Superior™
PRODUCT HANDLING SOLUTIONS

Xtreme XM Ultra Series Friction Feeders

Operation Instructions, Technical Guide, And Parts List Information

For Models:
Xtreme XM-12 Ultra
Xtreme XM-20 Ultra

Superior Performance, Superior Value

Have this information ready when calling in about your equipment:

Model: _____ Serial #:_____ Circuit Board #:_____
Warranty Start Date: _____

Model: _____ Serial #:_____ Circuit Board #:_____
Warranty Start Date:_____

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Warranty Start Date:_____

Model: _____ Serial #:_____ Circuit Board #:_____
Warranty Start Date:_____

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Illustrations in this guide are for reference only and may depict optional features that are available at additional costs.

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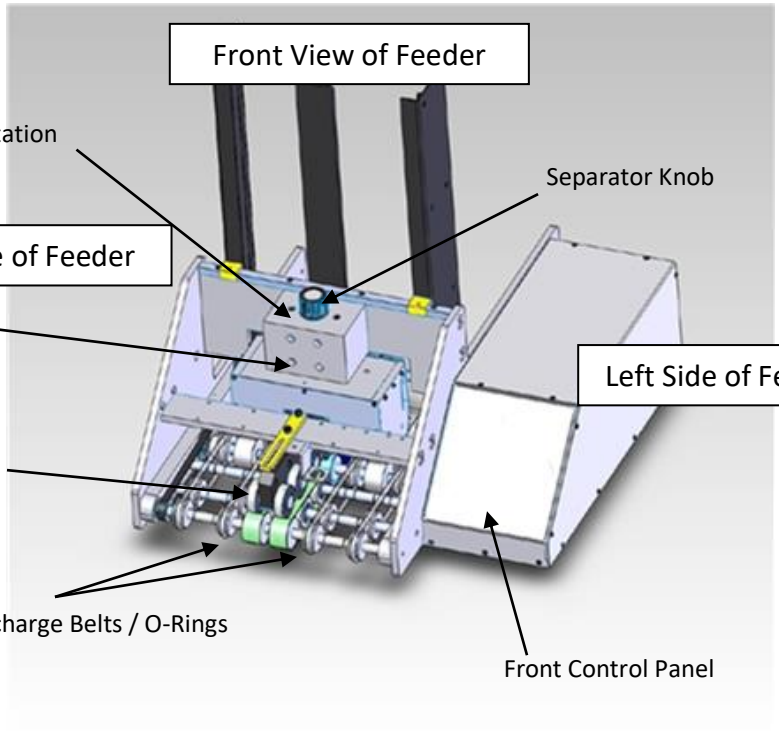
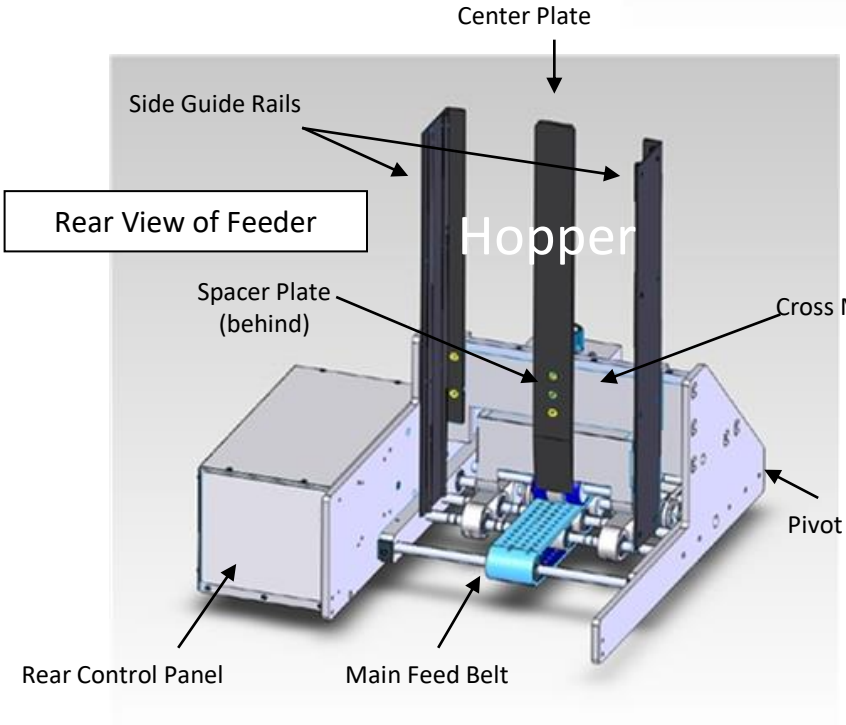
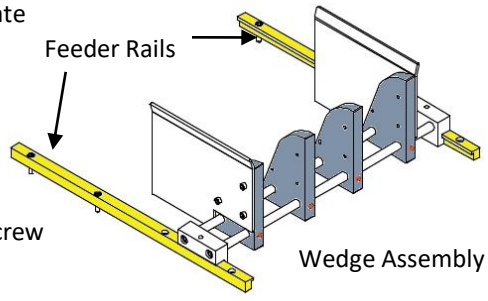
SECTION 1: MACHINE OVERVIEW

Please review the components and descriptions to become familiarized with your new Xtreme XM Ultra Friction Feeder.







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SECTION 2: SETUP

This section will walk you through setup adjustments for the Xtreme Ultra Friction Feeder.
Refer to the Basic Setup Guide for assembling your feeder when shipped from the manufacturer.

For a video demonstration of basic feeder set up, visit
http://www.superior-phs.com/setup.html

Take a moment to get familiarized with the basic feeder components on the previous page. Basic feeder setup consists of three main components: the Separator, the Hopper & Wedge Assembly, and the Discharge Hold-Down. **Power to the feeder should remain off** during the Separator and Hopper & Wedge Assembly setup.

Never Plug-In or Unplug Any Wires, Cables, or Electrical Components on the Feeder Without First Powering Down the Feeder and Removing All Power

Separator Setup

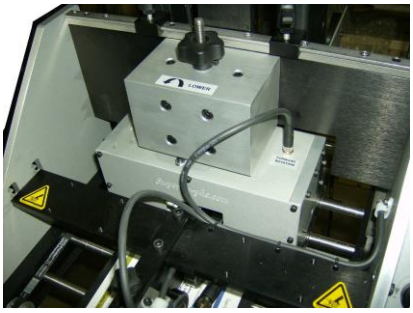

Figure 2.1

The Separator (Figure 2.1) is the device that separates product from the stack in the Hopper. Turning the knob clockwise will increase the gap between the gate assembly and the main feed belt; counter-clockwise will decrease the gap. This will create drag on the product and separation as product is pulled through the feeder.

Figure 2.2

Raise the Separator and advance one piece of product underneath the Gate Rollers (Figure 2.2). Slide the piece forward and backward while turning the separator knob counter-clockwise (Figure 2.3) to create a medium drag on the piece.

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.

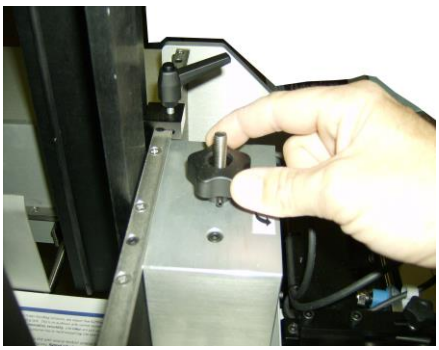

Figure 2.3

The Separator is equipped with a gear motor that automatically rotates the Gate Rollers as the feeder is running. For most products, it does *not* matter which direction the Gate Rollers turn – forward or reverse. In fact, you can unplug the gate power cable so the Gate Rollers are not turning and the feeder will still function properly.

NOTE: Always power off the feeder *before* removing power to the Separator.

For more information on selecting gate rotation, see Section 3: Additional Setup Information.

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Hopper Setup

Figure 2.4

The hopper consists of a cross mount plate, center plate, two side guides, side guide clamps, and handles shown in Figure 2.4 (See exploded view under Hopper Assembly). The side guides are adjustable side-to-side to allow for different product widths. *Optional*: the feeder comes with two rods for each side guide. Each side guide has two rods that can be 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 2.5). Using the rods depend on the type of product being ran.

NOTE:
BE SURE THAT THE RODS DO NOT CONTACT THE BELTS

Load one piece of product in the center of the hopper and adjust the side guides up to the edge of the product. Proper setup allows approximately 1/16” to 1/8” clearance from the side guides to the product.

Figure 2.5

For product thicknesses of 1/4” and under, the hopper assembly should be mounted in the lower slot of the “E” mount of the feeder’s left and right side plate (Figure 2.6). 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, 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 (Figure 2.7) so that the smooth side 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.

Figure 2.6

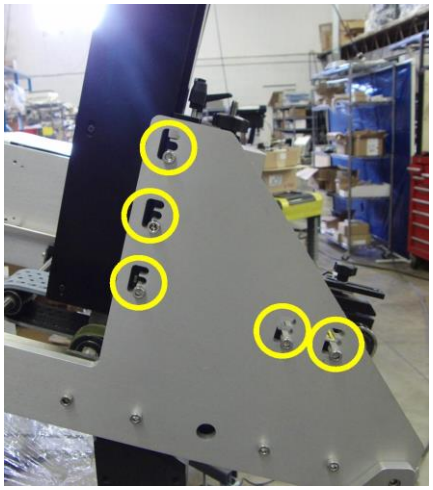

Figure 2.7

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Wedge Assembly Setup

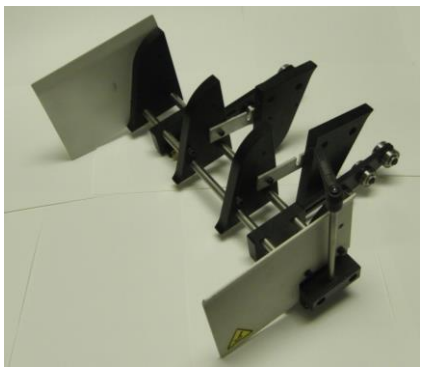
Figure 2.7

The Wedge Assembly provides “lift” to the rear of the product 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, in part, determine the amount of overlap of the products as they pass through the Gate Rollers.

