

MAGUIRE PRODUCTS INC.

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PFS PRESSURE FEED SYSTEM®

**Model PFS®**

MAGUIRE PRESSURE FEED SYSTEM

INSTRUCTION MANUAL



# Maguire Products Inc.

## Model PFS PRESSURE FEED SYSTEM

### Table of Contents

<b>PFS Overview</b>	<b>5</b>
<b>PFS Installation</b>	<b>6</b>
<b>Setup and Startup Instructions</b>	<b>7</b>
<b>Description of Controls</b>	<b>9</b>
<b>Exploded Parts View</b>	<b>10</b>
<b>Warranty</b>	<b>11</b>
<b>Technical Support and Contact Information</b>	<b>12</b>

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To every person concerned with use and maintenance of the PFS pressure feed system 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

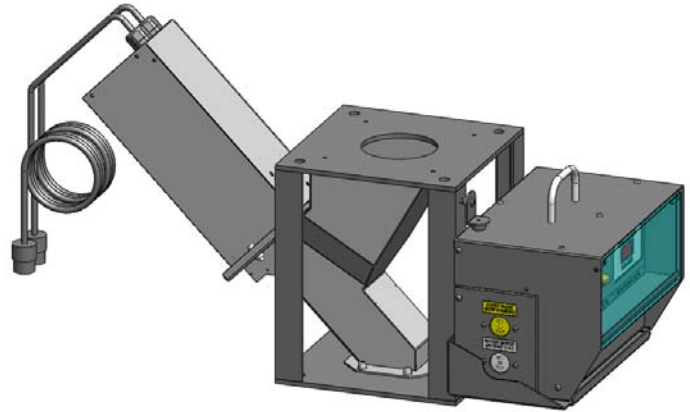
Phone: 610.459.4300  
Fax: 610.459.2700

Website: <http://www.maguire.com>

Email: [info@maguire.com](mailto:info@maguire.com)

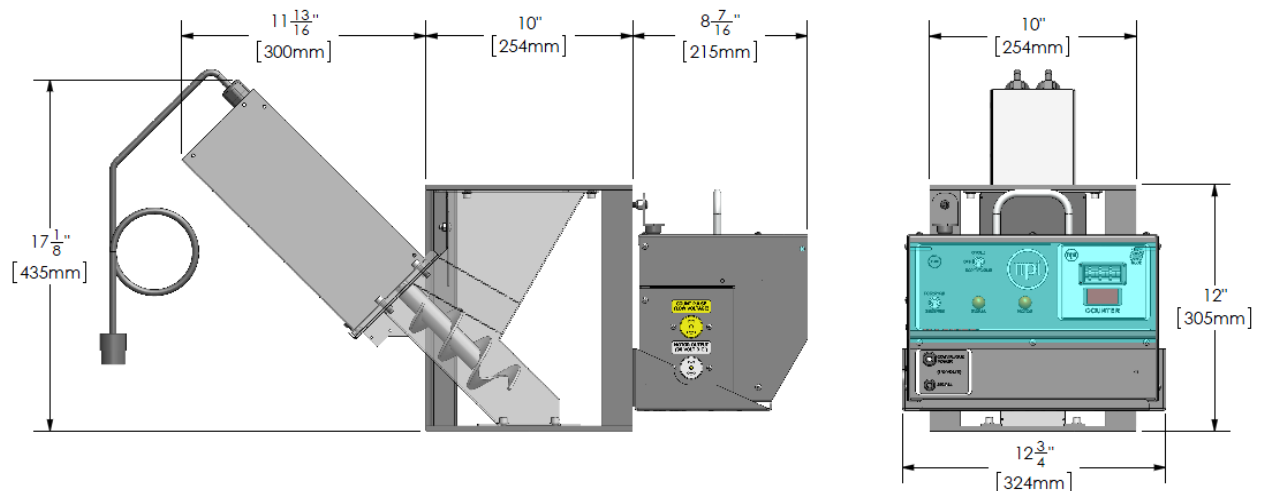
# Maguire PFS Overview

The Model PFS pressure feed system guarantees a constant material flow through a Linemaster® LIW unit when feeding back fluffy edge trim regrind directly into the extruder throat. The Model PFS pressure feed system, weighing less than 50 pounds, is compact and easy to install. It is installed directly on the edge trim feeding station and below the LIW unit above the extruder throat, adding only 12 inches to the height of the LIW.



