, a screw turning signal MUST be present, providing power to the screw signal cord, AND the RUN switch must be in the RUN position. The only exception is when the PRIME feature is selected. This will operate the auger without any Run signal.

3. KEYPAD – Used to enter, modify data and settings. Arrow keys are used to navigate screens. The Enter button selects menu options and the Back button cancels or takes you back one step. The View button displays totals, cycles, date and time with the option to clear totals and cycles by pressing 00 to clear. Pressing any non-zero number will cause the controller to write totals to a USB key. There must be a folder named "maguire" on the USB key for the print job to write the file printer.txt within that folder. The i (info) button displays the diagnostics screen with real-time data and averaged and target data. See page 35 for more details on the diagnostics screen.
MGF Menu Navigation and Overview

The MGF menu system is designed to be easy to use with quick access to commonly adjusted settings as well as a password protected Settings section for first time setup and lesser accessed settings and menu choices. The following page lists all menu sections of the MGF in the order that they appear. When navigating the menu, the currently selected item is indicated by an arrow ▶ to the left of the option.

On the right side of the screen, up ▲ and down ▼ arrows indicate that there are more menu options above or below the current screen of choices. Navigation, selection and adjustment of menu options are accomplished by using the arrow buttons on the keypad to navigate and pressing the ENTER button to select an option. Adjustments to values are accomplished using the numeric keys on the keypad. Press the BACK button to go back, exit or cancel an action. On the MAIN MENU screen, LOAD at the bottom left is displayed when the loader is activated. In the lower right SIG (Signal) is displayed when in Cycle Mode and displays incrementing seconds of on-time.
MGF MENU Navigation - 5 Main Menu Options, 2 sub-menus

LBS/HOUR or SHOT WT – Setting Metering Rate or Shot Weight, grams. See page 10

LDR – Let Down Rate, Percent. See page 10

SETUP – Password protected access to options, settings and parameters See below ↓

FILL BIN – Enabled if Loader Operation is ON. Manual fill of the bin (hopper)

PRIME FUNCTION – Primes and calibrates the MGF See page 14

DIAGNOSTICS – Displays information for troubleshooting purposes See page 35

SETUP – Password protected access to MGF Settings (default: 2222) See page 18

SETTINGS – For changing basic setting of the MGF See below ↓

SCALE CALIBRATION – For calibrating the MGF Scale See page 25

COMMUNICATIONS – MLAN ID, View MAC Address, TCP/IP Address, TCP/IP Setup See page 26

LOADER OPERATIONS – Loader On/Off, Loader on/off grams, Loader Alarm See page 26

METERING RATE – Motor Factor, Weight Error, Low Weight See page 26

PARAMETERS – List of adjustable parameters. See Parameter for more information See page 27

PRINT OPTIONS – Parameter printout or time interval printouts to USB drive See page 23

UPDATE FIRMWARE – For updating MGF Firmware See page 32

UPDATE USB CHIP - For updating MGF’s USB firmware See page 32

RATE ADJ RESET – Used to reset the Rate Adjustment back to 1.0000 See page 33

VIEW/RESET TOTALS – Resets material usage totals and cycle counter See page 34

RESTORE DEFAULTS – Restores MGF factory defaults See page 34

SETTINGS

CHANGE PASSWORD – Changing the MGF Password (default: 2222) See page 18

MODE – Configuring to run CYCLE, CONTINUOUS or Extrusion Following mode See page 19

UNITS – Display units as US (Pounds, ounces) METRIC (Kilograms, grams) See page 20

LANG – Language: English, French, Italian, German, Polish, Czech, Spanish See page 20

SET DATE AND TIME – Date format (USA, Europe) and RTC setup See page 21

VOLUMETRIC - Causes the MGF to run at a fixed rate based on current values See page 22

AUTO STOP – Used for extrusion and continuous. Turning on requires a constant contact closure to run. Used normally to run and stop the MGF Feeder automatically with the extruder. Only available with extrusion following models.
SOFTWARE SETUP - FIRST TIME ONLY

Select Mode of Operation – CYCLE, CONTINUOUS, EXTR FLLW

Turn the MGF Power ON.  Power button located on lower left side of controller. View the LCD window.  Allow controller to boot up to MAIN MENU.

Press ↓ To scroll down to SETUP (using arrow key)

Press ENTER Display will say: ENTER PASSWORD _ _ _ _

Enter 2222 Default password is 2222

Press ENTER to enter SETTINGS. Display will show SETTINGS options.

Press ↓ once, scrolling the display down to MODE.

Press ENTER to toggle between CYCLE, CONTINUOUS and EXTR. FLLW (Extrusion Following) Mode.

Select CYCLE...
for injection molding, where the MGF auger turns on and off with each cycle. In this mode the first step is to enter the SHOT WEIGHT of the part on the main screen. Next set the LDR (Let Down Ratio) on the main screen. In CYCLE mode your MGF will dispense the calculated rate (shot weight x LDR) during the length of screw recover time.

Select CONTINUOUS...
for extrusion, where the MGF auger runs continuously. In this mode the first step is enter LBS (or KILOS) / HOUR of the extruder on the main screen. Next set the LDR (Let Down Ratio) on the main screen. In CONTINUOUS mode your MGF will run continuously at the calculated rate (lbs/hr x LDR). Auger speed will adjust automatically to maintain dispense rate.

Select EXTR. FLLW...
for extrusion, where the MGF auger runs continuously by following the 0-10 volt reference voltage of the extruder screw. In this mode the first step is to set the XMO parameter. Setting XMO will automatically calculate extruder throughput on the main screen based on a 0-10 volt reference. See page 27 for XMO. Next set the LDR (Let Down Ratio) on the main screen. In Extrusion Following mode your MGF will run continuously at the calculated rate (lbs/hr x LDR). Auger speed will adjust automatically to maintain dispense rate.

With the correct mode selected...

Press BACK to select the mode of operation you will use.

Press BACK Twice more to exit SETUP and back to the Main Screen
Select Units – US or Metric

Press ↓ To scroll down to SETUP (using arrow key)
Press ENTER Display will say: ENTER PASSWORD _ _ _ _
Enter 2222 Default password is 2222
Press ENTER to enter SETTINGS. Display will show basic MGF SETTINGS.
Press ↓ twice, scrolling the display down to UNITS.
Press ENTER to toggle between US and METRIC.
US will display in Pounds and ounces
METRIC will display in Kilograms and grams

With the desired UNITS selected...
Press BACK to make the selection.
Press BACK Twice more to exit SETUP and back to the Main Screen
Re-enter: the following settings if previously set (required when switching weight units)

1. LBS/HOUR (KGS/HOUR) – MAIN MENU Screen
2. LOW WEIGHT ALARM – See Parameters
3. LOADER ON WEIGHT – Setup / Loader Operations
4. LOADER OFF WEIGHT – Setup / Loader Operations
Set Date and Time – RTC (Real Time Clock) Setup

Press ↓ To scroll down to SETUP (using arrow key)

Press ENTER Display will say: ENTER PASSWORD _ _ _ _

Enter 2222 Default password is 2222

Press ENTER to enter SETTINGS.

Press ↓ to scroll the display down to SET DATE AND TIME.

Press ENTER The display will show the Date Format
USA displays as Month/Day/Year, Europe displays as Day/Month/Year

Press To toggle Date Format between USA and EUROPE

With the desired Format selected...

Press ENTER to make the selection. The Display will show the current date and time on the MGF. To adjust:

Use the keypad digits To adjust the blinking field.

Press to advance to the next field. If necessary adjust the highlighted field using the keypad numbers. Do this for all fields. When you advance past the last field, the display will show Date/Time Saved!

Press BACK three more times to exit SETUP and go to the Main Screen
START UP PROCEDURE

1. Turn POWER ON:

The opening screen displays for 5 seconds, and shows your software version number in the lower-right and the USB Version in the upper-right. The display then shows the Main Screen of the MGF. Depending on your Mode of Operation, the Main screen will either display Shot Weight or Pounds Per Hour (or KGS/Hour).

CYCLE MODE:

CONTINUOUS and EXTR FLLW MODES:

Adjustments

SHOT/WT or LBS/HOUR - Depending on your selected Mode, the display will show SHOT/WT or LBS/HOUR. To adjust this value, follow these instructions:

Using the Arrow buttons, select SHOT/WT or LBS/HOUR (selection indicated with the ▶)

Press ENTER Display will highlight the value on the right.
Enter NEW value using the keypad. When new value has been entered, press enter or fill in all digits.