If the Wedge Assembly is not attached to the feeder, slide the entire Wedge Assembly over the Feeder Rails in the Hopper and tighten down with the two knobs included. To adjust the wedge support, loosen the knob on either side of the Wedge Assembly and slide the assembly forward or backward. A good starting point is a lift angle of approximately 20-degrees on the first piece (Figure 2.10) 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 Xtreme XM Wedge Assembly comes standard with Small Product Wedges and Wedge Support Rollers.

Figure 2.8



Wedge Selection:

Products <4”L: See Figure 2.9
Products >4”L: See Figure 2.8
Products >7”L:
Not Rigid (i.e. thin sheets): See Figure 2.7
Ridge (i.e. chipboard): See Figure 2.8

The Roller Support Wedges fasten directly to the two drop blocks on the Standard Wedge shafts using four thumbscrews. They are adjustable in and out to provide more or less lift to flimsy stocks.

Included in this assembly are two Wedge Side Guides to assist in containing the product and preventing “skew”. Some wider product sizes will rely solely on the Wedge Side Guides and the Hopper Side Guides can be set to the most outward position in the hopper.

Figure 2.9

The Small Product Wedges and Wedge Support Rollers have a mounting feature design that allows them to be rolled backward when not in use. See Figure 2.9

Figure 2.10

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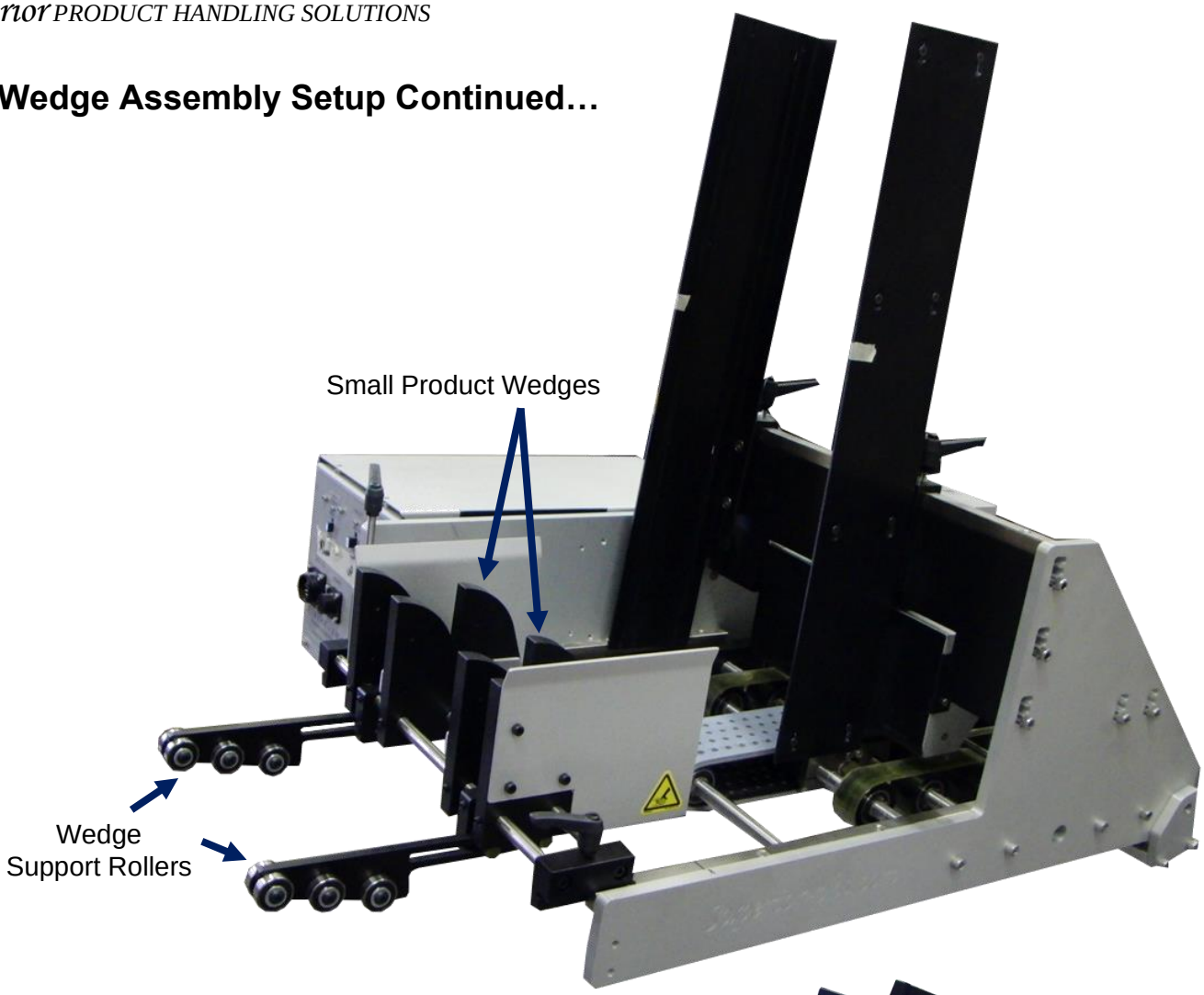
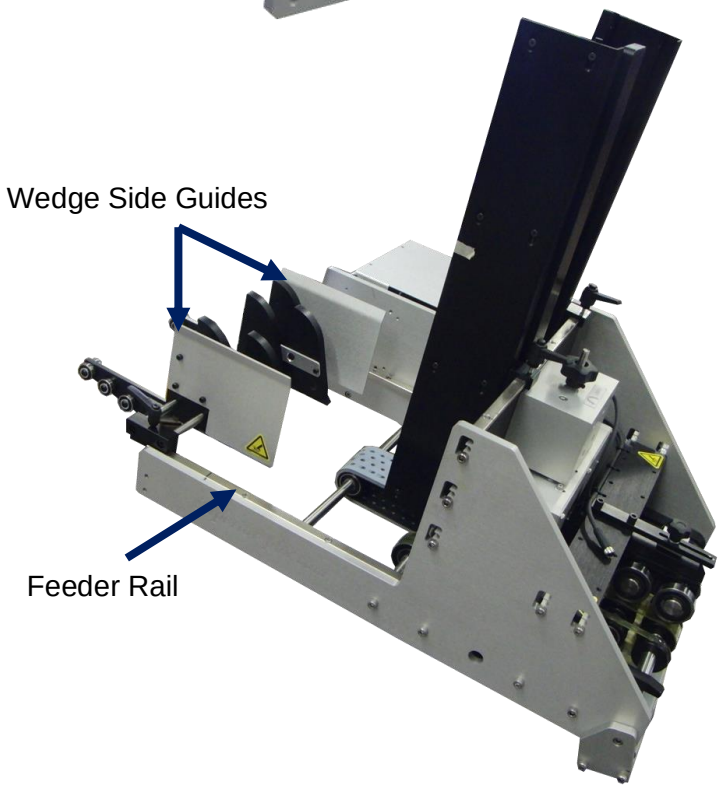
Wedge Assembly Setup Continued…





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Discharge Hold-Down Setup

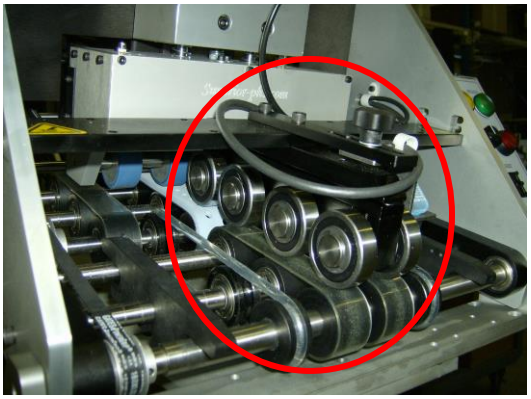


Figure 3.1

The Discharge Hold-Down (Figure 3.1) 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-tuning adjustment screws.

The fine-tuning adjustment screws allow for more 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.

To set the Hold-Down, power on the feeder and slowly press the Jog button to jog one piece of product through the feeder until it rests under the Hold-Down. By hand, move the product back and forth under the Hold-Down while adjusting the adjustment screws with a 3/16” allen wrench until there is a good amount of drag on either end of the Hold-Down (Figures 3.2 and 3.3). For products such as corrugate, minimal drag is needed.

Figure 3.2

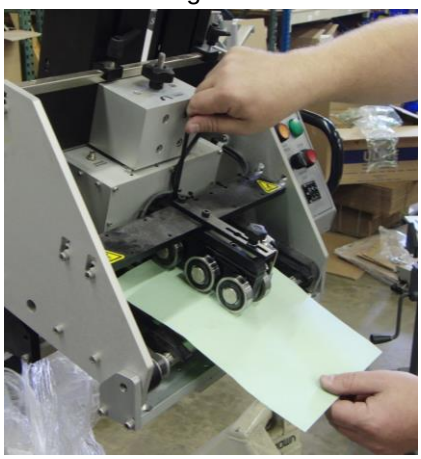
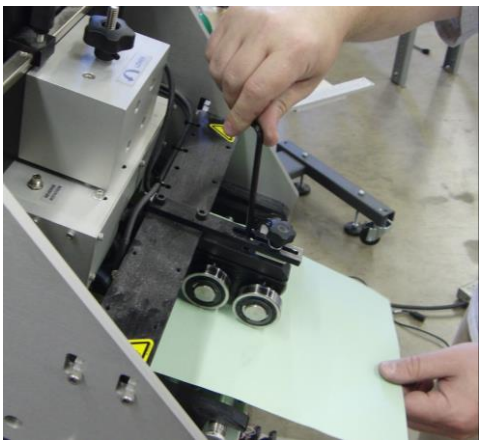


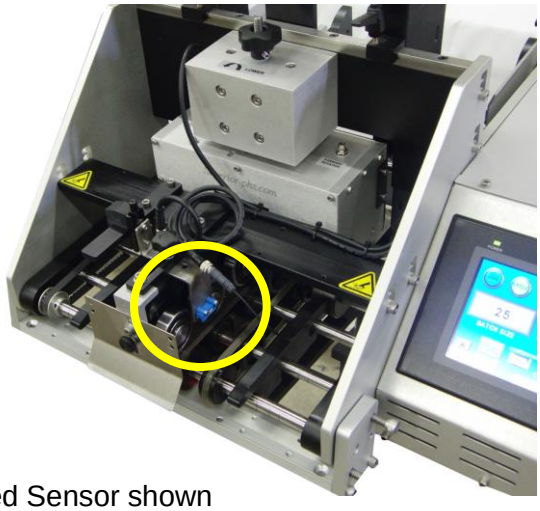
Figure 3.3



Sheet Sensor Photo Eye

The Sheet Sensor Photo Eye is used to detect the leading edge of a piece of product as it exits the feeder. Position the sensor at the discharge of the feeder where you want your product to stop. Be sure not to position the Sheet Sensor over a shaft or other obstruction. This will cause inaccurate counts.

