

# MGF-ST Series Gravimetric Feeder



## OVERVIEW

Overview of our Maguire  
WSB Feeder Range...



## HOW IT WORKS

Simple, accurate,  
affordable and easy  
to use...



## PRODUCT INFORMATION

View our full technical  
specification and product  
features...



## CONTACT

Find out where your  
nearest Maguire Partner  
is located...

**ELIMINATE WASTE  
OF COLORANTS AND  
ADDITIVES**

**MAGUIRE**<sup>®</sup>  
*Intelligent Simplicity*

# OVERVIEW



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.



## 3 STANDARD MODES OF OPERATION

Cyclical, continuous, extrusion following.

## 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  $\pm 0.2\%$ .

## AUTOMATIC RE-CALIBRATION ENSURES CONTINUOUS ACCURACY

Automatic adjustments guarantee that feed rate is held to within  $\pm 0.2\%$  of desired let-down ratio.

## EASY-TO-USE MICROPROCESSOR CONTROLLER SAVES TIME

User-friendly controller has intuitive setup procedure.

## 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.



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

Up to  
**18 kg/hr**  
Injection  
molding

Up to  
**55 kg/hr**  
Extrusion

# PRODUCT INFO



## Technical Specifications

	MGF-3-ST		MGF-4-ST		MGF-8-ST	
	Inches	mm	Inches	mm	Inches	mm
Auger Diameter	3/8"	9.5	1/2"	12.7	1"	25.4
Extrusion	lb/hr*	kg/hr*	lb/hr*	kg/hr*	lb/hr*	kg/hr*
Minimum Rate	0.4	0.18	0.6	0.3	4	1.8
Maximum Rate	8	3.6	40	18	120	55
Injection	shot size x LDR / screw recovery = grams/second					
Maximum Rate	1 gm/sec		5 gm/sec		20 gm/sec	
Minimum Dispense	0.25 gram		0.5 gram		5 gram	

\*Based on material density of 55lb/ft<sup>3</sup> (881 kg/m<sup>3</sup>)

### MGF Configuration – ST vs. STV

The standard MGF-X-ST stepper configuration can be used for either injection or extrusion applications. The injection mode utilizes a contact closure from the machine as a means of detecting the plastification time while the extrusion mode input will accept a 0-10 Vdc proportional signal from the extruder drive.

MGF-X-STV is the alternate option. The input circuitry is voltage sensing. The V suffix represents voltage and is a different circuit board which does not have extrusion following capability. This model is **injection only**.

- X = 3 for 3/8"
- X = 4 for 1/2"
- X = 8 for 1"



Maguire reserves the right to cancel product or change product, product specifications and data without notice to improve reliability, function, design or otherwise.

Dry Contact Signal (typically newer machines)			24-120 Volt Signal (typically older machines)		
MGF-3-ST	MGF-4-ST	MGF-8-ST	MGF-3-STV	MGF-4-STV	MGF-8-STV
3/8" Auger	1/2" Auger	1" Auger	3/8" Auger	1/2" Auger	1" Auger
Stepper motor	Stepper motor	Stepper motor	Stepper motor	Stepper motor	Stepper motor
Dry contract injection	Dry contract injection	Dry contract injection	24-120 volt injection signal	24-120 volt injection signal	24-120 volt injection signal
0-10 extrusion	0-10 extrusion	0-10 extrusion	-	-	-

MGF Machine Mounting Frames				
Model	Throat Mounting Adaptor	Frame	Feed hole	Material Baffle with Sight Window
865-40	For smaller injection molding machines and extruders	-	-	-
SGF-3	For large extruders and injection molding machines	Black square 10" x 10"	3"	Included with MGF – only additional frames
SGF-4	Throat adapter	Black square 10" x 10"	4"	In lieu of SCF standard
SGF-5	Throat adapter	Black square 10" x 10"	5"	In lieu of SCF standard
OPF-P40	Pedestal throat mount adapter	Black square 8" x 8"	3"	In lieu of SCF frame
OPF-MKT*	Throat mount adapter	White frame 8" x 8"	3"	In lieu of SCF frame