LDR – Let Down Ratio - To adjust this value, follow these instructions:

Press once to highlight LDR (selection indicated with the ▶)

Press ENTER Display will highlight the value on the right.
Enter NEW value using the keypad. When new value has been entered, press enter or fill in all digits. The decimal is hard coded to 100ths of a %.
Prime the MGF Auger / Calibrate

It may be necessary to prime the auger prior to running. Prime will allow the MGF to run without a signal from the process machine. Run time is automatically limited to ONE minute. After one minute the display will read “PRIME TIMED OUT”. During the Prime, the MGF automatically calibrates the flow rate of the material. To Prime, follow these instructions:

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<th>Press</th>
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<th>PRIME FUNCTION</th>
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<td>Press</td>
<td>ENTER</td>
<td>Display will show: PRIME ON</td>
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|       | A 60-second counter will begin to count down. During this time the MGF will self-calibrate and display CALIBRATED indicating that it has learned the flow rate of your specific material and has adjusted the motor factor accordingly. After CALIBRATED has displayed, the prime function can be ended by pressing the BACK button, otherwise prime will continue to run for 60 seconds, then timeout and alarm, displaying “PRIME TIMED OUT”.
| Press | BACK                | To stop the prime function or any key on the keypad to silence the alarm.

When the MGF settings are adjusted and the MGF is primed with material, it is ready for operation.

Switch to RUN using the paddle switch on the left side if the controller, located next to the power switch.

What happens during NORMAL OPERATION

The software uses the information you have entered, lbs/hr (or shot wt) and Let Down Ratio, plus the motor factor, to determine a correct percentage off-time between steps for the motor to control speed.

Two 10K load cells detect the loss of weight after each dispense. Based on this feedback, adjustments are made to the percentage off-time to maintain the correct metering rate.

In the CONTINUOUS mode the percentage off-time, (motor speed) is adjusted to hold the correct loss in weight of the hopper.

In the CYCLE mode the speed is adjusted to meter the correct amount over the full screw signal cycle time. A change in process screw signal time will result in an adjustment to motor speed.

Speed adjustment is based on the previous screw return time. If screw return time is SHORTER then the PREVIOUS time, the auger motor will continue past the end of the run signal for 1 additional second. It will run faster on the next dispense to end in time.
### ALARMS and TROUBLESHOOTING

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| NO METERING - ALARM CODE:48 | | This alarm indicates that no loss in weight has been detected during the last several cycles. After clearing the alarm, metering will continue, however the alarm will not reappear until after you have remedied the problem. The following conditions are required to generate the NO METERING ALARM:  
  a. Before this alarm is checked, the system needed to have been running for at least 24 seconds.  
  b. If the MGF is in continuous or extrusion follow mode, the target rate needs to be more than 7.5 g/min.  
  c. If the MGF is in cycle mode, the target rate needs to be more than 2 grams / cycle.  
  d. If the MGF is in continuous or extrusion following mode, the difference between the two weights need to be greater than 10 times the target rate.  
  e. If the MGF is in cycle mode, the difference between the two weights needs to be greater than 5 times the target rate.  
  If the above conditions (a and (b or c)) are met, then the MGF will compare the current bin weight with a captured value from 24 seconds ago.  
  If the above condition (d or e) fails, then a counter is incremented.  
  If the above condition (d or e) passes, then the counter is reset to 0.  
  If the counter gets incremented past 3, then the NO METERING alarm is triggered.  
  In cycle mode, the NO METERING alarm is checked only at the start of every cycle.  
  In continuous or extrusion following mode, the NO METERING alarm is checked every RTU update. |
| LOADING TOO SLOWLY - ALARM CODE:49 | | If the loading feature is enabled and it takes more than LAT (Loader Alarm Time) seconds to fill the bin to LHF (Loader High Level) grams then this alarm is triggered. |
| PRIME ALARM - ALARM CODE:50 | | This alarm indicates that the 60-second Prime cycle time has ended. The Prime function is used to prime the feeder and is accessible from the main menu. It operates by running the feeder auger for one minute to prime the feeder then alarms to alert the operator that the prime cycle has ended. |
| LOW WEIGHT ALARM - ALARM CODE:51 | | If the bin weight falls below the LWA (Low Weight Alarm) setting (Default 400g) then this alarm will be triggered. If the bin weight rises above the LWA parameter, then the alarm will shut off. |
OVER WEIGHT LIMIT ALARM - ALARM CODE:52

This alarm indicates that the weight being read by the load cells exceeds the capacity of the cells. The cells are 10 Kilos each, 20 Kilos total, about 44 pounds. The hopper holds about 1/5 cubic foot, about 10 pounds. The weight of the hopper when empty is about 8.2 pounds.

MOTOR CAPACITY EXCEEDED - ALARM CODE:53

This alarm indicates that the calculated rate exceeds capacity.

The following variables effect the motor off-time calculation

- **MTF** (Motor Factor)
- **LDR** (Let Down Ratio)
- **PHR** (Per Hour Rate) (continuous and extr. Follow only)
- **SHT** (Shot Weight) (cycle mode only)
- **RATE ADJ**

If the target rate calculates out to less than a step every 2 ms, then this alarm is triggered.

The following variables effect the motor step time calculation

- **MTF** (Motor Factor)
- **RPM** (Maximum RPM)
- **SPR** (Steps per Revolution)
- **LDR** (Let Down Ratio)
- **PHR** (Per Hour Rate) (continuous and extr. Follow only)
- **SHT** (Shot Weight) (cycle mode only)
- **RATE ADJ**

BIN REMOVED - ALARM CODE:54

This alarm indicates that the hopper is not installed on the load cells. When this alarm is active, the MGF will not allow the auger to run and will not allow the loader to load material. Alarm is triggered if the bin weight falls below the NBW (Negative Bin Weight) grams.

MAX ADJUST RATE - ALARM CODE:55

Indicates Motor factor is too low which causes the MGF to dispense too much material over time, causing the rate adjust limit to reach 3.000. When the MGF makes a correction, the RATE ADJ value is re-calculated to compensate for the accumulated error. If the new RATE ADJ rises above the UBE (Upper Boundary Error) (Defaulted to 300 = 3.00), then this alarm is triggered. Doing a prime calibration is recommended and this will set your motor factor and rest rate adjust to 1.000.
**MIN ADJUST RATE - ALARM CODE: 56**

Indicates Motor factor is too high which causes the MGF to dispense too little material over time, causing the rate adjust limit to reach .3000. When the MGF makes a correction, the RATE ADJ value is re-calculated to compensate for the accumulated error. If the new RATE ADJ falls below the LBE (Lower Boundary Error) (Defaulted to 30 = 0.30), then this alarm is triggered. Doing a prime calibration is recommended and this will set your motor factor and rest rate adjust to 1.000.

**LIW TIMED OUT - ALARM CODE: 57**

When the MGF is configured to poll a Maguire LIW for Steady State Rate (LIW Mode), this alarm is generated when the MGF cannot poll the Steady State Rate from the LIW.

**LOADCELL ERROR - ALARM CODE: 58**

This error is generated if there is no response from the internal analog-to-digital converter system that provides a digital measurement from the loadcells. If this error is generated, it may indicate damage to the A-to-D converter. If you receive this error, please contact technical support.

**TROUBLESHOOTING CONTROLLER PROBLEMS**

If you have problems, the more information you can provide us about what caused the problem, the more we can do to improve our product so that these problems cannot, and do not, occur in the future. In some cases, we may NOT be able to duplicate YOUR particular problem in our testing facility. Describe the problem as CAREFULLY and as completely as possible to help us locate and correct any design weakness that might be responsible for the problems you are having.

**TROUBLESHOOTING LOSS OF COLOR**

1. Check that color supply is adequate.
2. Confirm that the motor is turning. Check proper connection of the motor plug.
3. Check that the drive coupling is not slipping and is securely attached to the motor shaft. The connecting tube between the motor coupling and the auger coupling is designed to slip under high torque. If excessive loading has caused it to slip, it may have become worn, or loose, or moved out of correct position.
SETUP Menu – Password protected access to MGF Settings including: SETTINGS, SCALE CALIBRATION, COMMUNICATIONS, LOADER OPERATIONS, METERING RATE, PARAMETERS, PRINT OPTIONS, UPDATE USB FIRMWARE, UPDATE FIRMWARE, RATE ADJUST RESET, VIEW/RESET TOTALS, RESTORE FACTORY DEFAULTS.

SETTINGS - CHANGE PASSWORD, MODE, UNITS, LANGUAGE, SET DATE AND TIME.

CHANGE PASSWORD – Used to change the factory password

For security purposes, you want to change the factory password to protect setup information from modification. The default password is “2222”. Four digits (0 through 9) are required. A modified password will not reset back to factory default after a software upgrade. If you changed the password but forgot what it is, please contact Maguire Products. The following describes how to change the factory password.

Press ↓ To scroll down to SETUP (using arrow key)
Press ENTER Display will say: ENTER PASSWORD _ _ _ _
Enter 2222 Default password is 2222
Press ENTER to enter SETTINGS.
Press ENTER to select CHANGE PASSWORD

You will be prompted for a New Password.

Enter a new 4-digit password or press BACK to exit without changing the password.

You will be prompted to confirm the new password. Enter your new password again.

The display will show Password Changed.

Press BACK three more times to exit SETUP and go to the Main Screen
MAGUIRE PRODUCTS, INC.

