

# **Operation Instructions and Technical Information Guide**





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## Table of Contents

- Section 1: Machine Overview
- Section 2: Set-Up and Operation
- Section 3: Operational Troubleshooting
- Section 4: Wiring and Electrical Detail
- Section 5: Maintenance
- Section 6: Components
- Section 7: Warranty



## Section 1 Machine Overview

Please review the components and descriptions to become familiarized with the XTREME XM-1 Versatile Feeding Solution.





#### Section 2 Setup and Operation

This section will walk you through setup and operation of the XTREME XM-1 Versatile Feeding Solution.

For a video demonstration of basic feeder set up, visit <u>http://www.superior-</u> phs.com/feeding.htm and click on the QUICK VIEW video link at the top of the page.



Figure 1

Separator Setup...... The separator (figure 1) is the device that allows products to be separated from the stack in the hopper. To adjust, simply turn the separator knob clockwise to increase the gap, counter-clockwise to decrease the gap.

> Advance one piece of product underneath the separator rollers (figure 2). Slide the piece forward and backward while turning the separator knob (figure 3) to create a medium drag on the piece.



Figure 2

Make certain that the drag is not too tight or too loose. If the drag is too tight, the rollers may "mark" some products or prevent products from advancing causing miss-feeds. If the drag is too loose, the rollers will allow extra products to advance at the same time causing double feeds.

Note: the separator is equipped with a gear motor that automatically rotates the separator rollers as the feeder is running. For most products, forward rotation is recommended. The reverse rotation setting is typically used for products that have a higher coefficient of friction like uncoated sheets, cardboard, chipboard, etc. When changing from either connection, make sure to power off the feeder first.



Figure 3



#### Hopper Setup.....



Figure 1



Figure 2

The hopper consists of a cross mount plate, a center plate, side guides, side guide clamps, and lever handles (figure 1). The cross mount and center plate are nonadjustable fixed components. The side guides are adjustable side-to-side to allow for different product widths. Each side guide has two rods installed to reduce drag, reduce pinch-points, and reduce possible "marking". The rods can be adjusted up and down to assist in skew control (figure 2).

For product thicknesses of 1/4" and under, the hopper assembly should be mounted in the lower slot of the "E" mount. For thicker products, loosen the fasteners and slide the assembly up (1/4-1/2 and 1/2-3/4). NOTE: you will need to perform the same operation on the hold down assembly.

For products 3.25" wide up to 12" wide, simply loosen the lever handles and manually slide the side guide(s) to the desired position. Tighten the lever handle(s) when completed.

For products 2" wide up to 3.25" wide, "flip-flop" the two side guides (figures 3) so that the smooth sides of the side guides are now on the inside. This is done by removing the screws that fasten the side guides to the side guide clamps. Swap the side guides and refasten using the same screws.

Proper setup allows approximately 1/16 to 1/8 inch clearance from the side guides to the product.



Figure 3





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Wedge Support Setup.....



Figure 1





Figure 2

The Wedge Support provides "lift" to the rear of the product as it is in the hopper. The amount of lift and wedge configuration will depend on the type of product. Typically, products that are rigid need less lift/support than products with less rigidity. Adjustment of the wedge will also, in part, determine the amount of overlap of the products as they pass through the separator rollers.

To adjust the wedge support, simply loosen the tightening fasteners and slide the assembly forward or backward. A good starting point is a lift angle of approximately 20-degrees on the first piece. Depending on your product, you may need to increase or decrease this angle once more product is loaded and you have test run a few cycles. Next, slide the black wedge blocks side-to-side to accommodate the width of your product.

The Standard Wedge configuration (figure 1) is ideal for most products typically in the 5" to 12" lengths. This wedge by itself is typically used for products that have medium to heavy "body" such as; card stock, chipboard, greeting cards, and more. Included in this assembly are two rear guides to assist in containing the product and prevent "skew".

The Roller Support Wedge (figure 2) is an addition to the Standard Wedge configuration and is ideal for most products typically in the 6" to 12" lengths. This wedge combination is typically used for products that have light to medium "body" such as; sheets, labels, magazines, and more. The Roller Support Wedge Assembly fastens directly to the two drop blocks on the Standard Wedge shafts using (4) thumbscrews. They are also adjustable in and out to provide just enough or extra lift to flimsy stocks.