\*MGF option with tower bin

MGF-ST Remote Controller and Loader Kit Extension kits for remote mounting of the control box	
Model	Cable drop
AEK-GSC-05	5ft (1.5m)
AEK-GSC-10	10ft (3m)
AEK-GSC-20	20ft (6m)
AEK-GSV-05	5ft (1.5m)
AEK-GSV-10	10ft (3m)
AEK-GSV-20	20ft (6m)

MGF Single Material Gravimetric Feeder – MGF Screw Conversion Kits		
Model	Convert to	Stepper Motor*
kitF-001	3/8" Auger	without
kitF-001M	3/8" Auger	with
kitF-002	1/2" Auger	without
kitF-002M	1/2" Auger	with
kitF-005	1" Auger	without
kitF-005M	1" Auger	with

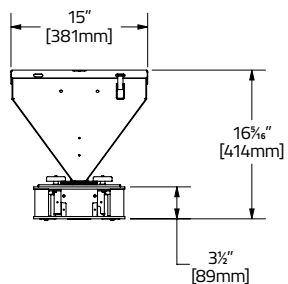
\*For frequent changes KIT with Motor recommended

MGF Venturi Loader System Venturi operated automatic loading system – MGF Hopper	
AGL-ST	Stepper motor

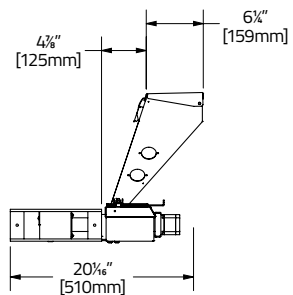
MGF Remote Alarm	
OPF-GRA	Factory fitted USA
kitF-003	Field retrofit

MGF Spare Controller	
ACA-GS	Generation 6 stepper motor (dry contact)
ACA-GSV	Generation 6 stepper motor (voltage signal)

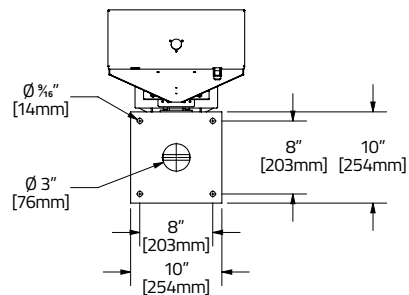
**MGF-ST**



**Front View**

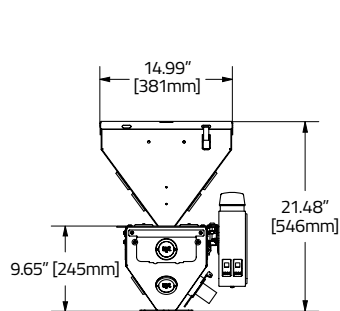


**Side View**

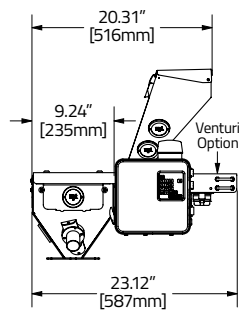


**Top View**

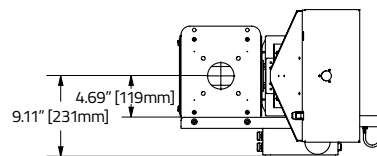
**MGF Throat Mount Adaptor with White Frame 8" x 8"**



**Front View**

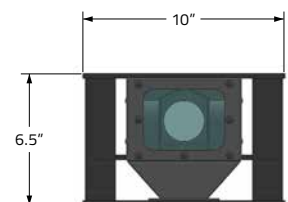


**Side View**

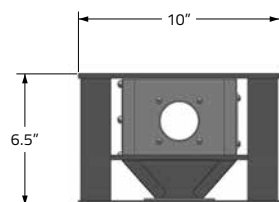


**Top View**

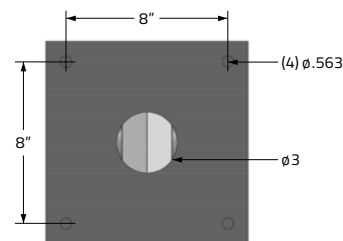
**SGF – MGF Throat Mount Adaptor with Black Frame**