GRAVIMETRIC AUGER FEEDER®

MODE - Select Mode of Operation – CYCLE, CONTINUOUS or EXTR FLLW

Turn the MGF Power ON. Power button located on lower left side of controller. View the LCD window. Allow controller to boot up to MAIN MENU.

Press ↓ To scroll down to SETUP (using arrow key)

Press ENTER Display will say: ENTER PASSWORD _ _ _ _

Enter 2222 Default password is 2222

Press ENTER to enter SETTINGS. Display will show SETTINGS options.

Press ↓ once, scrolling the display down to MODE.

Press ENTER to toggle between CYCLE, CONTINUOUS and EXTR. FLLW (Extrusion Following) Mode.

Select CYCLE...
for injection molding, where the MGF auger turns on and off with each cycle. In this mode the first step is to enter the SHOT WEIGHT of the part on the main screen. Next set the LDR (Let Down Ratio) on the main screen. In CYCLE mode your MGF will dispense the calculated rate (shot weight x LDR) during the length of screw recover time.

Select CONTINUOUS...
for extrusion, where the MGF auger runs continuously. In this mode the first step is enter LBS (or KILOS) / HOUR of the extruder on the main screen. Next set the LDR (Let Down Ratio) on the main screen. In CONTINUOUS mode your MGF will run continuously at the calculated rate (lbs/hr x LDR). Auger speed will adjust automatically to maintain dispense rate.

Select EXTR. FLLW...
for extrusion, where the MGF auger runs continuously by following the 0-10 volt reference voltage of the extruder screw. In this mode the first step is to set the XMO parameter. Setting XMO will automatically calculate extruder throughput on the main screen based on a 0-10 volt reference. See page 27 for XMO. Next set the LDR (Let Down Ratio) on the main screen. In Extrusion Following mode your MGF will run continuously at the calculated rate (lbs/hr x LDR). Auger speed will adjust automatically to maintain dispense rate.

With the correct mode selected...

Press BACK to select the mode of operation you will use.

Press BACK Twice more to exit SETUP and back to the Main Screen
UNITs – Selects the Units to display, US or Metric

Press \( \downarrow \) To scroll down to SETUP (using arrow key)
Press ENTER Display will say: ENTER PASSWORD _ _ _ _
Enter 2222 Default password is 2222
Press ENTER to enter SETTINGS.
Press \( \downarrow \) twice, scrolling the display down to UNITS.
Press ENTER to toggle between US and METRIC.
US will display in Pounds and ounces
METRIC will display in Kilograms and grams

With the desired UNITS selected...
Press BACK to make the selection.
Press BACK Twice more to exit SETUP and back to the Main Screen
Re-enter: the following settings if previously set (required when switching weight units)

1. LBS/HOUR (KGS/HOUR) – MAIN MENU Screen
2. LOW WEIGHT ALARM – See Parameters
3. LOADER ON WEIGHT – Setup / Loader Operations
4. LOADER OFF WEIGHT – Setup / Loader Operations

LANG – Set the Language of the MGF Controller.
Languages include English, Italian, German, Polish, Czech, French and Spanish

Press \( \downarrow \) To scroll down to SETUP (using arrow key)
Press ENTER Display will say: ENTER PASSWORD _ _ _ _
Enter 2222 Default password is 2222
Press ENTER to enter SETTINGS.
Press \( \downarrow \) to scroll the display down to LANG (Language).
Press ENTER to toggle through the languages. When the language you desire is displayed, press BACK to set the new language.
Press BACK three more times to exit SETUP and go to the Main Screen
Set Date and Time – RTC (Real Time Clock) Setup

<table>
<thead>
<tr>
<th>Press</th>
<th>↓</th>
<th>To scroll down to SETUP (using arrow key)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press</td>
<td>ENTER</td>
<td>Display will say: ENTER PASSWORD _ _ _ _</td>
</tr>
<tr>
<td>Enter</td>
<td>2222</td>
<td>Default password is 2222</td>
</tr>
<tr>
<td>Press</td>
<td>ENTER</td>
<td>to enter SETTINGS.</td>
</tr>
<tr>
<td>Press</td>
<td>↓</td>
<td>to scroll the display down to SET DATE AND TIME.</td>
</tr>
<tr>
<td>Press</td>
<td>ENTER</td>
<td>The display will show the Date Format USA displays as Month/Day/Year, Europe displays as Day/Month/Year</td>
</tr>
<tr>
<td>Press</td>
<td>➔</td>
<td>To toggle Date Format between USA and EUROPE</td>
</tr>
</tbody>
</table>

With the desired Format selected...

<table>
<thead>
<tr>
<th>Press</th>
<th>ENTER</th>
<th>to make the selection. The Display will show the current date and time on the MGF. To adjust:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use the keypad</td>
<td>To adjust the blinking field.</td>
<td></td>
</tr>
<tr>
<td>Press</td>
<td>➔</td>
<td>to advance to the next field. If necessary, adjust the highlighted field using the keypad numbers. Do this for all fields. When you advance past the last field, the display will show Date/Time Saved!</td>
</tr>
<tr>
<td>Press</td>
<td>BACK</td>
<td>three more times to exit SETUP and go to the Main Screen</td>
</tr>
</tbody>
</table>
Volumetric Mode

Volumetric operation can be used in the event of a load cell failure. When power is turned off this mode is always reset to OFF. With this mode ON, the load cells are completely ignored. Error correction and rate recalibration does not take place. The unit functions like a volumetric feeder without checking or correcting for errors. Since load cell readings are ignored, this flag allows operation even if the load cells become damaged. Dispense times will be based entirely on the last known rate adjustment. IF the metering rate is not correct see Rate Adjustment Reset on page 33.

Press \[\downarrow\] To scroll down to SETUP (using arrow key)
Press ENTER Display will say:
ENTER PASSWORD _ _ _ _
Enter 2222 Default password is 2222
Press ENTER to enter SETTINGS.
Press \[\downarrow\] to scroll the display down to VOLUMETRIC.
Press ENTER To toggle between OFF / ON.

With the desired Format selected...
Press BACK to make the selection.
Press BACK two more times to exit SETUP and go to the Main Screen

AUTO STOP

Used for extrusion and continuous. Turning on requires a constant contact closure to run. Used normally to run and stop the MGF Feeder automatically with the extruder. Only available with extrusion following models.

Press \[\downarrow\] To scroll down to SETUP (using arrow key)
Press ENTER Display will say:
ENTER PASSWORD _ _ _ _
Enter 2222 Default password is 2222
Press ENTER to enter SETTINGS.
Press \[\downarrow\] to scroll the display down to AUTO STOP.
Press ENTER To toggle between OFF / ON.

With the desired Format selected...
Press BACK to make the selection.
Press BACK two more times to exit SETUP and go to the Main Screen
**Print Options – Send a Parameter report to the USB Drive, Print a report every** \( X \) **minutes.**

Press \( \downarrow \) ENTER To scroll down to SETUP (using arrow key)

Press ENTER Display will say:  
ENTER PASSWORD _ _ _ _  
Default password is 2222

Press \( \downarrow \) to scroll the display down to PRINT OPTIONS.

Press ENTER to enter PRINT OPTIONS.

Press \( \downarrow \) to select either Parameters or Report Interval.

Selecting Parameters and pressing ENTER will cause a Parameters Report to be send to the USB drive. Selecting Report Interval will allow time in minutes to be set for in Continuous or Extrusion Following Mode (001 to 999) or enabling of cycle reports by printing every cycle when enabled. 001 enable cycle reports. The MGF will append a snapshot of current information to a file on the USB drive. See below for details on the Reports. **NOTE:** There must be a folder named “maguire” on the USB key for the print job to write the file MGFCYCLE.TXT within that folder. Also see PRT parameter.

Press BACK two times to exit SETUP and go to the Main Screen

---

**Example of a Parameters Report:**

FIRMWARE: J0323A
GRAVIMETRIC FEEDER ID# 000   WO 000000   RECIPE 00000   OP 000   MODEL 50
IP ADDRESS: 192.168.0.1   SUBNET: 255.255.255.0   GATEWAY: 0.0.0.0
MODE: CYCLE

**GENERAL PARAMETERS**

<table>
<thead>
<tr>
<th>NAME</th>
<th>RAM</th>
<th>ROM</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDR</td>
<td>500</td>
<td>200</td>
</tr>
<tr>
<td>SHT</td>
<td>500</td>
<td>200</td>
</tr>
<tr>
<td>PHR</td>
<td>2</td>
<td>200</td>
</tr>
<tr>
<td>FUL</td>
<td>3500</td>
<td>3500</td>
</tr>
<tr>
<td>PRT</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>KDF</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>LCZ</td>
<td>583</td>
<td>583</td>
</tr>
<tr>
<td>MTF</td>
<td>136</td>
<td>75</td>
</tr>
<tr>
<td>XCV</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>XRC</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>XAL</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>XUL</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>XMO</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>UBE</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>UBE</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>NBW</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>LWA</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>ATP</td>
<td>50002</td>
<td>51005</td>
</tr>
<tr>
<td>RTU</td>
<td>305</td>
<td>305</td>
</tr>
<tr>
<td>ADJ</td>
<td>3005</td>
<td>3005</td>
</tr>
<tr>
<td>LIF</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>LHF</td>
<td>2000</td>
<td>2000</td>
</tr>
<tr>
<td>LAT</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>STL</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>NWA</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>XMR</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

To the left is an example of a parameters report. This report prints the current parameter settings loaded into RAM (those that are currently in use) as well as parameters in ROM (factory defaults), current firmware version, MGF model, current mode of operation, and communications specific settings (ID#, IP address, subnet, gateway). Also available is work order number, recipe number and operator number which are set via the MLAN protocol.