Wedge Support Setup Continued......

Figure 3 shows a side view position of this wedge configuration and figure 4 shows a rear view.



Figure 3



Figure 4



Figure 5

The Small Product Extension Wedge (figure 5) also attaches to the Standard Wedge. This combination allows the assembly to advance in far enough to properly support products shorter in length such as business cards, plastic cards, and more. It also features a mounting design that allows the extensions to tilt toward the rear and out of the way for when you need to change over to longer products (figure 6).



Figure 6



Discharge Setup.....



Figure 1

The discharge hold down (figure 1) is designed to assist in accelerating the product to create a gap between them. This assembly consists of self adjusting spring loaded wheels and two "fine-tune" adjustment screws/springs.

The "fine-tune" adjustment screws/springs (figure 2) allow for additional or less tension to be applied to the product as it passes through the discharge of the feeder. The rear adjusting screw is located just behind the cross bar and the front one is located through the opening on the sensor mount bracket



Figure 2 (top view)

Set the "Sheet-Detect" photo-eye to the desired position. A good starting point is between the last two shafts. Make sure it is not positioned over the shaft. The indicator on the photo-eye should be off when there is no product present.



Figure 3

Also included is an adjustable deflector (figure 3) that is designed to help direct product to the machine it is dispensing to. It also helps to kick the rear down in batch counting applications to prevent jams.



#### Setup Verification.....

Now that all setup has been performed, manually verify the flow of product through the unit (be certain that there is no power to the unit at this time). This can be done manually by turning the discharge belts using your hand.

Simply place your hand at the very end of the discharge belts (belts under the roller-hold-down). In a downward motion, push the belts to simulate the feeding routine. You may want to do this several times until you are satisfied with the feeding characteristics.

Observe how the product enters and exits the separator. There should be a slight overlap of the product as it exits the separator. If there is too much overlap, chances are that the separator is set too loose. If there is little to no overlap, chances are that the separator is set too tight (see Operational Troubleshooting for more detail).

Once you are satisfied with the overall setup, the next step is to power-up the unit and run.

#### Operation.....

Before applying power, set your variable speed control fully counter clockwise...NOTE – Belts will still run.

- Load Product. Preshingle a 1" stack of material and load into the hopper. Make sure to maintain the preshingle effect so it matches that of the lead-in plate on the separator. All products are different in characteristics. While you may be able to load higher stack heights of one product, the next product you run may require lower stack heights for optimal performance. You will need to experiment by loading or unloading product to determine the effective stack heights for each product. As you start running, you can add or remove product.
- 2. **Apply Power.** It is important to make sure that you are applying the correct voltage to the unit. At the power entry module, the display will state 115v. You must only supply the power to the unit as stated on the module. Once power is applied and the Estop is in the "out" position, the feeder will start up (as long as it is not being inhibited by the host base).
- 3. **Main Speed.** To set the main speed for the application you are running, simply turn the main speed dial to the setting that suits the product best. This setting will vary from product to product so you will need to experiment based on line speed and control of the product as it is dispensed.
- 4. **Stop.** To stop the unit, simply press the red e-stop switch. The switch will latch to the "in" position. To run again, simply



pull the e-stop button out and the feeder will automatically start again.

5. **Shutdown.** It is best to completely power down the feeder when not in use. To do this, simply move the on/off switch (located on the power entry module) to the "off" position (O) and remove the product from the hopper.

# **Optional Set Up Information (Separator Assembly)**

#### **Repositioning the separating rollers**

The purpose of repositioning the separating rollers off the belt is to create a "flex" separation (figure 1) vs. nip point separation (figure 2). This can be done with the separator mounted or removed from the feeder. The preferred method is to remove the separator.



Figure 1



Figure 2

#### With separator assembly removed from the feeder

To remove the separator assembly, power off the feeder, remove all product from hopper, and disconnect the motor cable from the top plate connector. Then, remove the 4 screws that fasten the top block to the cross plate.

Each roller has two set screws (one fastens to the flat on the shaft). Loosen the set screws of the inside rollers and slide them to the outside rollers. Retighten the set screws making sure one of them is fastened to the flat on the shaft.