Note: The Sheet Sensor must detect a gap between each product in order to maintain accurate counts. This is indicated by the light going on and off. A gap of 1” or more as product passes the Sheet Sensor is recommended.



High-Speed Sensor shown

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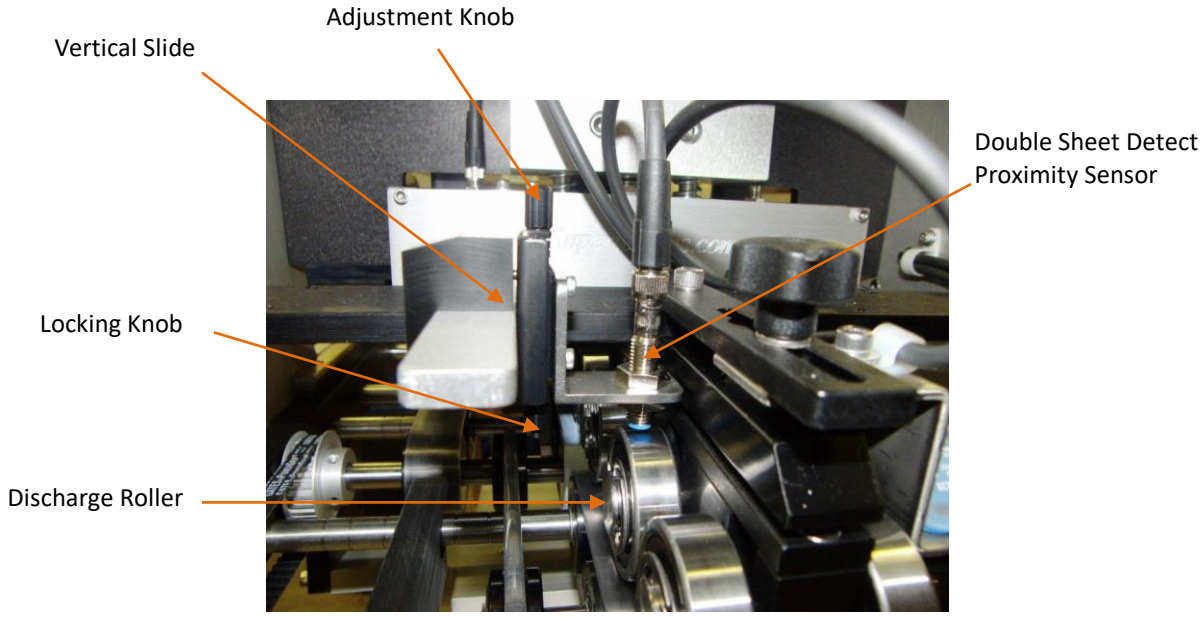
Electro-Mechanical Double Sheet Detector Setup

NOTE: This is a standard operating feature on the Ultra Series. Depending on your application, this option can be turned on or off in the software using the touchscreen PLC controls.

Operation and Setup:

The electro-mechanical double sheet detector is a Proximity Sensor mounted above the middle discharge roller. When this sensor is activated (sensing a double), and the Double Detect is enabled, the feeder will stop and illuminate the Reset lamp with a slow blink. To reset, simply remove the product from under the discharge roller and press the Reset button. Press the Cycle button once to stage a new piece to the sheet detect sensor.



Setup – To adjust the proximity sensor, advance 2 pieces under the hold down roller below the prox sensor. Loosen the bottom locking knob on the vertical slide. Loosen or tighten the top adjustment knob on the vertical slide to move the prox sensor up or down.

Adjust the position so that you are just detecting the double and tighten the bottom locking knob. If the position is too far into the detection range, false triggers may occur from the bounce of the roller under normal operation. Next, remove one of the pieces of product and make certain that the prox sensor is not detecting a single piece.

Once satisfied, cycle a few pieces through the feeder to ensure that singles do not trip the prox sensor.

Please note that for operation, you will need to “Enable” this feature on the touchscreen PLC. Refer to touchscreen manual for setup.

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SECTION 3: OPERATION

Before Powering on the Feeder:

If you are using the Trigger Sensor assembly provided (or any external I/O interface cable) to automatically cycle the feeder, plug-in the Trigger Sensor located in the Rear Control Panel and mount it directly to the feeder near the discharge or near the equipment that will be triggering the sensor, such as a conveyor. ***DO NOT PLUG OR UNPLUG POWER TO THE TRIGGER SENSOR OR EXTERNAL INTERFACE CABLE AT ANYTIME WITHOUT FIRST POWERING DOWN THE FEEDER.***

FAILURE TO DO SO CAN RESULT IN DAMAGE TO THE CONTROLS INTERFACE ON THE PLC.

Apply Power

1. It is important to make sure that you are applying the correct voltage to the unit. At the Rear Control Panel the display will state the required power source. You must only supply the power to the unit as stated on the module.
2. Once you have applied power, switch the unit to the “On” position (-) by pressing the on/off switch located on the Rear Control Panel.
3. The feeder will perform a self-check indicated by the “Reset” “Ready” and “Stop” buttons flashing once then the “Reset” light staying on. This indicates the feeder is in Setup Mode.
4. Press the “Reset” button and the “Ready” button will light up green indicating the feeder is in Ready Mode and is ready to receive a trigger signal from the Trigger Sensor or by manually cycling the feeder by pushing the green “Manual Cycle” button.
5. To start, make sure your Main Speed is set 25%.

Trigger Sensor

Trigger Signal

The trigger signal is what initiates the feed cycle. This signal is received by either the Trigger Sensor or by manually cycling the feeder. When received, this puts the feeder into motion and dispenses product(s). The number of pieces that will be dispensed is determined by the number you preset on the batch-size. *Note*: If more than one trigger signal is received prior to completion of the feed cycle, a “Miss-Feed” will be detected (see the glossary for more information regarding miss-feed).

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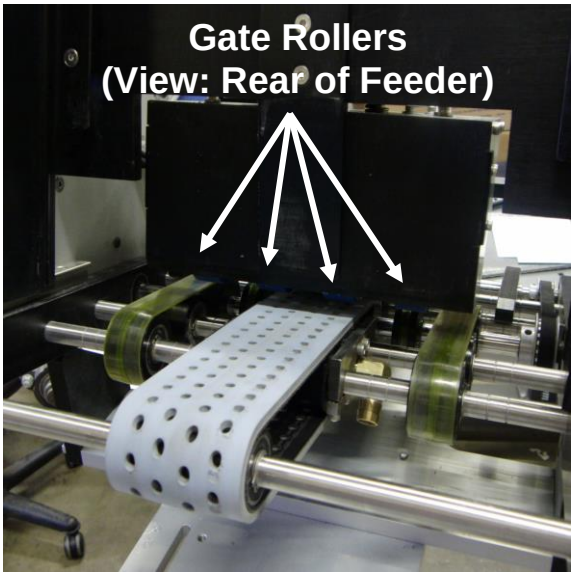
Loading Product

1. Load one piece of product in the Hopper as described in the Hopper Setup section. To start, this piece of product should be resting on the Wedges with approximately 20 degrees of lift.

2. Pre-shingle, or fan out, a 1” stack of product (pictured top-right) and load into the hopper resting under the gate rollers (pictured bottom right). Make sure to maintain the pre-shingle effect so it matches that of the lead-in plate on the Separator.

3. Repeat Step 2 with another 1” stack until you have approximately 3” to 4” of product in the Hopper. All of the product in the Hopper should be evenly fanned out along the Wedges with no random pieces sticking out. This initial setup of product is very important to maintain even feeding as you continue to load the Hopper.



4. Press or hold down the Jog button to gauge the feeding performance of a few pieces of product. If necessary, Jog the feeder while adjusting the Separator until product is feeding evenly. Ideally, you are looking for a 1” gap between the products as it passes the Sheet Sensor photo eye.

5. 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. For example, thin or flimsy sheets may only perform at a 3” to 4” stack height while more ridged products such as chipboard and corrugate can be stacked in excess of 24”. You will need to experiment by loading or unloading product to determine the effective stack heights for each product. Use the chart below as a general guideline on product stack heights.

Product Types	Thin, Flimsy Sheets	Glossy Sheets	Card Stock	Corrugate
Stack Height	3 to 6”	4 to 8”	8 to 20”+	10” to 20”+

Xtreme XM Series Friction Feeders can run over 2,000 different products; however, it is impossible to provide a complete setup guide for all products types. You may experience significantly different stack height results than what is listed above. For maximum results, use trial-and-error to find the optimal stack height for your specific product type.

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6. Once you have achieved consistent feeding performance, set the batch size to the desired number of pieces to be dispensed each cycle on the PLC screen. “01” represents that one piece will dispense per cycle, also known as One-Shot feeding.

7. As you start feeding, you can add or remove product to adjust your stack height. Be sure to keep a consistent stack height as the feeder runs because the weight of the stack will affect the performance. For more information on different variables of feeding product, see Additional Setup Information section.

    - Xtreme XM-1 maximum belt speed: 210 ft. /min
    - Xtreme XM-12 maximum belt speed: 400 ft. /min
    - Xtreme XM Ultra maximum belt speed: 750 ft./min

Front Control Panel Features

Refer to the Touchscreen Manual for Screen Functions

Jog Button
The feeder will advanced when the Jog button is pressed. The feeder will continuously run when the jog button is activated. This option is typically used when setting up product in the feeder or clearing any product under the Separator. While holding down the Jog button, you can adjust the Separator and feed product until the product feeds consistently.