Below are the output reports produced during the preset time interval. These reports display a date / time stamp, the MGF ID number, Work Order #, Operator #, and Recipe #, the current settings, current hopper content weight, on-time, dispensed weight, rate adjustment, target, total weight dispensed in 10ths of grams, error %, cycle count (cycle mode) refill of the hopper count, and signal indicator with a signal count in seconds.

---

**Interval Report in Cycle Mode**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>07/27/2013 15:40:56</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRAVIMETRIC FEEDER ID#</td>
<td>000   WO 000000   RECIPE 00000   OP 000</td>
</tr>
<tr>
<td>LDR:</td>
<td>5.00%</td>
</tr>
<tr>
<td>WEIGHT:</td>
<td>3402.1</td>
</tr>
<tr>
<td>AVG. DISP.</td>
<td>2.98</td>
</tr>
<tr>
<td>TARGET:</td>
<td>3.45</td>
</tr>
<tr>
<td>ERROR:</td>
<td>-2.8</td>
</tr>
<tr>
<td>SIG ON:</td>
<td>8.07s</td>
</tr>
</tbody>
</table>

**Interval Report in Continuous Mode**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>07/27/2013 15:40:56</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRAVIMETRIC FEEDER ID#</td>
<td>000   WO 000000   RECIPE 00000   OP 000</td>
</tr>
<tr>
<td>LDR:</td>
<td>2.00%</td>
</tr>
<tr>
<td>WEIGHT:</td>
<td>1784.7</td>
</tr>
<tr>
<td>DISPENSED:</td>
<td>30.9</td>
</tr>
<tr>
<td>TARGET:</td>
<td>30.2</td>
</tr>
<tr>
<td>ERROR:</td>
<td>+0.6%</td>
</tr>
<tr>
<td>SIG ON:</td>
<td>3005</td>
</tr>
</tbody>
</table>
Interval Report Description

GRAVIMETRIC FEEDER ID# 000  WO 00000  RECIPE 00000  OP 000

ID#, WO, RECIPE, and OP are for tracking and identification only. These TAGS may be entered by the operator or downloaded by MLAN communication.

LDR: 5.00%
The percentage that you have entered as the desired target percentage.

WEIGHT: 3402.1
The current weight reading at the end of the dispense cycle. This is the total weight of the color that remains in the hopper.

AVG. DISP 2.98
The average dispense since the last rate error correction has occurred, or since the hopper was last refilled. It is the accumulated weight dispensed, divided by the accumulated cycles count.

TARGET: 3.45
The amount, in grams, that the feeder is targeting to dispense based on your entries of color percent, (LDR), and SHOT WEIGHT. Shot weight times LDR (percent of color) will give you the target dispense.

ERROR: -2.8 (3)
The total error that has occurred to this point, since the last rate correction or since the hopper was last filled. In this example, we have metered 1.9 grams more then we want, since the last correction. This is the "total" error. not one cycle, but all cycle errors combined. The (3) is the trip point. If total error exceeds 3 grams, then a recalculation of rate will occur.

SIG ON: 8.07s
The length of the screw return time that was recorded on this cycle. This number is used to determine how fast we need to run the auger to meter the required color uniformly over this time period.

SHOT WT: 69.0
The Gram weight number that you enter to tell the software how large a shot is being molded. It will include runners, and all parts if this is a multi-cavity mold. In this example, 69 x 5% = 3.45 grams, shown above as the TARGET weight.

ON TIME: 171ms
On models using our 24 volt DC motor, we control motor speed by pulsing the motor every second for a portion of that second. In this example, we will pulse the motor for 171 milliseconds, and then leave it off for the balance of the second, which is 829 ms off. The software adjusts this number based on the metering rate it has learned, coupled with the machine screw ON TIME. As On-Time varies, this number will also adjust. On models using a stepper motor, the off time between steps is adjusted to vary the metering rate.

RATE ADJ: 0.8145
We begin all metering rate calculations using certain assumptions. We do not know the bulk density of the color being metered, and we do not know the exact flow characteristics of the pellets which, together, will change the gram weight metered per revolution of the auger. We start with a standard formula that assumes certain base numbers for these values. In the formula we also have a factor, a multiplier, that starts with a value of 1.0000. At this value, it has no effect. As we learn of an error in our dispense rate, we adjust this factor. In this example, we have adjusted it from 1.0000 downward to 0.8145, which tells us that either the bulk density is higher than our standard assumption, or the pellets flow better then our standard assumption. In any case, the software uses this number to keep the metering rate exactly correct, based on actual dispense rate learned from the loss-in-weight load cell readings over time. This is the number that you will see adjust as the unit learns the exactly correct metering rate.

ACC. WT: 17.89
The accumulated weight since the last correction, or the last hopper refill.

ACC. CT: 6
The cycle count since the last correction, or the last hopper refill. These two values, (accumulated) WEIGHT and CYCLE Count, are used to check on how close we are to our target. The ERROR is based on these numbers as compared to what we would expect if we run at a Perfect rate. TARGET per cycle times CYCLE CT is compared to (accumulated) WEIGHT, and the difference is the ERROR.

TOT. WT: The total weight dispensed since the last time this value was cleared to zero. This can be used to track total usage in your plant.

TOT. CT: The total cycle count since last cleared to zero. This number also are useful for keeping print-out pages in order, and to reference cycles by number when highlighting problems or questions. These last two numbers are for convenience only. They do not enter into control calculations.
Scale Calibration
Periodic zero and full calibration ensures that the MGF is weighing correctly. Calibration is also necessary if a load cell is replaced or if the controller is replaced. Before doing a calibration, you will need a known weight that can be rested on top of the hopper lid. The known weight must weigh approximately 4000 grams and you must know exactly how many grams it actually weighs. This weight in grams will be entered into the MGF. Also be sure of the following:

BE SURE the material hopper is EMPTY.
BE SURE the load cell connector is plugged into the side of the controller.
BE SURE the LOADER material hose is connected to the hopper lid.

### Calibration Sequence:

<table>
<thead>
<tr>
<th>Turn the MGF on. View the Main Menu screen on the LCD window.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press [arrow key] To scroll down to SETUP (using arrow key)</td>
</tr>
<tr>
<td>Press ENTER Display will show: ENTER PASSWORD _ _ _ _</td>
</tr>
<tr>
<td>Press [arrow key] To scroll down to SCALE CALIBRATION</td>
</tr>
<tr>
<td>Press ENTER Display will show: ZERO CALIBRATION FULL CALIBRATION</td>
</tr>
<tr>
<td>ZERO CALIBRATION is selected and should be done first, followed by a FULL CALIBRATION</td>
</tr>
<tr>
<td>Press ENTER Display will show: WARNING - If this calibration is not performed properly it may disable your scale.</td>
</tr>
<tr>
<td>Press ENTER Display will show: LOAD CELL ZERO, WAIT followed by, CALIBRATION SUCCESSFUL</td>
</tr>
<tr>
<td>Press [arrow key] To scroll down to FULL CALIBRATION</td>
</tr>
<tr>
<td>FULL CALIBRATION - Place your known calibration weight on top of the hopper lid.</td>
</tr>
<tr>
<td>Press ENTER Display will show: WARNING - If this calibration is not performed properly it may disable your scale.</td>
</tr>
<tr>
<td>Press ENTER Display will show: LOAD CELL FULL, Enter Weight: Enter the weight in grams of your calibrated weight.</td>
</tr>
</tbody>
</table>

Enter the weight in whole grams of your calibration weight.  

NOTE: The MGF field has 5 digits, use a leading zero when entering a 4-digit value.

| Press ENTER Display will show: LOAD CELL FULL, WAIT followed by, CALIBRATION SUCCESSFUL |
| Press BACK three times to return to the Main Menu. Main Menu screen should display 0 (zero) at the bottom of the display. If the display does not show 0 (zero), repeat ZERO and FULL calibration routine. With the weight still on the hopper, the display should read the correct weight value in whole grams. |
COMMUNICATIONS
Communications to and from the MGF use the MLAN Protocol and allow control of settings and parameters as well as data and totals collection from the MGF.

MLAN ID  Sets the MGF’s Identification Number
Select this option to enter an identification number for this particular feeder. If you are using communications to automatically gather data, then each controller must have a unique address. Valid numbers are 001 to 254. All communication commands (MLAN Protocol) use this I.D. number. For more information on communications, contact Maguire Products, Inc. or see the Maguire MLAN Protocol manual available online at www.maguire.com.