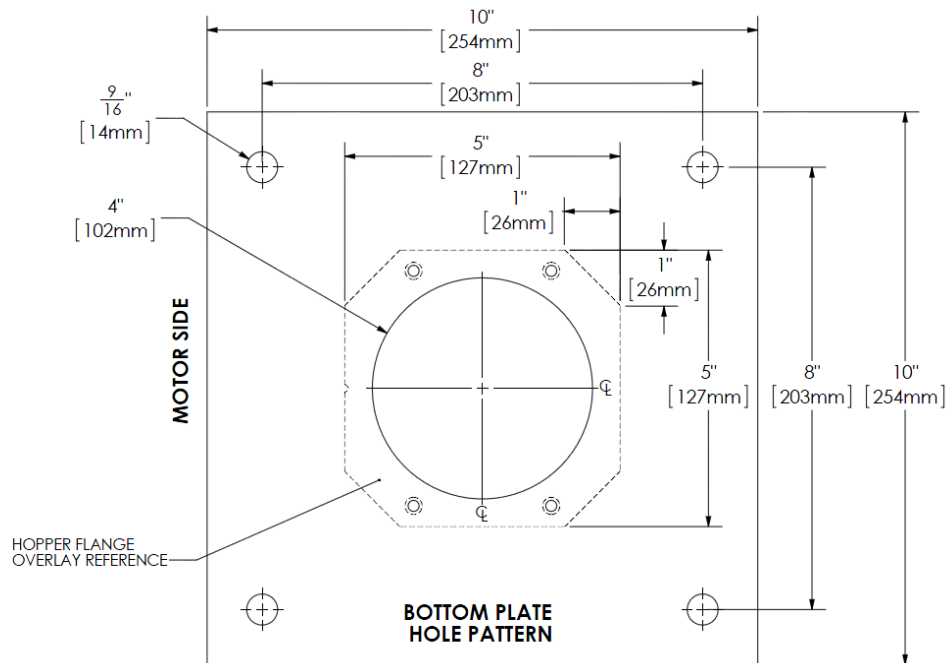
## PFS Key Features

1. Single piece all stainless steel material hopper.
2. Stainless steel auger blade directly coupled to drive motor.
3. Ability for the controller to be remote mounted up to 10 feet from the unit.
4. Controls also allow the operator to operate the unit MANUALLY for testing or for production when the operator wishes to have full manual control over feed rate.
5. Controls are microprocessor-based with full noise suppression and transient voltage protection developed over many years of actual in-plant operation under the most demanding industrial environments.
6. Motor speed regulation is precisely held through digital tachometer feedback. Plant voltage fluctuations have no adverse effect on metering rates.
7. The PFS pressure feed system with controls is compact and easy to install, weighing less than 50 pounds.



## Installation

1. This unit is shipped to you fully assembled.
2. In selecting the proper ORIENTATION for mounting, consider the following:
  - Easy viewing and access to the controller front panel
  - Non-interference with removal / installation of the LIW hopper
3. If necessary, locate and drill the proper bolt pattern on the bottom plate of the 10" square ADAPTOR frame to allow it bolt directly to feed throat or other equipment.