Reset Button
The feeder is in Setup Mode when the Reset light is on. The feeder will only respond to the “Jog” input. Pressing the Reset button when lit will put the feeder into Ready Mode. Pressing and releasing the Jog button will incrementally advance product through the unit. This will allow you to verify the flow of product through the unit and allow you to make adjustments if necessary.

Ready Mode
Pressing the Reset button will clear the illumination of the reset light and put the unit into “Ready” mode. Ready mode is represented by a solid illumination of the ready lamp (Green). The unit is now ready to receive a trigger signal from one of three sources (green cycle button, trigger sensor, or externally through the I/O interface).

Stop Mode
If a miss-feed or jam occurs, press the “Stop” button to put the feeder in Stop Mode. Stop Mode is represented by a solid red lamp on the stop button and a solid amber lamp on the reset switch. The feeder will not be able to receive a signal and you can safely clear any jammed product or make any necessary adjustments. When you are ready to return to Ready Mode, press the Reset button.

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Shutdown

Completely power off the feeder when not in use. To do this, move the on/off switch located on the Rear Control Panel to the “off” position (O) and remove the product from the hopper.

Rear Control Panel Features

External Interface

Input for 16 pin external I/O interface cable if communicating with a host system.

Trigger

Input for trigger sensor if the feeder is to receive a signal from the trigger sensor.

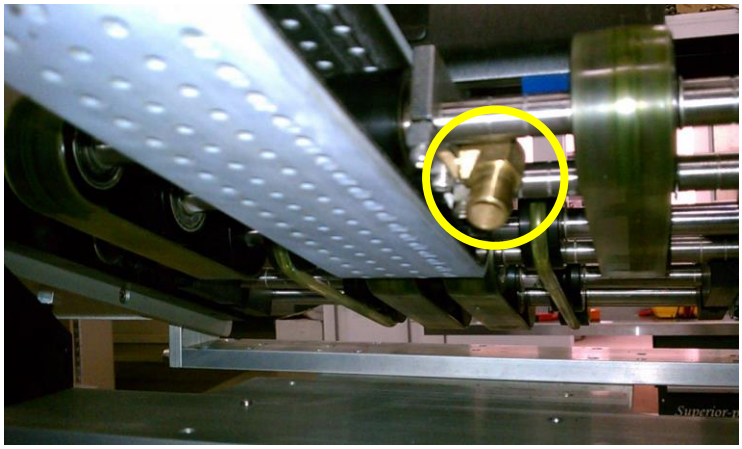
Comm.

Ethernet IP communications interface.

Power

Cor Com power inlet module. 220 vac.
If powered at 110VAC, the feeder will show half It’s run speed

Vacuum Belt and Manifold



The vacuum manifold has a ½” barbed fitting. Any ½” hose can be attached. Works with any vacuum source provided by customer: Venturi - House Air, Pump, or Regen Blower. We recommend an adjustment valve be placed between the vacuum source and the vacuum manifold. The amount of vacuum required depends on product type and application speed. Range 1.0 to 20 in-Hg.

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Trigger Delay Timing Reference

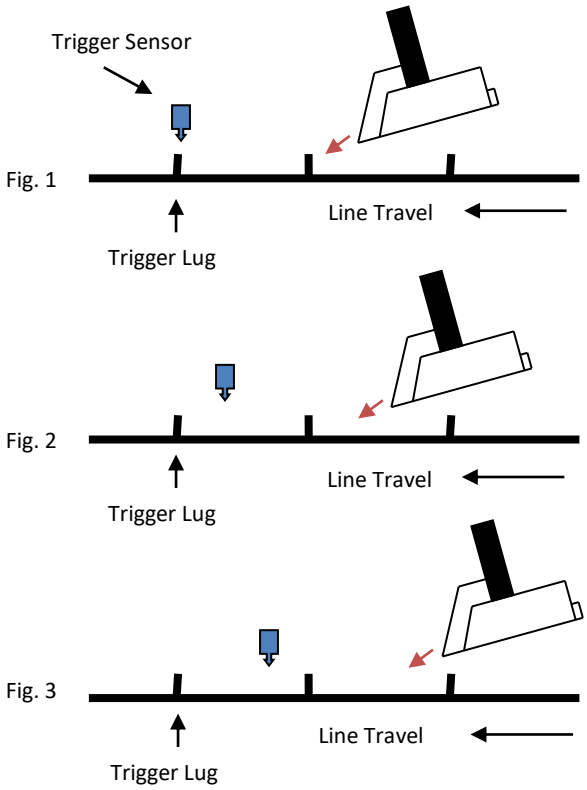
The Xtreme XM batch count feeders come standard with a feature called “Trigger Delay”. Please refer to your PLC manual under ‘Main Setup Screen’ for setting this feature. This feature allows the operator to offset products within the pocket of a lugged conveyor when using the trigger sensor or external trigger interface. Below is an example to demonstrate how the Trigger Delay feature works.

Trigger Delay Setting – Line speed 60 per/min

Figure 1 **Full Minimum**
- Feeds the front of the pocket almost immediately

Figure 2 **1/2 Setting (feeds half way into the pocket)**
- Conveyor will travel ½ of the pocket length before the feeder dispenses the product

Figure 3 **3/4 Setting (feeds the rear of the pocket)**
- Conveyor will travel ¾ of the pocket length before the feeder dispenses the product



Below you will see a timing chart of how the position of the trigger delay dial will affect each feed cycle.

Figure 1 shows full minimum delay, thus an immediate feed cycle once triggered.

Figure 2 represents feeding the middle of the pocket – at a line speed of 60 ppm, this dial position would be at ½.

Figure 3 represents offset to the rear of the pocket.

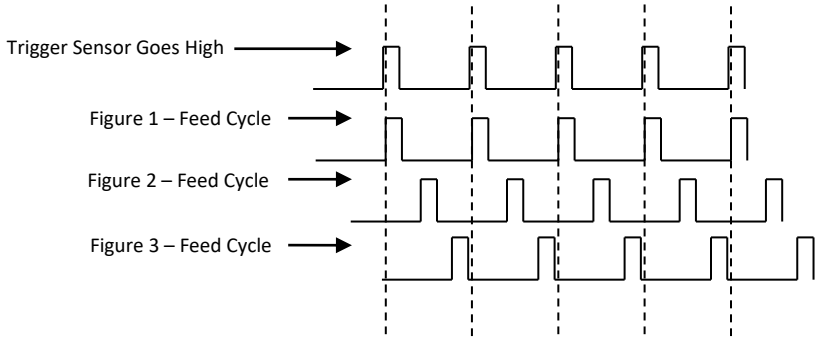
TRIGGER DELAY TIMES (dial position)

Full Minimum = 8ms **1/4** = 250ms

1/2 = 500ms **3/4** = 750ms

Full Maximum = 1020ms (just over 1 second)

TIMING CHART



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Additional Set-Up Information

Different Variables of Feeding Product

In any friction feeder there is an inherent trade-off between stack height (load weight) and feeding performance. Smaller products like most 5" x 7" and smaller can stack 16" to 20". Larger products vary greatly in their stack height. Variables include:

- Coefficient of friction of the product such as glossy sheets versus card stock;
- Rigidity of the product such as paper versus chipboard;
- Weight of the product such as a 3" stack of paper verses a 3" stack of corrugate pizza backers.

Products of the exact same size can vary greatly in the maximum stack height allowed at full speed. It is not uncommon to have stack heights in the 4" or less range for higher coefficient of friction 8.5 x 11 (or larger) thin sheets.

If full speed is the primary goal, then stack heights may need to be reduced. If maximum stack heights are the goal, then speeds may need to be reduced. If the goal is to run at full speed with maximum stacking capacity, a bulk loader is the only available solution for some products. Please see the XM-100 Bulk Loader in the Section 6: Accessories and Aftermarket Options.

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.

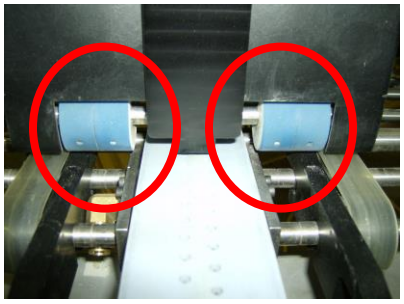

Figure 1

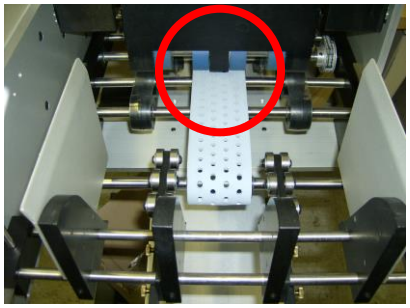

Figure 2

The blue gate rollers are designed to move anywhere on the 8" wide gate roller shaft. Most customers leave the 2 rollers over the feed belt as it is easier for most operators to set-up a wide range of product with these rollers in this position. There is no reason all 4 separator rollers could not be over the feed belt, or all 4 off the feed belt. If all 4 are off the feed belt, then you cannot feed product that is narrower than the distance between the inner two rollers – two rollers need to be in contact with the product if the rollers are off the belt.

We space the rollers apart at the factory so 2 are on the belt for feeding smaller products and 2 are wider for larger products to help with reducing skew. If all 4 rollers are over the belt, for wider products there might be more skew. If all 4 rollers are off the belt, then the gate rollers can be lowered past the top surface of the feed belt. This can help in separation of thin sheets because the product must bend down and around the rollers, the forming of a "wave"

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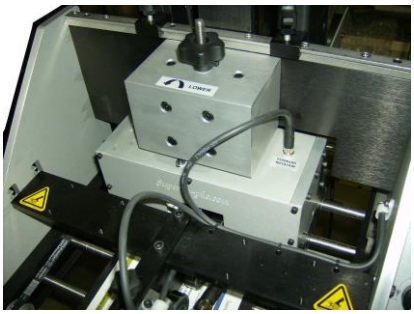
in the product creates a natural fanning – starting separation – of the sheets. This can improve the stack heights, or improve feeding speed performance. By having the separator rollers off the feed belt, it also eliminates the hard nip point created between the gate rollers and the feed belt, without this nip, stress is relieved from the leading edge of the sheet, and leading-edge marking can be reduced or eliminated. It is never recommended to try and lower the gate rollers below the surface of the feed belt for thicker products. Lowering the gate roller too far below the surface of the feed belt can cause marking or scoring of the product due to too much pressure of the product on the edge of the belt and gate rollers.