VIEW MAC ADDRESS  View the MGF’s Ethernet MAC Address

VIEW TCP/IP ADDR  View the MGF’s TCP/IP Settings
Use the arrow keys to toggle through IP Address, Network Mask and Default Gateway.

TCP/IP SETUP  Set the Blender TCP/IP Settings
Used to set the IP Address, Network Mask and Default Gateway. Press the ENTER key to toggle between DHCP and static IP Address. To set a Static IP Address, use the keypad to enter the static IP address you wish to assign the controller and use leading zeros when necessary. After entering the IP, the display will go to Network Mask (Subnet), then to Default Gateway. After entering the Default Gateway, the display will return to Static IP. When you are finished entering the network information, press BACK to save settings and BACK 3 more times to go back to the main screen.

LOADER OPERATIONS:

LOADER  ON / OFF – Enable or Disable use of the Loader

LOADER ON WT  Loader On Weight, Grams – Weight in grams to turn on the loader

LOADER OFF W  Loader Off Weight, Grams - Weight in grams to turn off the loader

LOADER ALARM  Alarm in seconds – Alarm after the elapse of seconds if loader off weight is not satisfied.

METERING RATE:

MOTOR FACTOR:  Motor factor works in combination with auger size and the motor rpm. The motor factor represents grams per revolution and the ½ inch auger uses a motor factor of 02.50 while the 1 inch auger uses a motor factor of 15.00. If you change the auger size, you must also change the motor factor.

ADJUST. TRIP:  This is the trip point of percentage deviation from target grams per minute dispense in a trend that triggers a readjustment of motor speed (5% default). Same as ATP parameter.

WEIGHT ERROR:  If hopper weight has not dropped at all after this amount of expected metering, the NO METERING alarm will sound. This number should not be set too low as false alarms may occur.

LOW WEIGHT:  This is weight, below which you want to receive an alarm. For example, set to 2 pounds, the alarm will begin when remaining weight falls below 2 pounds. When set to 0, this alarm is disabled.
PARAMETERS

All Maguire MGF controllers operate according to certain internal PARAMETERS. Because customer requirements vary widely, we have made parameters accessible for change through the keypad. In most cases, these parameters will never need to be changed. Some parameters that are routinely adjusted values are adjustable from the main display.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDR</td>
<td>Let Down Ratio – Percent</td>
<td>MGF-4: 00200, MGF-8: 00200</td>
</tr>
<tr>
<td>SHT</td>
<td>Shot Weight – Grams</td>
<td>MGF-4: 00200, MGF-8: 00200</td>
</tr>
<tr>
<td>PHR</td>
<td>Per Hour Rate – Counts Per Hour</td>
<td>MGF-4: 00200, MGF-8: 00200</td>
</tr>
<tr>
<td>FUL</td>
<td>Full Bin Weight – Grams</td>
<td>MGF-4: 10000, MGF-8: 10000</td>
</tr>
<tr>
<td>PRT</td>
<td>Report Interval – Minutes</td>
<td>MGF-4: 00000, MGF-8: 00000</td>
</tr>
<tr>
<td>KDF</td>
<td>Stable Weight – Number</td>
<td>MGF-4: 00200, MGF-8: 00200</td>
</tr>
<tr>
<td>LCZ</td>
<td>Load-cell Zero – Number</td>
<td>MGF-4: 20000, MGF-8: 20000</td>
</tr>
</tbody>
</table>

**LDR**
Let Down Ratio – Percent
Factory Default - MGF-4: 00200, MGF-8: 00200
Percentage of SHOT WEIGHT or PER HOUR RATE in 1/100th percent

**SHT**
Shot Weight – Grams
Factory Default - MGF-4: 00200, MGF-8: 00200
Shot weight dispensed during cycle mode in whole grams

**PHR**
Per Hour Rate – Counts Per Hour
Factory Default - MGF-4: 00200, MGF-8: 00200
Value used to hold LB / HR or KG / HR depending on US / METRIC flag in whole units

**FUL**
Full Bin Weight – Grams
Factory Default - MGF-4: 10000, MGF-8: 10000
Weight of bin (hopper) when full, in whole grams. (Intended for future use)

**PRT**
Report Interval – Minutes
Factory Default - MGF-4: 00000, MGF-8: 00000
Used to generate reports while running.
In Continuous or extrusion following: reports are generated every X minutes. (00005 = every 5 minutes)
In Cycle Mode 00001 will enable printout of every cycle.

**KDF**
 Stable Weight – Number
Factory Default - MGF-4: 00200, MGF-8: 00200
Used in load-cell calibration routine. Difference between raw count updates use to get a stable reading. raw counts

**LCZ**
Load-cell Zero – Number
Factory Default - MGF-4: 20000, MGF-8: 20000
Lowest possible raw count value from loadcells for zero calibration. raw counts
**MTF**  
Motor Factor – model dependant - 1st gen pre-2012, second gen 1st quarter 2012  
1st gen analog motor Grams Per Second – **00075** (1/2” auger MGF-4), **00500** (1” auger MGF-8)  
2nd gen stepper motor Grams Per revolution – **3.00** (1/2” auger MGF-4), **12.50** (1” auger MGF-8)  
Implied decimal after 3rd digit in 1st Gen MGF controllers.  

**XCV**  
Extruder Voltage – Volts  
Factory Default - MGF-4: **00000**, MGF-8: **00000**  
Current incoming voltage. Used in extrusion following, 1/100 volt. Automatic adjustment occurs to throughput based on XMO parameter.  

**XMO**  
Extruder Max Output – Pounds or Kilograms / hour – **01000**  
Factory Default - MGF-4: **01000**, MGF-8: **01000**  
For Extrusion Following, this parameter stores the maximum extruder throughput based off of the XCV parameter at the maximum 10 volts. A manual entry of extruder throughput on the main screen will automatically set the XMO parameter and will be scaled from the current incoming voltage. **Example**: Incoming voltage is 5 volts. An Entry of 300 lbs. will set XMO to 00600 (lbs or kg). Entering a 1 in the first digit (1xxxx) will only allow changes to extruder throughput on main screen while in program mode (password protected).  

**LBE**  
Lower Boundary Error – Number  
Factory Default - MGF-4: **00030**, MGF-8: **00030**  
Error rate lower limit in 1/100th number.  

**UBE**  
Upper Boundary Error – Number  
Factory Default - MGF-4: **00300**, MGF-8: **00300**  
Error rate upper limit in 1/100th number.  

**NBW**  
Negative Bin Weight – whole grams  
Factory Default - MGF-4: **00100**, MGF-8: **00100**  
Negative weight read from the bin (hopper), which will disable loader, whole grams.  

**LWA**  
Low Weight Alarm – whole grams  
Factory Default - MGF-4: **00400**, MGF-8: **00400**  
(0 = disabled) Weight of hopper that triggers the low weight alarm.  

**ATP**  
Adjustment Trip Point – grams  
Factory Default - MGF-4: **00005**, MGF-8: **00005**  
The fourth and fifth digits are the accumulative gram error that will force a readjustment of motor speed (5 grams default).  

**RTU**  
Run-Time Update – intervals, seconds  
Factory Default - MGF-4: **00201**, MGF-8: **00201**  
This parameter holds two values; the first three digits are the successive number weight readings that must be above (+) or below (-) the ATP parameter value before making an adjustment to the motor off-time. The 4th and 5th digits are amount of adjustment in seconds that will be made. Controlled by ADJ parameter.  