4. The LIW will fasten to the top plate of the frame.
5. A 110 or 230-volt single phase power source is required for operation.
6. **WIRING:**
  - a. Connect the Black 110 VAC (or 230 VAC) cord into a power source.
  - b. Locate the Black lead labeled "0-10 VDC". This lead has two wires:
    - Black (+) positive 10 VDC
    - White (-) negative 0 VDC
    - Connect these wires to your extruder's 0-10 VDC .
  - c. Plug the two cables from the rear of the motor to the side of the controller.
    - Yellow plug into yellow receptacle (Motor speed feedback signal)
    - White plug into white receptacle (Motor control drive signal)

## SETUP / STARTUP INSTRUCTIONS - EXTRUSION FOLLOWING CONTROLLERS

1. The power cord must be plugged into any 110-volt continuous power outlet.
2. The 0-10 VDC line provided must be installed from the extruder to the controller. On the extruder, this line must be connected to the 0-10 VDC for following.
3. CALIBRATION OF ELECTRONICS - (required one time only):  
Calibration is necessary to match feeder electronics to the particular voltage output of your extruder. In the upper right corner of the front of the controller, there is a small access hole (labeled "MODE"). This provides access to a small one-turn trim pot. This trim pot must be adjusted one time only for your extruder. To do this:
  1. Set the controller to 100.
  2. While your extruder is running, adjust the trim pot so that the display represents the percent (%) of full speed that the extruder is running. For example, if your extruder is capable of running 150 RPMs and is currently at 50 RPMs, adjust the trim pot until the display (labeled "COUNTER") reads 33 (i.e., 33% of full speed).
  3. After this is done, your controller is calibrated and the formula provided will now be accurate for setting the digital counter for each particular job.

**NOTE:** The MANUAL-OFF-EXTRUSION FOLLOWING switch should be in the Extrusion Following position for normal operation. The MANUAL position will allow you to force the controller to run even when the extruder is not running, or running very slowly. In this mode, controller speed will follow the setting of the digital counter and may be controlled accordingly. FLUCTUATION OF SPEED IS NORMAL IN THIS MODE.

**NOTE:** If your following voltage is very low, you may not be able to reach a high enough motor speed even when the calibration knob is turned to its maximum position. If this happens, do the following:

1. Set calibration knob in its middle position 1/2 way between full left and full right.
2. On the back of the controller, you will note an Allen head screw located at the lower left when facing the back panel. This screw serves to prevent access to another adjustment pot. Remove the screw and use this adjustment to obtain the proper display as required in Step 2 above. This is a coarse adjustment. Replace the screw and fine tune with the calibration pot in front.

If you have calibrated your unit properly, the following should occur:

$$\frac{\text{Display number}}{\text{Setting number}} = \frac{\text{Current extruder speed}}{\text{Maximum extruder speed}}$$

**At FULL SPEED, number displayed will EQUAL Counter setting.**

**At HALF SPEED, number displayed will be HALF of setting.**

**At REST, (0 voltage) number displayed will be 0.**

**IF** the controller continues to run and display a number when no extrusion voltage is present; recalibrate the electronics as follows.

Repeat low following voltage calibration steps 1 and 2 above this time setting the controller to 500 instead of 100. This means that if you were operating at 100% voltage your controller will display 100 while set at 500. All formulas mentioned in this manual will be multiplied by (5).

$$\frac{\text{Display number X 5}}{\text{Setting number}} = \frac{\text{Current extruder speed}}{\text{Maximum extruder speed}}$$



## DESCRIPTION OF CONTROLS and OUTPUTS

### 1. MANUAL-OFF-EXTRUSION FOLLOWING SWITCH

**EXTRUSION FOLLOW:** The controller will follow the speed of the extruder based on the voltage signal that it receives from the extruder.

**OFF:** Will prevent the controller from running and will remove power to the computer controls. If a voltage spike transient power surge should cause the processor to become "confused", switching to OFF may be necessary to re-start the processor.

**MANUAL SPEED CONTROL:** The controller will run continuously as long as 110-volt power is present at the controller power cord. Speed is controlled by and directly follows the setting of the thumbwheel switch.