Rotating Gate



****BE SURE TO POWER OFF THE FEEDER BEFORE REMOVING POWER TO THE SEPARATOR**

Xtreme feeder's ship with the gate rotation set to "Reverse". In fact, you can remove the gate power cable so that it is not plugged in and the rollers are not turning at all, and the feeder will still function properly. The primary function of the rotating gate roller is to create uniform wear and not create flat spots on the roller that would require the operator to stop the feeder and correct. The rotation rate is approximately 4.25 to 4.5 minutes per revolution. The blue gate rollers only rotate when the feed belt is moving. You will not see the rollers rotate if only looking at them for 10 to 15 seconds.

The best way to verify the separator rollers are turning is to remove all product from the feeder, turn Continuous Mode 'on', set Time Out to off, set speed to about 50%, place a finger under the sheet sensor then press cycle. Place a finger on one of the rollers. You will feel the gate rollers pulse and rotate. If you would prefer not to set a finger on the roller, you can mark a line on a roller, or locate a set screw hole and observe these as the rollers turn.

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SECTION 4: WIRING AND ELECTRICAL DETAIL

XM-12 External I/O Connectors

5/2/2013; Updated 12/13/2019

4 Pin EXT Trigger Connector

* **PNP** sensor required

1. + 24 VDC
2. EXT Trigger signal
3. 0 VDC

---

37 Pin I/O Connector

1 - Inputs
(Require +24 VDC closed to input)

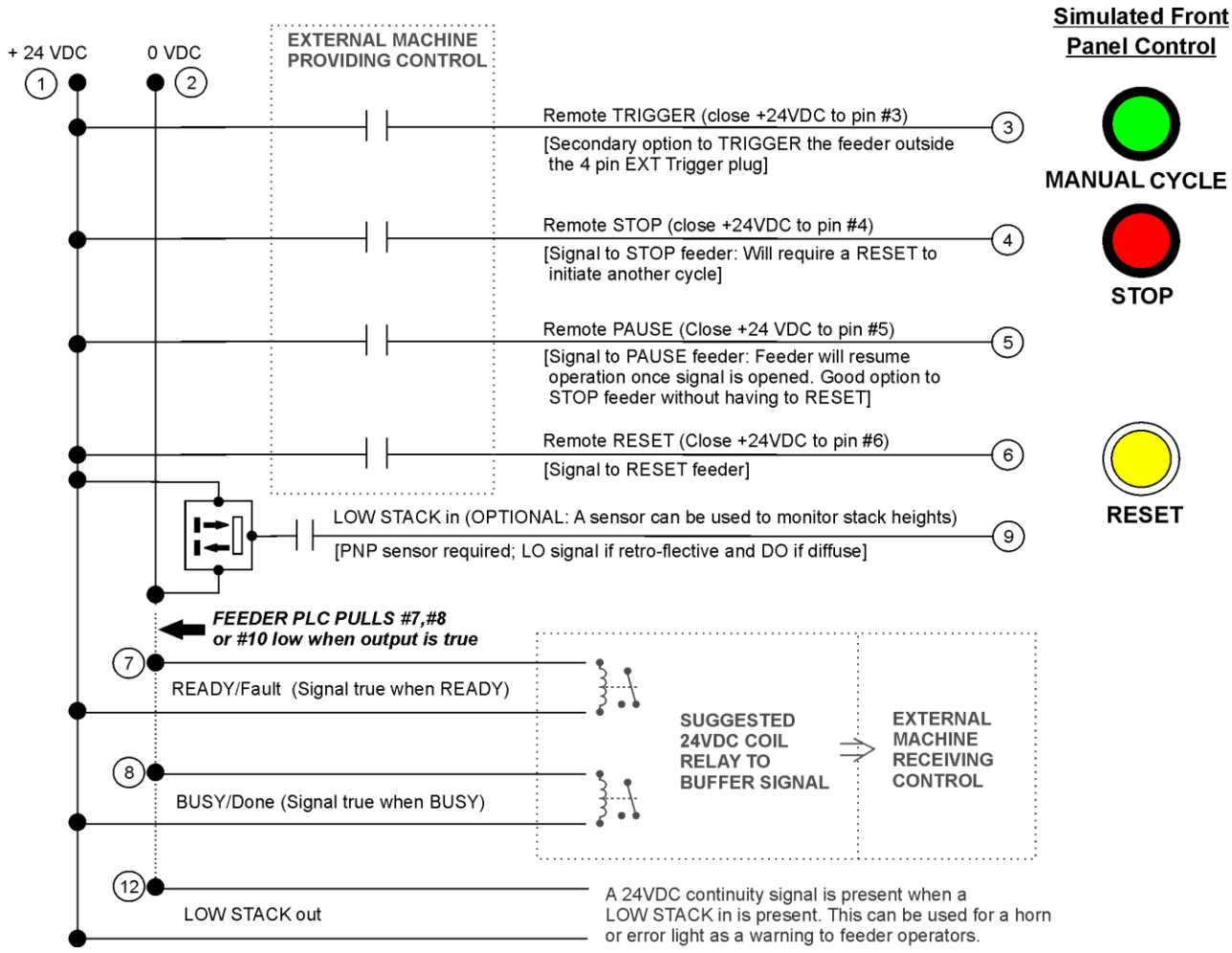
2 - Outputs
(0 VDC closed to output - CAPS font represents true condition)

3 - Internal USE
(signals used at mfg. level)

* **WARNING - NO external voltages can be applied to I/O pins. The I/O is designed to be used with the internal 24 VDC power supply.**

Please see schematic below for example hook-ups.

1 + 24 VDC	11 DRPR DYADIC PC1 [3]	21 DRPR STAGE ARM SV [3]	31 + 24 VDC
2 0 VDC	12 LOW STACK out [2]	22 DRPR FULL SENS [3]	32
3 Remote TRIGGER [1]	13 + 24 VDC	23 DRPR STG1 FULL SENS [3]	33
4 Remote STOP [1]	14 DRPR LIMIT 2 PRX [3]	24 DRPR DYADIC ZONE [3]	34 GND [3]
5 Remote PAUSE [1]	15 DRPR LIMIT 1 PRX [3]	25 + 24 VDC	35 NUETRAL [3]
6 Remote RESET [1]	16 0 VDC	26 + 24 VDC	36 LINE [3]
7 READY/Fault [2]	17 DRPR INTRLK [3]	27 0 VDC	37 GND [3]
8 BUSY/VACUUM on [2]	18 DRPR DYADIC CSTR [3]	28 + 24 VDC	
9 LOW STACK in [1]	19 DRPR DOOR OPEN SV [3]	29 + 24 VDC	
10 WEDGE TAMPER [3]	20 DRPR TAMPR SV [3]	30 0 VDC	



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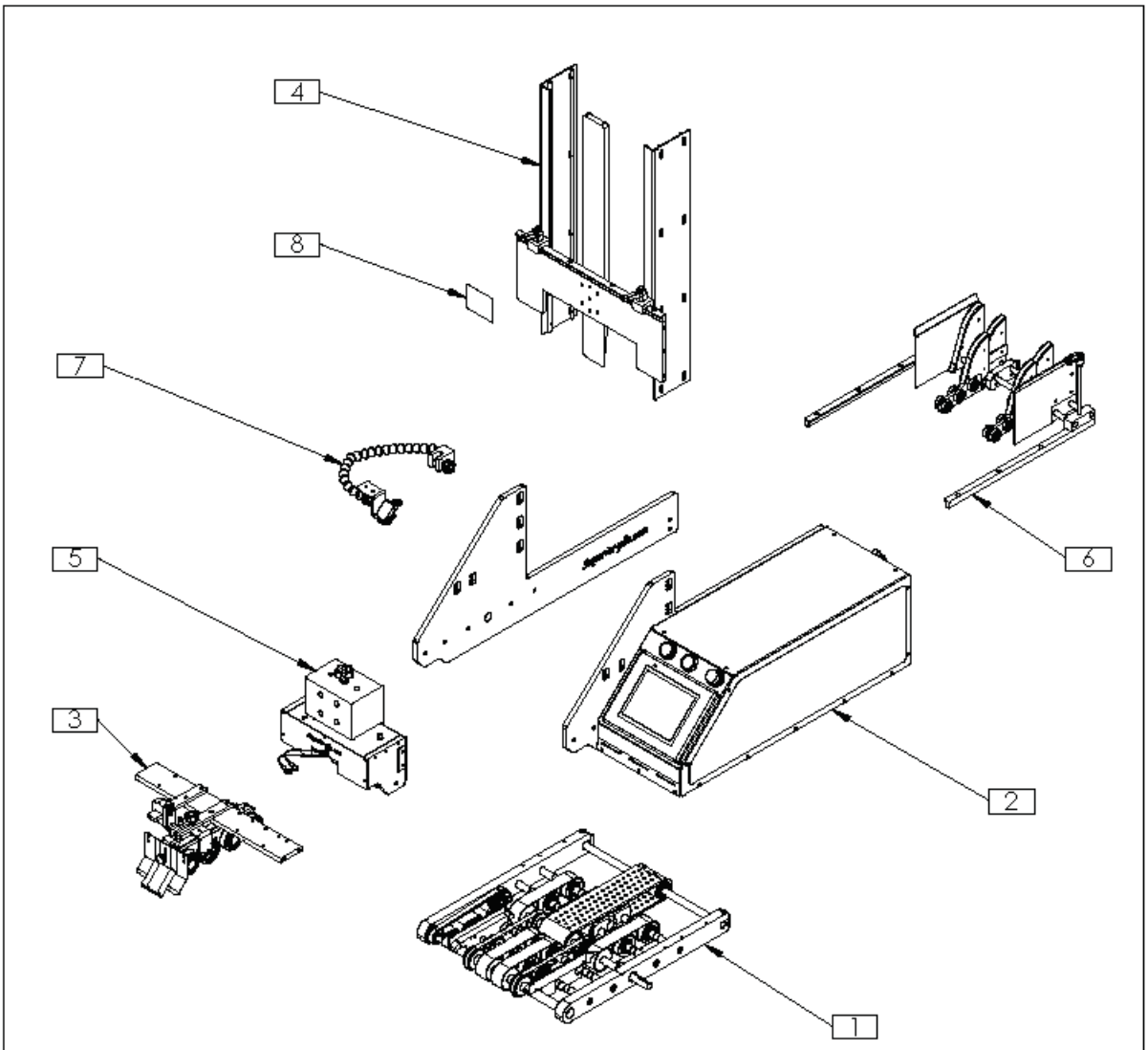
SECTION 5A: PARTS LIST [XM12U]