**ADJ**  
Adjustment Limit – Percent  
Factory Default - MGF-4: **03005**, MGF-8: **03005**  
Adjustment threshold and percentage when learning rate. This parameter holds two values. The 2nd and 3rd digits represent two things, percentage threshold (default 30%) and percentage adjustment (also 30%). If actual is equal to or greater than the threshold value, adjustments will be made by this amount (30% by default). If actual is less than this value, the adjustment will be made by the amount represented in the 4th and 5th digits (10% by default).
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>LLF</td>
<td>Loader Low Level – whole grams</td>
<td>Factory Default - MGF-4: 00500, MGF-8: 00500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weight of hopper that triggers the loader to turn on, whole grams</td>
</tr>
<tr>
<td>LHF</td>
<td>Loader High Level – whole grams</td>
<td>Factory Default - MGF-4: 02000, MGF-8: 02000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weight of hopper that triggers the loader to turn off, whole grams</td>
</tr>
<tr>
<td>LAT</td>
<td>Loader Alarm Timeout – whole seconds</td>
<td>Factory Default - MGF-4: 00120, MGF-8: 00120</td>
</tr>
<tr>
<td></td>
<td></td>
<td>if the loader runs for this many seconds, the loader running too slowly alarm is tripped</td>
</tr>
<tr>
<td>STL</td>
<td>Loader Settle Time – Seconds</td>
<td>Factory Default - MGF-4: 00010, MGF-8: 00010</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of seconds after loader finished before correction accumulators are readjusted and error checking resumes. Whole seconds</td>
</tr>
<tr>
<td>NWA</td>
<td>No Weight Adjustment – Grams</td>
<td>Factory Default - MGF-4: 00100, MGF-8: 00100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the material in the hopper goes below this value in grams, stop making adjustments to error correction.</td>
</tr>
<tr>
<td>XMR</td>
<td>Extruder Minimum Rate – Grams/Second</td>
<td>Factory Default - MGF-4: 00000, MGF-8: 00000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For Extrusion control only – When a value is specified, this is the minimum rate (grams per second) that the MGF will run when the extruder slows down.</td>
</tr>
<tr>
<td>SPR</td>
<td>Steps Per Revolution – Number - DO NOT CHANGE THIS PARAMETER</td>
<td>Factory Default - MGF-4: 06400, MGF-8: 06400</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stepper motor micro steps per revolution. With a current MGF motor, there are 200 step per revolution and 32 hardwired micro steps or 6400 (200 x 32).</td>
</tr>
<tr>
<td>RPM</td>
<td>Maximum Revolutions Per Minute - Number - DO NOT CHANGE THIS PARAMETER</td>
<td>Factory Default - MGF-4: 00100, MGF-8: 00100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Software defined maximum number of revolutions per minute based on hardware capabilities.</td>
</tr>
<tr>
<td>PMR</td>
<td>Prime Motor Rate</td>
<td>Factory Default - MGF-4: 00020, MGF-8: 00020</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Software defined maximum number of revolutions per minute when running the Prime Function. A slower speed is used during PRIME to prevent overfills.</td>
</tr>
<tr>
<td>LCT</td>
<td>Load Cell Tolerance - GEN5 only. GEN6 does not use this parameter.</td>
<td>Factory Default - MGF-4: 00505, MGF-8: 00505</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter has 2 parts, xxx.yy. The left three digits (xxx) are the number of sequential raw count readings before snapping to the new value (00505 = 5 sequential readings). The right two digits (yy) are the difference between 2 sequential raw count readings (00505 = 5 raw counts) if the latest raw count reading is less than yy, then continue to use the previous reading however, if xxx readings in a row are the same value, then use to the latest reading.</td>
</tr>
<tr>
<td>BFS</td>
<td>Bin Full Settle - stepper motor only</td>
<td>Factory Default - MGF-4: 00020, MGF-8: 00020</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the bin weight spikes ± BFS grams beyond the target rate, then LOAD will appear and error correction is halted until the bin weight settles again.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
<td></td>
</tr>
</tbody>
</table>
| **RCP** | Recipe Number - Number  
Factory Default - MGF-4: 00000, MGF-8: 00000  
Recording purposes only, set the MGF's recipe number returned in the MLAN commands. This field stores a 5-digit number 00000-99999. |
| **WKO** | Work Order Number - Number  
Factory Default - MGF-4: 00000, MGF-8: 00000  
Recording purposes only, set the work order number returned in the MLAN commands. This field stores a 5-digit number 00000-99999. |
| **OPR** | Operator Number - Number  
Factory Default - MGF-4: 00000, MGF-8: 00000  
Recording purposes only, sets the operator number returned in the MLAN commands. This field stores a 5-digit number 00000-99999. |
| **NMA** | No Metering Alarm - Continuous mode only  
Factory Default - MGF-4: 33500, MGF-8: 33500  
This parameter has 3 parts: x.y.zzz  
Leftmost digit (x) is the number of times the rate is below the threshold before the alarm is turned on (33500 = 3 counts). Second digit from the left (y) is the number of times the rate is above the threshold before the alarm is turned off (33500 = 3 counts). The rightmost 3 digits (zzz) are the percentage of target rate (1/10th of a percent) (33500 = 50.0%). |
| **LIW** | LIW Polling Rate - LIW Mode only  
Factory Default - MGF-4: 00010, MGF-8: 00010  
The number of seconds between each poll of the LIW's steady rate. Faster rates may cause issues with the ethernet stack. Slower rates may cause issues with the MGF detecting changes in the LIW's steady rate. |
| **RAP** | Rate Adjust Percentage - Extrusion Following Only  
Factory Default - MGF-4: 10050, MGF-8: 10050  
This parameter has 2 parts, xx.yyy  
The leftmost two digits (xx) are the number of seconds between each rate adjustment check (10050 = 10 seconds). The three rightmost digits (yyy) are the lower threshold in grams per minute (10050 = 5.0 g/m). If the target g/m rate falls below the yyy threshold, the time between rate adjustment checks will change to xx. If the target g/m rate rise back above yyy threshold, the time between rate adjustment checks will revert back to its original setting. |
| **LLC** | LIW Lower Cap  
Factory Default - MGF-4: 00010, MGF-8: 00010  
Used for MLAN commands and LIW polling for continuous mode only. Stored as 1/10th LBS or KGS per hour (depending on the weight units setting) (00010 = 1.0 lb/hr). When a new target rate is received, it is checked against the LLC parameter. If the rate is equal to or below LLC, then the PHR parameter will snap to zero. |
### TAT  
**Target Adjust Threshold** - Cycle mode only  
**Factory Default** - MGF-4: 00025, MGF-8: 00025  
Stored as 1/100th grams per second (00025 = 0.25 g/s)  
When a cycle starts, the target grams per second rate (Shot weight / cycle time) is checked against TAT. If the rate is below TAT, then the running motor time is halved, and the target motor speed is doubled. This will continue until the target rate is above TAT.  
**Example:** TAT = 00025 (0.25 g/s)  
- **Shot Weight** = 9 grams  
- **Cycle Time** = 88 seconds  
  - this will result in a target rate of 0.102 g/s  
Before the cycle starts, the MGF will see that the rate is below 0.25 g/s and adjust the run time and motor speed to compensate for this. When the MGF runs it will have targeted a 0.409 g/s rate over a 22 second period.

### XFT  
**Extrusion Voltage Filter**  
**Factory Default:** 02003  
Used for filtering incoming extrusion voltage. The parameter is separated into 2 parts: vvv.ff  
vvv = cap to zero voltage in 1/100th of a voltage  
ff = fluctuation filter in 1/100th of a voltage.  
**NOTE:** ff is capped at 0.50V or xxx50

### LCL, LCH  
**Loadcell Low - Loadcell High**  
LCL factory defaulted: 00040. LCH factory defaulted: 00080.  
LCL and LCH are used for full weight loadcell calibration. The LCL and LCH parameters ensure that the calibrated weight falls with a reasonable slope. If the full weight slope is outside the LCL and LCH defined slopes, then an error message: **“BAD LOAD-CELL”** will be displayed.

### HRT  
**High Rate Trip Point** - Continuous and Extrusion Following only  
HRT controls the adjustment to the ATP parameter. HRT is separated into 2 parts: xx.yyy  
- xx = new value for ATP  
- yyy = trip point for changing ATP in grams / minute  
1. If the current rate is above HRT (yyy) then adjust the ATP to HRT (xx)  
2. If the current rate falls below HRT (yyy) then revert ATP back to previous setting.

### ECT  
**Error Count Tracking**  
ECT is used to specify the delay in error tracking when first starting as well as after an error correction is made. This parameter is broken into 2 parts: xx.yyy  
where xx = number of cycles (Cycle mode)  
- yyy = number of seconds (Continuous mode)

### IPC  
**Injection Color Percent** – Cycle Mode only  
**Factory Default:** 00025 (25%)  
Percent of the color target that should be added during the injection time. Typically, material is dispensed only during screw recovery. This parameter allows for a percentage of the overall color target to be dispensed during the beginning of the cycle’s injection. The injection time is controlled by the ISP parameter. This feature requires an injection signal (see MGF-STI Wiring Diagram).

### ISP  
**Injection Screw Time Percent** – Cycle Mode only  
**Factory Default:** 10030 (enabled at 30%)  
This parameter has two parts. The first digit (1xxxx) enables or disables this feature. 1=enabled, 0=disabled.  
ISP is the Percent of Recovery Time used to calculate a time (in seconds) to dispense an amount of additive (IPC parameter) at the beginning of the overall Injection Time. This parameter uses a percentage of the recovery time (30% by default) to calculate how much time the MGF will dispense material during the beginning of the injection stroke.
Updating MGF Firmware

When the MGF is turned on, the first screen displayed will show the current MGF firmware version (lower-right) as well as the MGF’s USB’s firmware, labeled CHIP in the menu (upper-right). The MGF firmware versions can be updated if necessary, using the USB port on the controller. The following instructions detail how to do both firmware updates. Each update is run separately. Maguire can supply the latest MGF firmware versions.

Copy the new firmware update into a folder named “maguire" on a USB flash drive.

Insert the USB Flash drive into the USB port on the MGF.