Reinstall the separator assembly and refer to the Product Guide for product set up. Note: since the rollers will now be adjusted slightly below the surface of the belt, the adjustment will be lower than previous setting.



#### Difficulty **Possible Cause Proposed Solution** No AC power to the unit 1. On/Off switch in Off 1. Move switch to On position (O). position (-). 2. Power cord loose or not 2. Check connection to AC plugged into AC source. source. 3. Power cord loose or not 3. Check connection to unit. plugged into unit. 4. Replace fuse(s) (consult 4. Blown Fuse(s) technician) Belts are turning but 1. Separator not properly 1. Review separator setup product is not feeding adjusted. instructions. 2. Hopper side guides are 2. Review hopper setup too tight. instructions. 3. Interlocking or adhered 3. Check product. 4. Consult with a qualified product. 4. Static technician. 5. Product stack-height too 5. Review Operation, Step low or too high. 1 instructions. 6. Slick feed belt. 6. Consult with a qualified technician, clean belt. **Double feeding** 1. Separator not properly 1. Review separator setup adjusted. instructions. 2. Wedge support not 2. Review wedge support properly adjusted. setup instructions. 3. Worn separator rollers. 3. Consult with a gualified 4. Separator rollers spin technician, replace rollers. 4. Consult with a qualified freely. technician, check separator drive belt and pulleys. Jamming or skewing 1. Improper setup. 1. Review setup 2. Interlocking or adhered instructions. product. 2. Check product.

## Section 3 Operational Troubleshooting



# Section 4 Wiring and Electrical Detail

125DV-C DC Drive Board



## Section 5 Maintenance

Please remember that all maintenance and service to the XTREME Continuous Feeding Solution should only be performed by qualified technicians. Always disconnect power before attempting any maintenance or service procedure.

#### Belts

Over time, you will notice "build-up" on the feed and discharge belts and the separator rollers. This is normal and is usually from the dust, finish, or coating normally on the products fed. Regular cleaning of the belts and rollers will extend their life.

Belts and rollers should only be cleaned with Isopropyl Alcohol.

A good practice is to clean the belts and rollers weekly.

#### Machine

It is always best to keep machines clean. Keep them dusted and free of spills.

Always inspect your machine for loose or damaged items and replace them immediately.



# Section 6 Components

### CARRIAGE ASSEMBLY



Item	Qty	Description	Part Number
1	1	Perforated Gum Rubber Feed Belt	100157
	1	Vacuum Block Manifold	100607
	1	90-degree barbed fitting	100613
2	2	Urethane Feed Support Belt	100158
3	1	Discharge Timing Belt 154XL037 GATES	100605
	1	Discharge Timing Pulley, Drive Shaft 18 tooth	100604
	1	Discharge Timing Pulley, End Shaft 15 tooth	100543
4	2	Urethane Discharge Belt	100159
5	2	Urethane Discharge O-Ring	100156



#### DRIVE BELT TENSIONER ASSEMBLY



ltem	Qty	Description	Part Number
1	2 1	R6 Bearing Shoulder Bolt  3/8 x 5/8 – 5/16-18	100135 100265
2	1	Shoulder Bolt 3/8 x 1-1/2 – 5/16-18	100262
	1 2	Spacer 3/8 ID Teflon Washer	100263 100425
3	1	Tensioner Pivot Block	100264





#### HOPPER ASSEMBLY

ltem	Qty	Description	Part Number
1	1	Right Side Guide	100204
	2	Offset Rod	100233
2	1	Center Plate	100201
3	1	Left Side Guide	100205
	2	Offset Rod	100233
4	2	Side Guide Clamp	100203
	2	10/32 x 1/2 Adjustable Handle	100373
5	1	Cross Plate	100199
	1	Slide Rail	100202



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#### WEDGE SUPPORT ASSEMBLY

Item	Qty	Description	Part Number
1	1	Right Guide	100235
2	4	Wedge Block	100222
3	2	Wedge Shaft	100220
4	1	Left Guide	100232
5	2	Slide Mount Block	100221