ITEM NO.	PartNo	DESCRIPTION	QTY.
1	400313	14" CARRIAGE ASSEMBLY	1
2	400111	ULTRA CHASSIS	1
3	400071	HOLD DOWN ASSEMBLY	1
4	100200	HOPPER ASSEMBLY	1
5	100164	SEPARATOR POWERED ASSEMBLY	1
6	100218	WIDE EDGE ASSEMBLY	1
7	100390	TRIGGER SENSOR ASSEMBLY	1
8	350286	YEARLY LABEL	1

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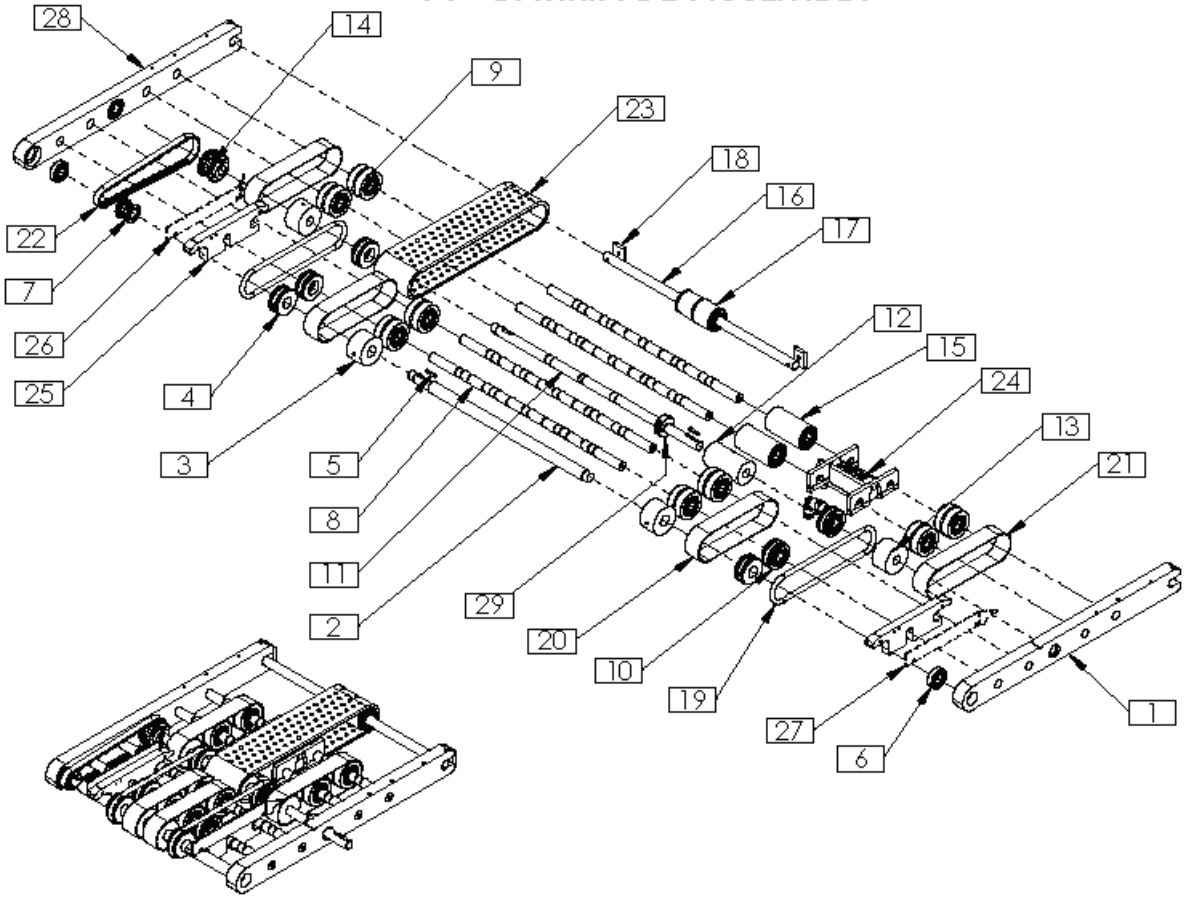
XM-12 ULTRA
14" CARRIAGE ASSEMBLY



ITEM NO.	PartNo	DESCRIPTION	QTY.
1	400066	CARRIAGE LH ASSEMBLY	1
2	100138	DRIVE SHAFT	1
3	100152A	DRIVE PULLEY	2
4	100191 A	PULLEY	2
5	300650	KEY	2
6	100141	BEARING	2
7	100621A	TIMING PULLEY	1
8	100139	IDLER SHAFT	4
9	100148	PULLEY IDLER CROWN SHORT ASSEMBLY	8
10	100144	PULLEY O-RING ASSEMBLY	4
11	100231	MAIN DRIVE SHAFT CARRIAGE	1
12	100151	ROLLER DRIVER LONG	1
13	100152	DRIVE PULLEY	2
14	350022	TIMING PULLEY	1
15	100147	FLAT IDLER LONG ASSEMBLY	2

ITEM NO.	PartNo	DESCRIPTION	QTY.
16	100142	IDLER SHAFT	1
17	100150	CROWN ROLLER IDLE LONG ASSEMBLY	1
18	100161	TENSION PLATE	2
19	100156	O-RING DISCHARGE	2
20	100159	BELT	2
21	100158	FEED SECTION BELT	2
22	301444	TIMING BELT	1
23	100157	FEED VACUUM BELT	1
24	100611	VACUUM ASSIST ASSEMBLY	1
25	100439A	SENSOR MOUNT	2
26	301418	RIGHT XM DISCHARGE GUIDE (OPTION)	1
27	301445	LEFT XM DISCHARGE GUIDE (OPTION)	1
28	400053	CARRIAGE RH ASSEMBLY	1
29	350127	SHAFT COLLAR	1

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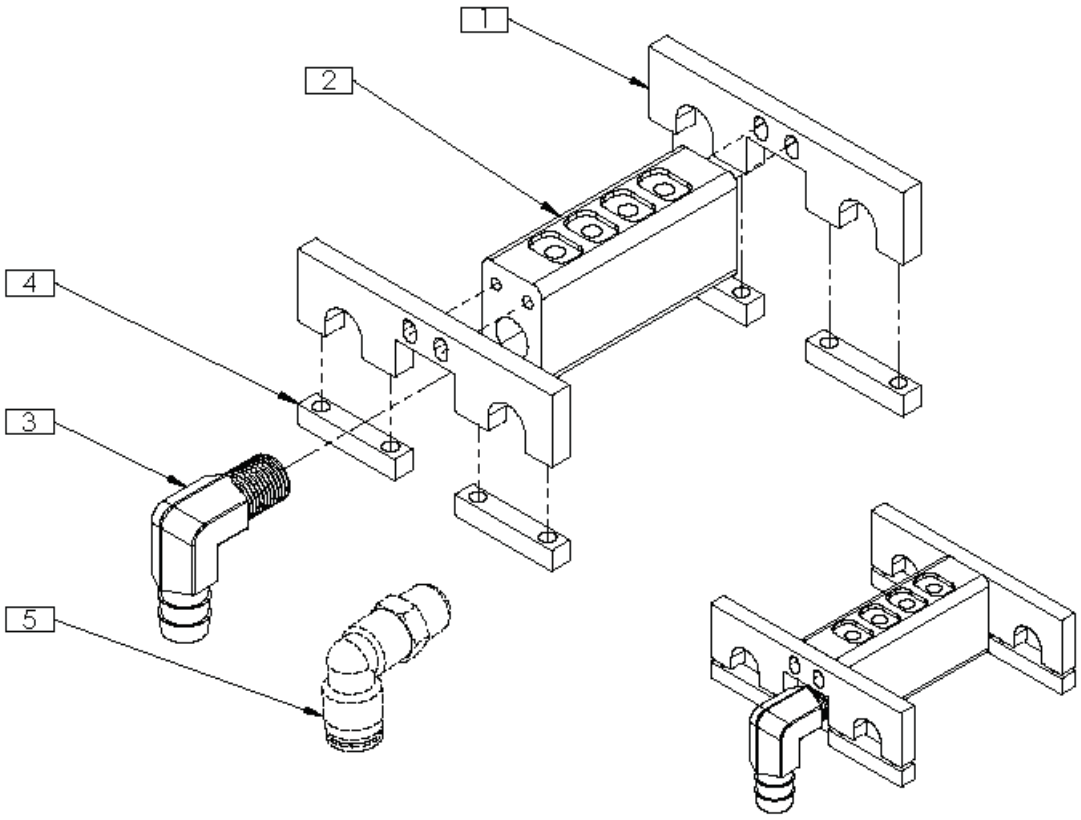
VACUUM ASSIST ASSEMBLY



ITEM NO.	Part No	DESCRIPTION	QTY.
1	100608	BRACKET	2
2	100607	VACUUM BLOCK	1
3	100613	VACUUM ASSIST FITTING	1
4	100609	KEEPER RAIL VACUUM MANIFOLD	4
5	350098	PUSH-INL-FITTING (OPTION)	1