Press \[\downarrow\] To scroll down to SETUP (using arrow key)

Press \[\text{ENTER}\] Display will say: \text{ENTER PASSWORD \_\_\_\_}

Enter 2222 Default password is 2222

Press \[\downarrow\] to scroll down to: \text{UPDATE FIRMWARE}

Press \[\text{ENTER}\] The display will show: \text{Reading from USB \_\_\_\_ WAIT}
and then display the update version found on the drive.

NOTE: If the MGF is not able to read from the Flash Drive you will see this message: \text{Error: No Files Found. Press BACK and try again or try a different Flash Drive.}

Press \[\text{ENTER}\] to select the firmware update.

The MGF Controller Firmware update file for Gen5 is \text{GSxxxxxx.BIN}. The Gen6 file is \text{GSxxxxxx.XUF}. The display will show any available firmware versions on the USB drive and display:

\text{Update To: (GSxxxxxx.BIN or GSxxxxxx.XUF)}
Press \text{Any Key to Update Firmware}

Press \[\text{ENTER}\] to start the update.

The display will show progress in transferring to the internal SD card, then
The display will show progress in Verifying the update file, then
The display will show progress in Reflashing to the new Firmware, and then
The display will show: \text{REFLASH COMPLETE! The Controller will then reboot.}

Further software update information

MGF firmware updates can be supplied electronically, via email or by download. Firmware updates are named according to their date of release. For instance the MGF Controller Firmware update \text{GFI0517A.BIN (.XUF)} can be interpreted as GF=Gravimetric Feeder w/ Stepper, L=2012 (K=2011), 05=May, 17=March 17th, A=the first revision for that day. During the update process detailed above, new firmware found on the USB flash drive is first copied to an internally mounted SD card. From the SD card, the firmware is then loaded into the MGF. If there is ever a problem with the MGF and the USB port cannot be used or the MGF firmware is corrupted and cannot load, new firmware can be acquired from Maguire and renamed \text{UPDTFILE.BIN} for Gen5 or \text{GSUPDATE.XUF} for Gen6. This renamed firmware can be loaded onto the SD card and re-inserted into the slot inside the MGF controller. When the MGF is turned on, this \text{UPDTFILE.BIN} or \text{GSUPDATE.XUF} file will be automatically loaded into the MGF, restoring the firmware.
RATE ADJ RESET
Used to reset the Rate Adjustment back to the default value of 1.0000. This can be helpful if changing materials and the new material has a different consistency than the original material. When reset it may help the MGF to re-learn the rate quicker then if it adjusted the rate from the previously learned value.

Press ↓ To scroll down to SETUP (using arrow key)
Press ENTER Display will say: ENTER PASSWORD _ _ _ _
Enter 2222 Default password is 2222
Press ↓ 9 times to scroll the display down to RATE ADJ RESET
Press ENTER to display the Rate Adjust Reset screen. This screen will display the OLD ADJ and the NEW ADJ. OLD ADJ is the Rate adjustment that the MGF learned based on the material that was running through the MGF. NEW ADJ is the base number of 1.0000. Resetting this number back to 1.0000 when new material is used may help the MGF re-learn the Rate Adjustment quicker. If the new material has the same consistency as the original material, this step is not necessary.
Press ENTER to reset the Rate Adjustment back to 1.0000.
Press BACK three more times to exit SETUP and go back to the Main Screen

SET MODEL (MGF-3, MGF-4, MGF-8)
Used to set the model and auger size. MGF-3 is used a 3/8 inch auger, MGF-4 is used for a 1/2 inch auger, MGF-8 is used for a 1 inch auger. PRIME FUNCTION is required after a model Change.

Press ↓ To scroll down to SETUP (using arrow key)
Press ENTER Display will say: ENTER PASSWORD _ _ _ _
Enter 9753 Password to set the model. Display will show the current model.
Press ENTER to change the model. Model options are:
MGF-3 – 3/8 inch auger
MGF-4 – 1/2 inch auger
MGF-8 – 1 inch auger
Press BACK three more times to exit SETUP and go back to the Main Screen

Power off, then power on the controller to verify that the model has been changed.

IMPORTANT: After a model change a PRIME FUNCTION is required to calibrate the MGF. See page 14 for Prime Function Instructions.

NOTE: For older controllers that do not respond to the password 9753, model change is access under SETUP / SETTINGS / MODEL. Press ENTER to change the model and BACK to exit.
VIEW / RESET TOTALS
Note that if you are retrieving totals through the MLAN Protocol or the G2 Software, resetting totals is not recommended unless you are factoring in a reset of this value back to zero.

Totals can be viewed or reset from two locations. Pressing the VIEW on the keypad key will display current totals and cycle count. Pressing 00 from this screen will attempt to write totals to a USB flash drive and then reset totals and cycles back to zero. Pressing any other non-zero value will cause the controller to write totals to a USB drive. There must be a folder named “maguire” on the USB key for the print job to write the file printer.txt within that folder. Totals can also be viewed or reset from the menu system.

Press ▼ To scroll down to SETUP (using arrow key)
Press ENTER Display will say: ENTER PASSWORD _ _ _ _
Enter 2222 Default password is 2222
Press ▼ down to VIEW / RESET TOTALS
Press ENTER to display the View / Reset Totals screen. This screen will display current totals and cycle count. Press BACK to exit without clearing totals and cycles.
Press 00 to reset the Totals (total grams dispensed since the last clear) and Cycle Count back to zero. If no key is detected, the controller will display “Failed to print, Continue Clearing Totals?” Press ENTER to confirm.
Press BACK three more times to exit SETUP and go back to the Main Screen

RESTORE DEFAULTS
The MGF can be restored back to factory defaults by entering SETUP and scrolling down to RESTORE DEFAULTS, highlight and press enter.

Standard 1” Diameter Feeder and Standard ½” Diameter Feeder WITHOUT Loader Option

<table>
<thead>
<tr>
<th>Defaults for Standard 1” Diameter Feeder</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOTOR FACTOR</td>
</tr>
<tr>
<td>ER FACTOR</td>
</tr>
<tr>
<td>WEIGHT ERROR</td>
</tr>
<tr>
<td>LOW WEIGHT</td>
</tr>
<tr>
<td>PASSWORD</td>
</tr>
<tr>
<td>MODE</td>
</tr>
<tr>
<td>UNITS</td>
</tr>
</tbody>
</table>

Defaults for ½” Diameter Feeder

<table>
<thead>
<tr>
<th>Defaults for ½” Diameter Feeder</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOTOR FACTOR</td>
</tr>
<tr>
<td>ER FACTOR</td>
</tr>
<tr>
<td>WEIGHT ERROR</td>
</tr>
<tr>
<td>LOW WEIGHT</td>
</tr>
<tr>
<td>PASSWORD</td>
</tr>
<tr>
<td>MODE</td>
</tr>
<tr>
<td>UNITS</td>
</tr>
</tbody>
</table>

Standard 1” Diameter Feeder and Standard ½” Diameter Feeder WITH Loader Option

"MAIN MENU" SET-UP with Loader Option

| LBS / HOUR | 200 |
| LDR | 2 % |
| LOADER SETTINGS |
| TURN "ON" AT | 2 LBS (907 grams) |
| TURN "OFF" AT | 5 LBS (2268 grams) |
| ALARM TIME | 120 seconds |

"EQUIPMENT MENU" SET-UP with Loader Option

| MOTOR FACTOR with 1” Diameter Feeder | Stepper motor: 15.00, 1st Gen 26 RPM: 300 or 41 RPM: 500 |
| MOTOR FACTOR with ½” Diameter Feeder | Stepper motor: 2.50, 1st Gen 26 RPM: 77 or 41 RPM: 75 |
| ER FACTOR | 1.0000 |
| WEIGHT ERROR | 20 gram |
| LOW WEIGHT | 0 LB |
| PASSWORD | 2222 |
| MODE | CONTINUOUS |
| LOADER | ON |
| UNITS | US |
DIAGNOSTIC SCREEN

From the main screen, you may select the diagnostic screen for display by scrolling down to DIAGNOSTICS, pressing the i button or by entering 501 using the number keys. Operation will not be interrupted. Press the BACK key again to return to the main screen.

| WEIGHT         | 123.4 |
| DISPENSED     | 0.0  |
| TARGET        | 0.1  |
| ERROR         | -0.1 (5) ▼ |
| CYCLE CT      | 0▲ |
| RATE ADJ      | 1.0000 |
| TOTAL         | 0   |
| OFF TIME      | 655ms |

WEIGHT: The current weight reading of material in the hopper, 1/10th of grams.

DISPENSED: The actual grams of material dispensed in the previous cycle while in cycle mode, or in the past one minute while in continuous or extrusion following modes.

TARGET: The targeted grams of material that should be dispensed in one cycle while in cycle mode, or in one minute while in continuous or extrusion following modes.

ERROR: Accumulated Error difference between target and dispensed (-0.1 in example), Loss-in-weight Trip Point (5 in example) see ATP parameter on page 27.

CYCLE CT: Number of cycles since last rate adjustment or refill.