**Front View**



**Side View**



**Top View**



*To the left the image shows our MGF throat mount adaptor with white 8" x 8" frame. Above is an example of our MGF throat mount adaptor with black square frame.*



**Throat adaptor has blind flanges for customer drilling**

**EXCLUSIVE FEATURES**

**AGL Venturi Loader**

*Cost effective loading solution, ensures dosing accuracy of ± 0.2% of set point. Loader is automatically activated by the MGF controller.*



# HOW IT WORKS



## Simple, accurate, affordable

The MGF proven loss-in-weight technology automatically calibrates itself, totally eliminating manual catch-and-weigh calibration procedures and even more common and erroneous guessing of metering rates.

- **No tools required for assembly or removal of load cell assembly, hopper and metering device.**
- **The throat adapter fits readily on most processing machine throats and easily supports nearly any main material supply hopper.**



### ◀ No Tools Required

Load cell assembly slips easily into place. The metering device is locked in place by two clips and can be quickly removed.

### Dual Load Cells ▼

Hopper is mounted on two load cells to prevent distorted readings from cantilevered loads in the hopper.



### ◀ Fast Clean-out and Replacement

Aluminum hopper with brushed exterior holds up to 25lb (11kg) of material. Easy removal and replacement of supply hopper allows fast material change. Spare supply hoppers and hopper extensions are available.

# Easy to use the Microprocessor Controller

- Large, user-friendly keypads for easy input
- Backlit LCD display
- Can be mounted remotely with optional extension cables
- Password protection.



**IMPORTANT**  
Alarm light indicates low-load (2-3 lb) in hopper.

## Easy Set-up

- 1** Choose the mode of operation for your process: **CYCLE** for injection **OR CONTINUOUS, EXTRUSION FOLLOWING** or **RATE** for extrusion applications.
- 2** Enter let-down ratio "LDR" and either shot size "SHOT / WT" or extruder output "LBS / HOUR" Press "RUN".
- 3** As material is metered into the feed throat, the dual load cells under the loss-in-weight hopper detect material usage. Loss-in-weight data is gathered by the controller and monitored continuously.

<p>ENTER PASSWORD -----</p> <p>Password Protection</p>	<p>INJECTION</p> <p>==== SETTINGS ====</p> <p>CHANGE PASSWORD</p> <p>▶MODE: CYCLE</p> <p>UNITS: US▼</p> <p>↓</p> <p>==== MAIN MENU ====</p> <p>▶SHOT WT 2000 G</p> <p>LDR 3.00%</p> <p>===== 1866 =====</p>
<p>==== CALIBRATION ===</p> <p>▶ZERO CALIBRATION</p> <p>FULL CALIBRATION</p> <p>Easy Initial Calibration</p>	<p>EXTRUSION</p> <p>==== SETTINGS ====</p> <p>CHANGE PASSWORD</p> <p>▶MODE: CONTINUOUS</p> <p>UNITS: US▼</p> <p>↓</p> <p>==== MAIN MENU ====</p> <p>▶LBS/HOUR 275</p> <p>LDR 3.00%</p> <p>===== 1867 =====</p>
<p>==== METERING =====</p> <p>▶MOTOR FACTOR 5.50</p> <p>ADJUST. TRIP 5%</p> <p>LOW WEIGHT 09</p> <p>Adjustable low-weight alarm for supply hopper</p>	<p>Loader Weight Settings</p> <p>===== LOADER =====</p> <p>▶LOADER ON</p> <p>LOADER ON 10009</p> <p>LOADER OFF 20009▼</p>





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