The MANUAL-OFF- EXTRUSION FOLLOWING switch should be in the FOLLOW position for normal operation. The MANUAL position will allow you to force the controller to run even when the extruder is not running, or running very slowly. In this mode, controller speed will follow the setting of the digital counter and may be controlled accordingly. SOME FLUCTUATION OF SPEED IS NORMAL IN THIS MODE.

### 2. MOTOR FORWARD/REVERSE SWITCH

This switch should be in the FORWARD position for all normal operation. Holding the switch down in the REVERSE position will cause the controller motor to run backwards. In the center position the switch is OFF.

### 3. THUMBWHEEL SWITCHES

In the FOLLOW mode, the thumbwheel switch setting determines the MAXIMUM rate of speed of the controller. This is the rate of speed you would expect when your extruder is running at 100% of full rated speed. In the MANUAL mode, the setting directly controls the RPMs of the motor output shaft.

### 4. DISPLAY WINDOW

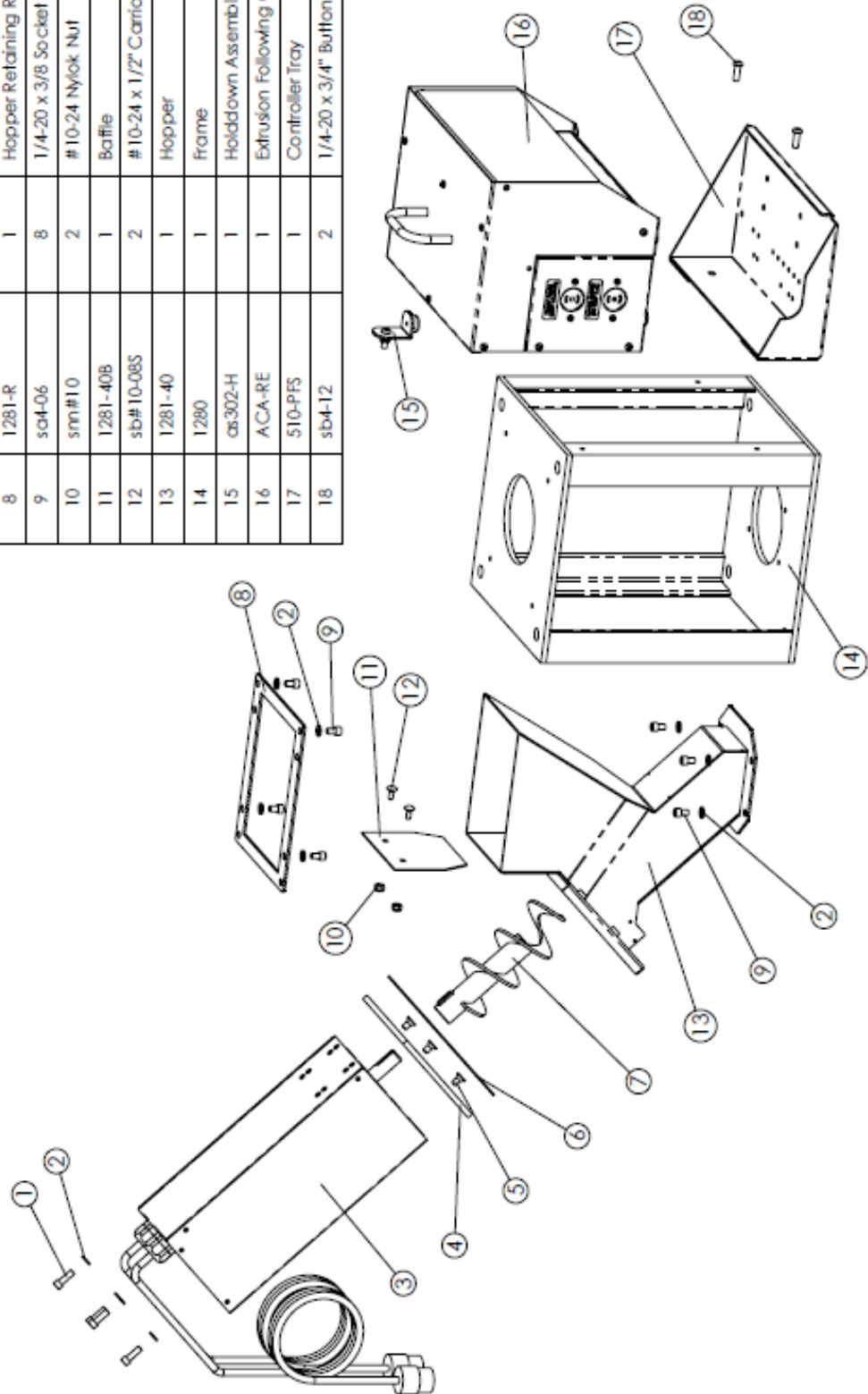
The window will display motor RPMs. Flashing of this display at half-second intervals indicates that the motor is not running at the full speed that is necessary to deliver the quantity of material requested by the counter setting.