RATE ADJ: The amount of rate adjustment that has occurred to maintain correct output. Initial speed is based on a specified motor factor and grams per second, determined by the auger size. Bulk density errors, as well as auger drift, and pellet configuration can result in metering rate errors. This number shows how much adjustment has occurred based on weigh feedback. Reset this number to 1.0000 when new material is used (unless it is of the same consistency as the original material). See RATE ADJ RESET on page 33.

TOTAL: Total amount metered since turnover or reset of totals. Totals can be reset. VIEW / RESET TOTALS on page 34.

OFF TIME: The number of milliseconds of off-time per second, of the stepper motor, to meter the correct rate.
MAGUIRE MGF Feeder optional Loader Installation

1. Assemble the red hose and fitting that is shown in figure 1, secure these items to the control bar.

2. The other end of the red hose is connected to the vacuum generator as shown in figure 2. Secure hose with the hose clamp that is provided.

3. The aluminum lance is affixed to the other end of the vacuum generator.

4. The clear material hose is pushed onto the tube located on the lid of the feeder hopper. If the tube goes on with resistance, a little water can be used to lubricate it. Do not use any other lubricant. Figure 2.

5. Connect the clear 3/8” diameter tubing to the vacuum generator as shown in figure 3, and connect the other end to the push in fitting at the solenoid.

6. Connect the air supply to the brass 45° X ¼” NPT fitting at the input side of the solenoid mounted on the control bar.

7. The air supply should be set and regulated at a pressure between 60 and 80 PSI.

8. Connect the feeder motor cables to the matching connectors on the controller, motor and solenoid.

9. After the MGF Feeder Loader is installed, the MGF should be re-calibrated using the procedure found on page 25.

It is important that the feeder assembly is properly grounded through the equipment that is installed.

FIGURE 1
Secure the red material hose under the supplied u-clamp as shown in figure 1. It is important that the upper u-clamp is secured to the metal fitting as shown for proper grounding. The solenoid should be affixed to the controller bar.

FIGURE 2
Install the end of the clear material hose to the top of the feeder lid as shown.

FIGURE 3
Mount vacuum generator as shown, to alum lance and red hose with hose clamp.

FIGURE 4
Use the natural arc of the hose to loop above the hopper to the location where the u-bolts are attached.
AGL Loader Diagram

NOTES:
Plumbing Installation:
Use 1/4 pipe or 3/8 hose for runs up to 25' long. For runs between 25' & 50', use 3/8 pipe or 1/2 hose; and for more than 50' runs, use 1/2" pipe or larger.

Compressed air should be oil-free and filtered for at least 40 microns. It should supply at least 15 SCFM @ 80 PSI.
MAGUIRE PRODUCTS, INC.

AGL Loader Solenoid Wiring Assembly

SK-1207

Solenoid Wiring Diagram:

- **Controller**
  - **Strain Relief** (206062-6)
  - **Connector** (206429-1)

Legend:

- **Pin 1** = RED (+24 VDC)
- **Pin 2** = BLACK (0 VDC)
- **Pin** = AMP Male Connector

Wiring Connections:

- **Positive Air Supply**
- **Positive Black**
- **Negative Red**
MAGUIRE PRODUCTS, INC.

GRAVIMETRIC AUGER FEEDERS

CONTROLLER SIDE

24 VDC
Solenoid

Motor Side

(A) Pin Amp Male Connector

Legend
PIN#1=WHITE
PIN#2=BLACK
PIN#3=BLACK (SOL)
PIN#4=BLUE

NOTES:
Wires spliced at the connector

LEGSAND
PIN#1=WHITE
PIN#2=BLACK
PIN#3=NOT USED
PIN#4=BLUE

LEGSAND
PIN#1=WHITE
PIN#2=BLACK/RED(SOL)
PIN#3=BLACK (SOL)
PIN#4=BLUE

Socket = #epgm05
CONNECTOR=(206430-2) #epgm06
STRAIN RELEIF=#epgm11

PIN= #epgm04
CONNECTOR= (206429-1)= #epgm01
STRAIN RELEIF= #epgm11

GEN 3

MGF-AGL LOADER GEN-3, SOLENOID WIRING ASSY

Drawn by: DWG  Date drawn: 5.21.13
Material: Paint/Finish:

http://www.maguire.com

SK-0521
mgf/solenoidvalveassy/g3
MAGUIRE PRODUCTS, INC.

GRAVIMETRIC AUGER FEEDER®

MGF Wiring Diagrams
PRINCIPLE OF FEEDER OPERATION

The MAGUIRE GRAVIMETRIC FEEDER is a rugged industrial auger feeder designed to meter precise quantities of color concentrate very accurately into the main flow of virgin material directly above the throat of your process machine. The two 10" square steel plates, separated by 4 steel corner posts, form a sturdy, low profile adaptor assembly. This assembly is drilled with the proper bolt pattern and mounted to the throat of your process machine under the main material hopper. Natural material flows through the adaptor.

On this adaptor frame, we hang the weighing platform, which then, in turn, supports the hopper and auger assembly. To ensure accurate weight readings, the hopper assembly does not contact any stationary part. The ease of removal allows for easy clean-out of the hopper for color changes. Two butterfly latches allow easy removal of the auger / motor assembly for complete access to all areas for 100 percent cleanout.

Virgin material flow is visible through the flow chamber, which uses clear acrylic plastic windows and stainless steel baffles. The baffles direct the flow of natural material so that color is dropped into the flow from an air space and is evenly distributed over a steady and predictable flow of natural material. This assures uniform distribution of color into the natural material. The windows provide a clear operator view of the combined flow.

The hopper holds up to 10 pounds of concentrate. Four sight glasses provide a view of the material level.

PRINCIPLE OF CONTROLLER OPERATION

The MAGUIRE Gravimetric Controller coupled with two loss in weight load cells, provides the precise speed regulation and metering control necessary to assure absolute accuracy over your color usage. Metering rate is directly related to motor speed or motor run time. Accuracy is obtained by controlling the exact degree of off-time of the motor. Feed back from the load cells confirms the actual dispense and motor off-time is then adjusted to assure perfect dispense weights over time.

Though use of a stepper motor, RPM is precisely controlled in increments of 200 steps per revolution, allowing metering to occur uniformly over the entire screw return cycle (for injection molding applications) or though continuous operation (for extrusion applications). The metering rate is constantly monitored and adjusted to maintain accuracy. Changing cycle times or fluctuations in plant voltage are automatically detected and compensated for with no effect on metering accuracy.

DECOMMISSIONING AND DISPOSAL

Decommissioning the unit: Disconnect the unit from the power supply. Disconnect the compressed air supply. Cut all Electrical cables & Pneumatic Hoses to decommission the equipment. Disposal: Remove air hoses and inspection glasses and dispose of with plastic refuse. Remove electric motor dispose of with metal. Remainder of unit dispose of with metal. Controller: Remove battery and dispose of battery with hazardous waste. Remainder of controller dispose of with electronic waste. Re-cycle any hazardous materials/substances in accordance with the Local & National regulations of the End User e.g. Lithium batteries etc, specific attention should be paid to the European RoHS & WEEE Directives; remove any ‘sharps’ and dispose of in accordance with Local & National regulations.
WARRANTY - Exclusive 5-Year

MAGUIRE PRODUCTS offers one of the MOST COMPREHENSIVE WARRANTIES in the plastics equipment industry. We warrant each Feeder manufactured by us to be free from defects in material and workmanship under normal use and service; our obligation under this warranty being limited to making good at our factory any Feeder which shall within FIVE (5) YEARS after delivery to the original purchaser be returned intact to us, transportation charges PREPAID, and which our examination shall disclose to our satisfaction to have been thus defective; this warranty being expressly in lieu of all other warranties expressed or implied and of all other obligations or liabilities on our part, and MAGUIRE PRODUCTS neither assumes nor authorizes any other persons to assume for it any other liability in connection with the sale of its products.

This warranty shall not apply to any Feeder which shall have been repaired or altered outside MAGUIRE PRODUCTS factory, unless such repair or alteration was, in our judgment, not responsible for the failure; nor which has been subject to misuse, negligence or accident, incorrect wiring by others, or installation or use not in accord with instructions furnished by Maguire Products.

Our liability under this warranty will extend only to Feeders that are returned to our factory in Aston, Pennsylvania PREPAID.

It should be noted, however, that we strive to satisfy our customers in whatever manner is deemed most expedient to overcome any problems they may have in connection with our equipment.
Technical Support and Contact Information

Maguire Products Inc.
11 Crozerville Road
Aston, PA 19014
Tel: 610.459.4300
Fax: 610.459.2700
Email: info@maquire.com
Web: www.maguire.com

Maguire Europe
Tame Park
Tamworth
Staffordshire
B775DY
UK
Tel: + 44 1827 265 850
Fax: + 44 1827 265 855
Email: info@maquire-europe.com

Maguire Products Asia PTE LTD
Main Office
15 Changi North Street 1
#01-15, I-Lofts
Singapore 498765
Tel: 65 6848-7117
Fax: 65 6542-8577
E-mail: magasia@maquire-products.com.sg