#### HOLD DOWN ASSEMBLY (3-piece design)



Item	Description	XM-12 Continuous
1	Bottom Section, 3pc Hold Down	100208C
2	Middle Section, 3pc Hold Down	100216C
3	Top Section, 3pc Hold Down	100208D
4	Dowel Pin	100688
5	¼-20 x 1.25 SHCS w/ nylon patch	SHCSNP 025 125 20
6	Micro Adjust Spring	100687
7	Cross Bar	100213
	Warning Label (not shown)	100375
8	8/32 x ¾ Flat Head Cap Screw	FHS 0832 075
9	Axle Shaft	100209
10	Bearing 1.75 OD	100214
11	E-Clip ¾	Eclip 3/4
12	¼-20 x 1 SHCS	SHCS 025 100 20
13	Sensor Rail	100259A
14	Pin Spring	100212
See page 30	Deflector Mount	100565
See page 30	Deflector Plate (narrow)	100566
See page 30	Knob 10/32 x 3/8 (deflector)	100619



#### **OPERATOR PANEL**



ltem	Qty	Description	Part Number
1	1	Speed Control Knob	100407
2	1	Stop Button Contact Block	105026 105027
3 4	1 2	AC Inlet Module Fuse, 6.25A Slo-Blo	100243 100942



#### CONTROLS



Item	Qty	Description	Part Number
1	1	DC Fan	100584
2	2	Power Supply	100583
3	1	Separator Motor Pulse Board Assembly Includes UHMW mount plate 100702 and connectors	100882
4	1	DC Drive Motor	100571
5	1	DC Drive Control Board	100946
6	2	20T Timing Pulley, 3FA	100585
7	1	Drive Belt, 5M	100586



#### SEPARATOR ASSEMBLY





#### SEPARATOR ASSEMBLY

Item	Description	XM-12 Continuous
1	Knob, 5/16-18 threaded thru w/ set screws	100173
2	Separator Mount Block	100170
3	Threaded adjusting rod 5/16-18	100182
4	Dowel Pin	100177
5	Center spring	100184
6	Outside spring	100372
7	Separator Pregate plate	100169
8	Separator top plate	100166
9	SHCS M2.4x5	MSHC 25.4
10	Separator Motor Mount Bracket	100180A
11	Separator Motor 12VDC	100163A
12	Aluminum Timing Pulley 16XL037, .500 bore	100194
13	Set Screw Soft Tip 10/32 x 3/8	SSSNT 102 0038
14	Separator right side plate	100167
15	R8 Bearing	100141
16	Belt 86XL037	100187
17	Aluminum Timing Pulley 10XL037, 6mm bore	100198A
18	Separator Front Cover Plate	100165
19	Separator Drive Shaft	100174
20	Separator Roller, Blue 68 Shore A	100172
21	Separator left side plate	100168
Not Shown	M8 Bulk Head Connector	100428
Not Shown	M8 quick disconnect cable cut to length, with connector	100429-SEP
Not Shown	Separator Label Kit	100430



## Section 7 Warranty

#### Limited Warranty

Superior Paper Handling Solutions (Superior) warrants this product to be free from defects in materials and workmanship, when used under recommended operating conditions for a period of one year from the date of original retail purchase.

If a defect is discovered during the warranty period, Superior (or authorized agent) will make the repairs at no charge. If the defect is not field repairable, the entire unit should be returned to Superior who will, at its sole option, repair or replace the product at no charge, other than shipping expenses to and from the Superior facility in Minneapolis, Minnesota, USA. All returns require prior approval by an authorized Superior employee and must have a Return Goods Authorization number.

This warranty applies only to products manufactured by Superior. The warranty is void if the product has been damaged by accident, abuse, misuse, neglect, improper maintenance, misapplication, or as a result of being attached to equipment not supplied by Superior; if the unit has been modified without the written permission of Superior; or if the units serial number has been removed or defaced. This warranty does not apply to the failure of any rubber based or consumable components including, but not limited to, "o" rings, belts, rollers, fuses, or lamps.

Superior is not responsible for special, incidental, or consequential damages resulting from any breach of warranty or under any other legal theory, including lost profits, downtime, goodwill, or damage to or replacement of equipment or property.

This warranty and the remedies set forth above are exclusive and are in lieu of all others, oral or written, expressed or implied. There are no warranties that extend beyond the description on the face hereof. No Superior employee or authorized agent is authorized to make any modification, extension, or addition to this warranty.