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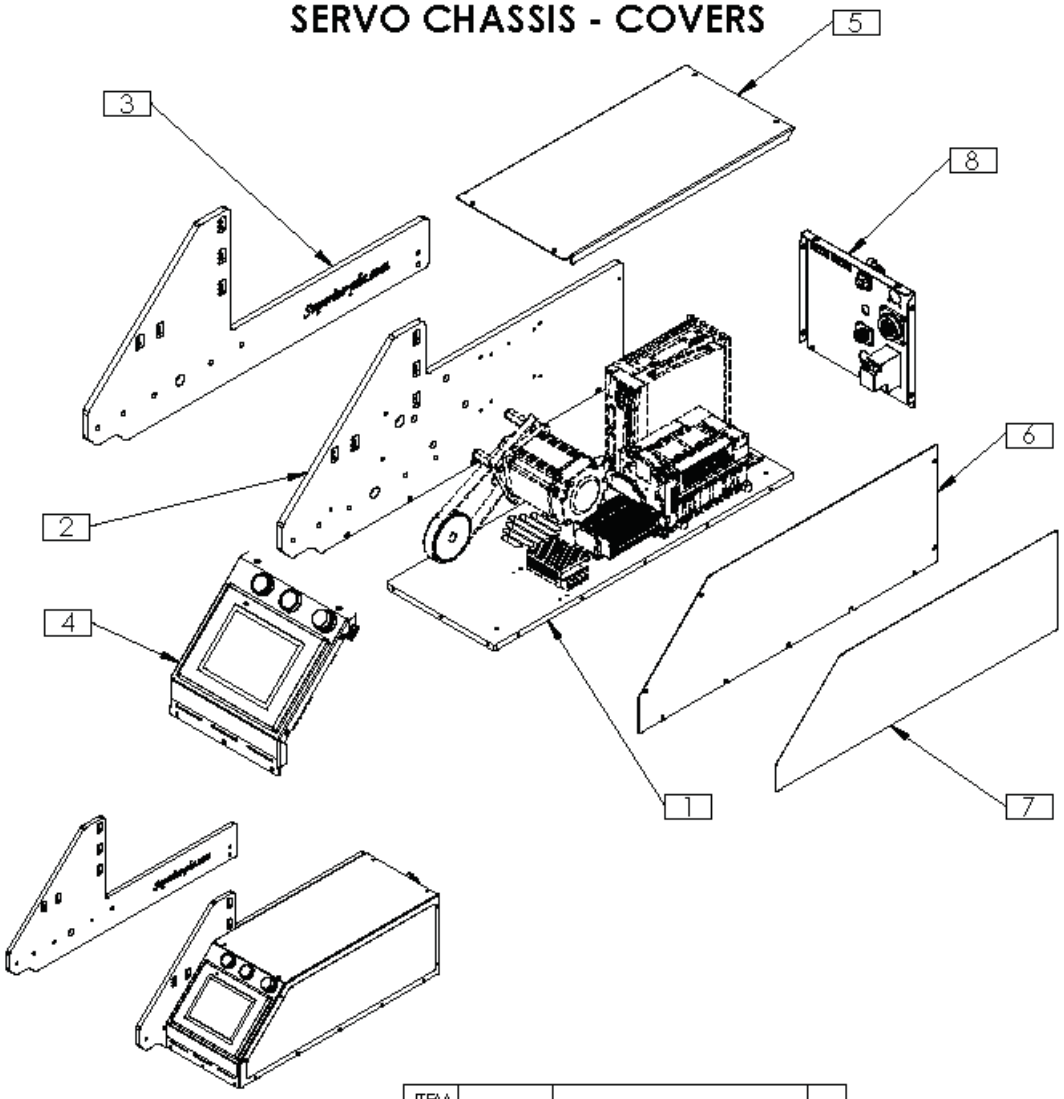
XM-12 ULTRA
SERVO CHASSIS - COVERS



ITEM NO.	Part No	DESCRIPTION	QTY.
1	300450	BASE PLATE CHASSIS	1
2	300451	SIDE PLATE LH	1
3	300452	SIDE PLATE RIGHT	1
4	400110	FRONT PANEL ASSEMBLY	1
5	300458	TOP PANEL	1
6	300457	SIDE PANEL	1
7	301872	SIDE PANEL LABEL	1
8	400355	REAR PANEL ASSEMBLY	1

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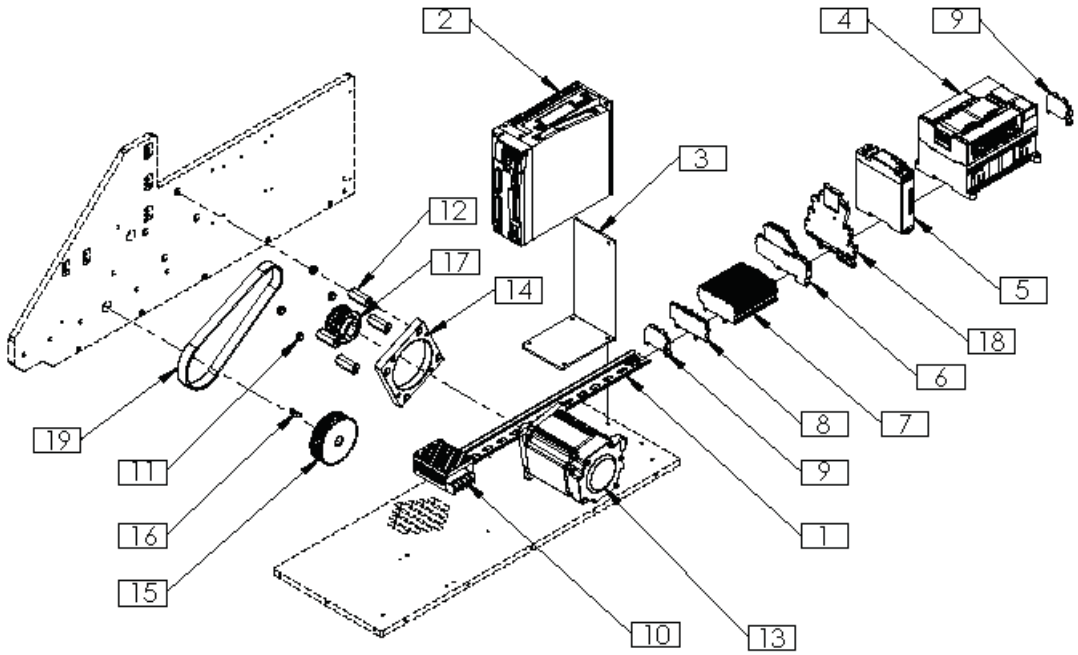
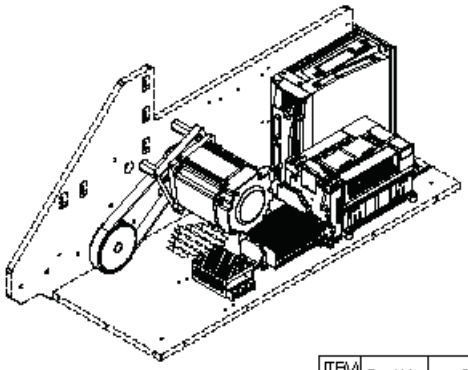
XM-12 ULTRA
SERVO CHASSIS - ELECTRICAL





ITEM NO.	PartNo	DESCRIPTION	QTY.
1	350089	13.75 INCH DIN RAIL	1
2	350134	SERVO DRIVER	1
3	300855	MOUNTING BRACKET	1
4	200144	CPU	1
5	200145	POWER SUPPLY	1
6	350084	FUSE HOLDER	1
7	350085	TERMINAL BLOCK	15
8	301073	GROUND BLOCK	1
9	301078	TERMINAL BLOCK END	2
10	100583	POWER SUPPLY	1

ITEM NO.	PartNo	DESCRIPTION	QTY.
11	100276	RUBBER GROMMET	4
12	100237	STANDOFF	4
13	350133	MOTOR	1
14	300670	MOUNT	1
15	350050	PULLEY	1
16	300650	KEY	1
17	350051	TIMING PULLEY	1
18	200146	COIL RELAY	1
19	301478	TIMING BELT	1

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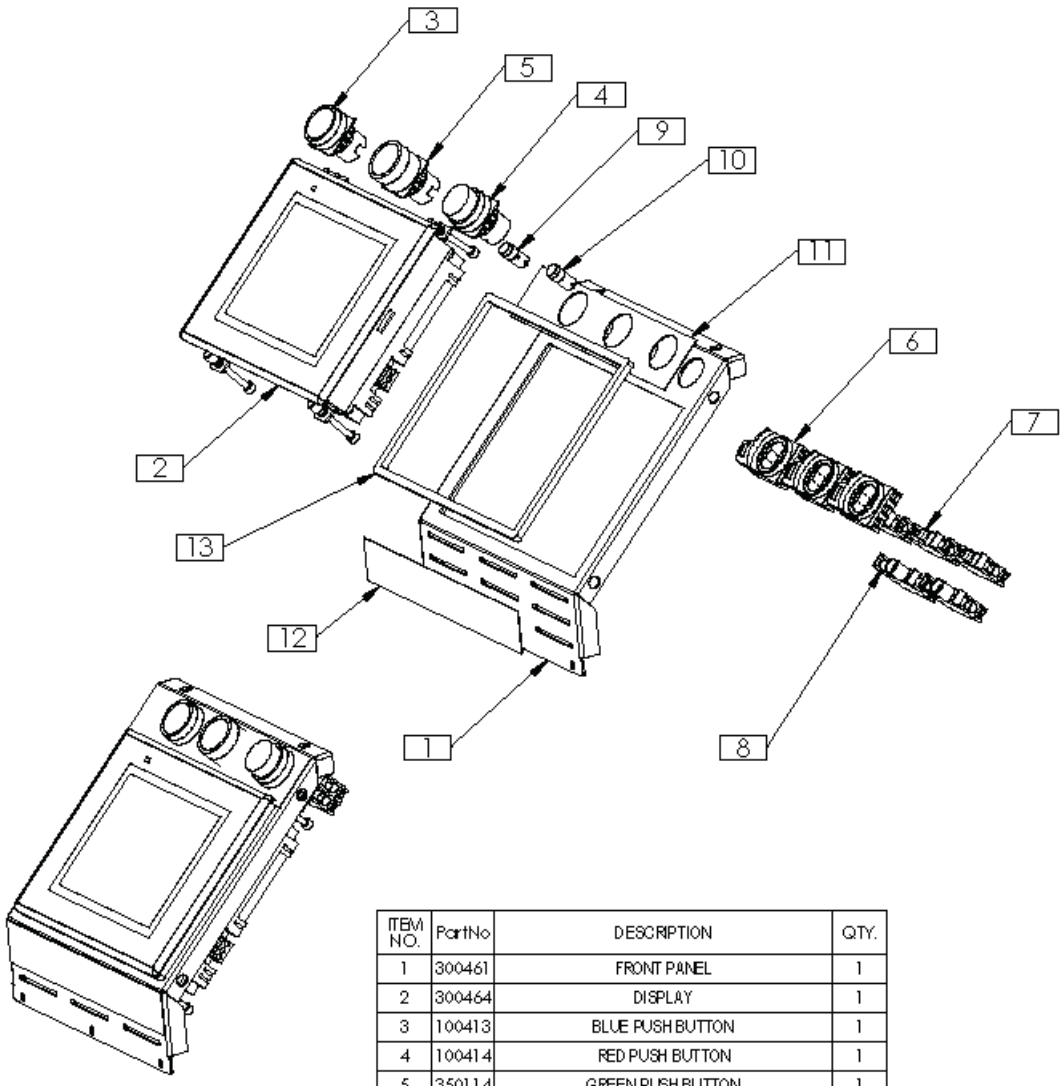
XM-12 ULTRA
FRONT PANEL ASSEMBLY