### 5. SIGNAL AND MOTOR LIGHTS

The Signal Light indicates power is present at the signal cord; in other words, the process machine screw is turning. The Motor Light indicates the computer processor is outputting a D.C. voltage to the controller motor; the motor is turning.

**PRESSURE FEED SYSTEM EXPLODED VIEW**

ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
1	sa4-12	4	1/4-20 x 3/4" Socket Head Cap Screw
2	swL4	12	1/4" Split Lock Washer
3	arm2S1F	1	Remote Motor Assembly
4	1282-MF	1	Motor Shim
5	sl4-08	3	1/4-20 x 1/2" Flat Head Cap Screw
6	1282-CF	1	Cover Plate
7	1283-40W	1	Auger Weldment, 2-1/2"
8	1281-R	1	Hopper Retaining Ring
9	sa4-06	8	1/4-20 x 3/8 Socket Head Cap Screw
10	snn#10	2	#10-24 Nylok Nut
11	1281-40B	1	Baffle
12	sb# 10-08S	2	#10-24 x 1/2" Carriage Screw
13	1281-40	1	Hopper
14	1280	1	Frame
15	as302-H	1	Holddown Assembly
16	ACA-RE	1	Extrusion Following Controller, Remote
17	510-PFS	1	Controller Tray
18	sb4-12	2	1/4-20 x 3/4" Button Head Cap Screw



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## WARRANTY - Exclusive 5-Year

MAGUIRE PRODUCTS offers one of the MOST COMPREHENSIVE WARRANTIES in the plastics equipment industry. We warrant each PFS pressure feed system 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 PFS pressure feed system which shall within FIVE (5) YEARS after delivery of such PFS pressure feed system 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 PFS pressure feed system 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 PFS pressure feed system 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@maguire.com](mailto:info@maguire.com)  
Web: [www.maguire.com](http://www.maguire.com)

**Maguire Europe**  
Tame Park  
Tamworth  
Staffordshire  
B775DY  
UK  
Tel: + 44 1827 265 850  
Fax: + 44 1827 265 855  
Email: [info@maguire-europe.com](mailto:info@maguire-europe.com)

**Maguire Products Asia PTE LTD**  
Main Office  
No. 15 Changi North Street 1  
#01-15, I-Loft  
Singapore 498765  
Tel: 65 6848-7117  
Fax: 65 6542-8577  
E-mail: [magasia@maguire-products.com.sg](mailto:magasia@maguire-products.com.sg)

**Maguire Italy**  
Via Zancanaro 40  
35020 Vigorovea (PD)  
Tel: +39 049 970 54 29  
Fax: +39 049 971 18 38  
Email: [info@maguire-italia.it](mailto:info@maguire-italia.it)