ITEM NO.	PartNo	DESCRIPTION	QTY.
1	300461	FRONT PANEL	1
2	300464	DISPLAY	1
3	100413	BLUE PUSH BUTTON	1
4	100414	RED PUSH BUTTON	1
5	350114	GREEN PUSH BUTTON	1
6	350113	MOUNTING COLLAR	3
7	350116	NO CONTACT BLOCK	3
8	350115	LIGHTING UNIT	2
9	350120	GREENLED LAMP	1
10	350121	RED LED LAMP	1
11	301968	FRONT PANEL LABEL	1
12	301970	LOWER FRONT PANEL LABEL	1
13	301888	SCREEN STANDOFF	1

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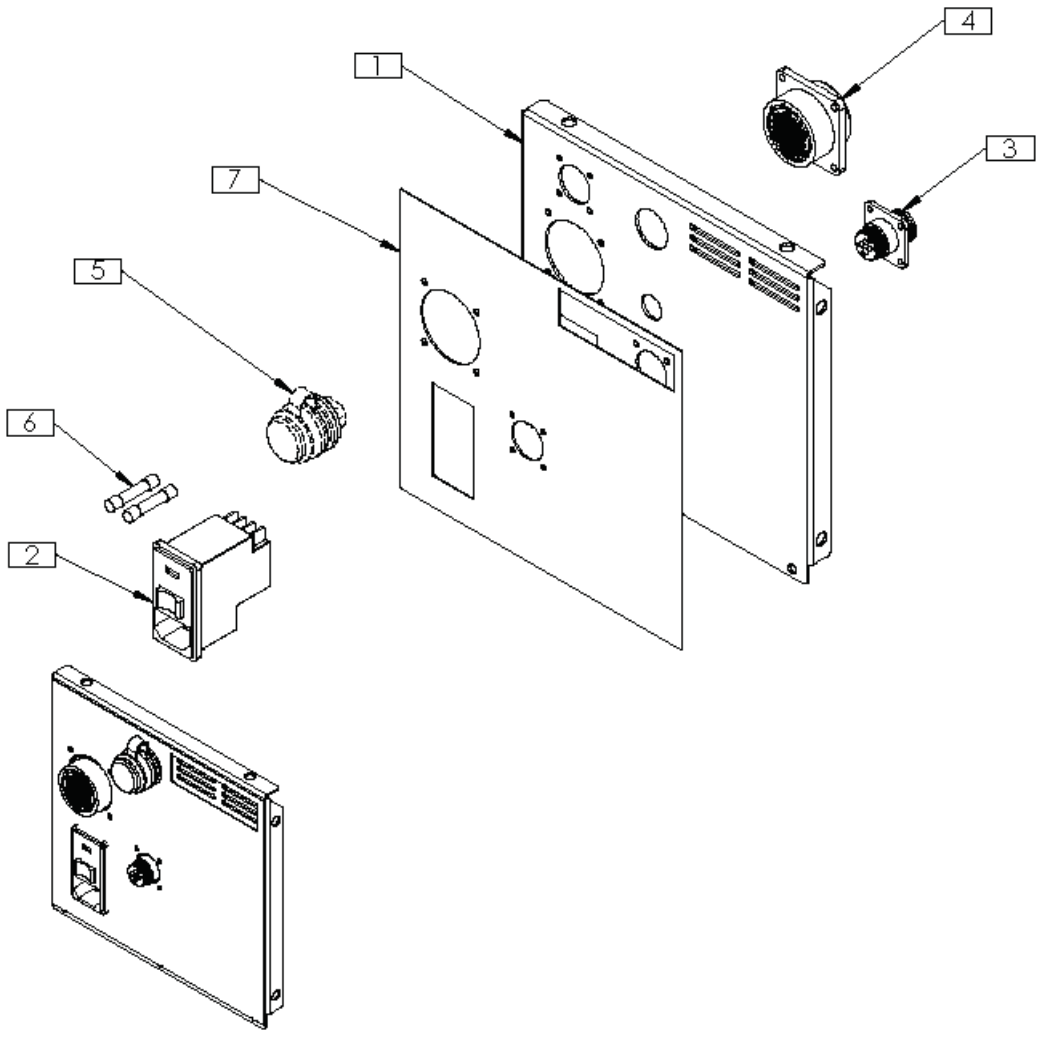
XM-12 ULTRA
REAR PANEL ASSEMBLY



ITEM NO.	PartNo	DESCRIPTION	QTY.
1	300456	REAR PANEL	1
2	100243	AC INLET	1
3	112039	AMP CONNECTOR	1
4	300700	AMP CONNECTOR 37 PIN	1
5	300702	ETHERNET CONNECTOR (OPTION)	1
6	100424	FUSE	2
7	301969	BACK PANEL LABEL	1

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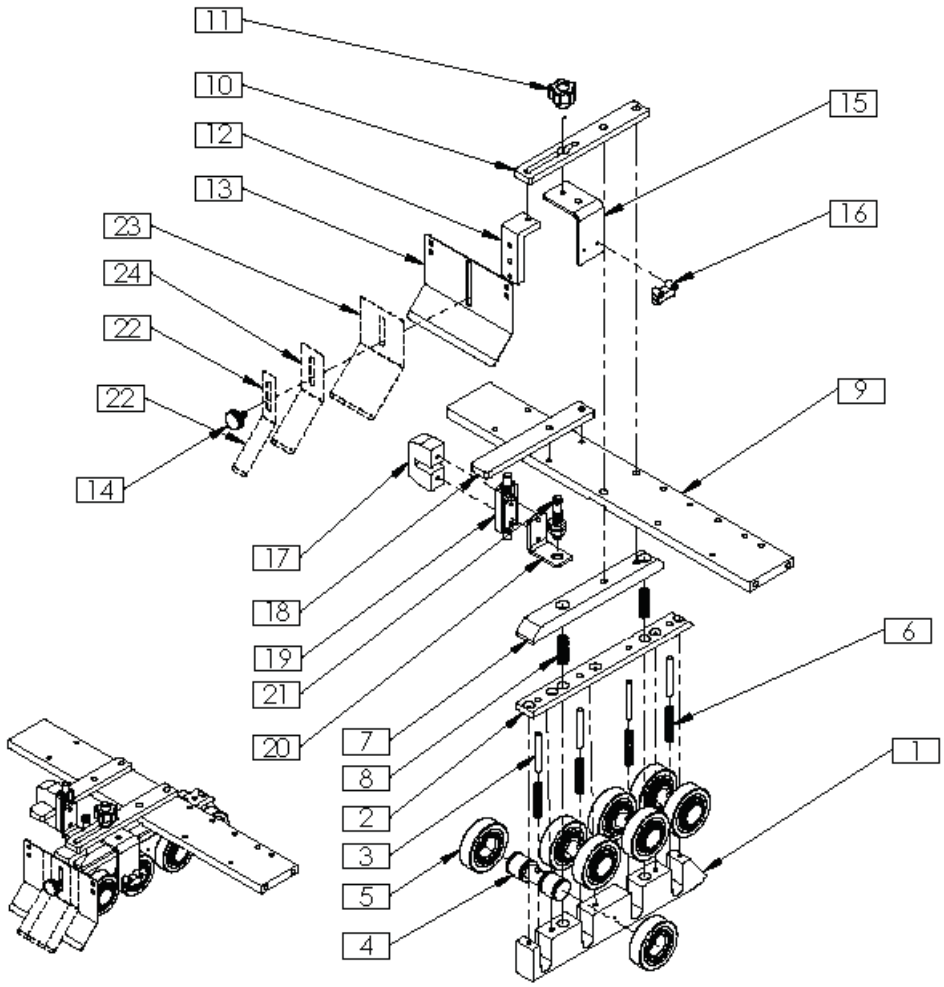
HOLD DOWN ASSEMBLY



ITEM NO.	PartNo	DESCRIPTION	Qty
1	100208C	BOTTOMSECTION	1
2	100216C	HOLDDOWN	1
3	100688	DOWEL PIN	4
4	100209	HOLD DOWN AXEL	4
5	100214	BEARING	8
6	100212	SPRING	4
7	100208D	HOLD DOWN TOP	1
8	350081	SPRING	2
9	100213	CROSS BAR HOLD DOWN	1
10	100259	MOUNTED SHEET SENSOR BRACKET	1
11	100391	KNOB	1
12	301875	SENSOR MOUNT	1

ITEM NO.	PartNo	DESCRIPTION	Qty
13	100566D	DEFLECTOR	1
14	350082	THUMB SCREW	1
15	100260A	SENSOR BRACKET	1
16	100387B	HIGH SPEED SENSOR	1
17	300090	SLIDE CLAMP	1
18	300092	SENSOR RAIL	1
19	300095	ADJUSTMENT DEVICE	1
20	300091	SENSOR BRACKET	1
21	100482	PROX SENSOR	1
22	301876	SPRING STEEL (OPTION)	1
23	302093	SPRING STEEL (OPTION)	1
24	302092	SPRING STEEL (OPTION)	1

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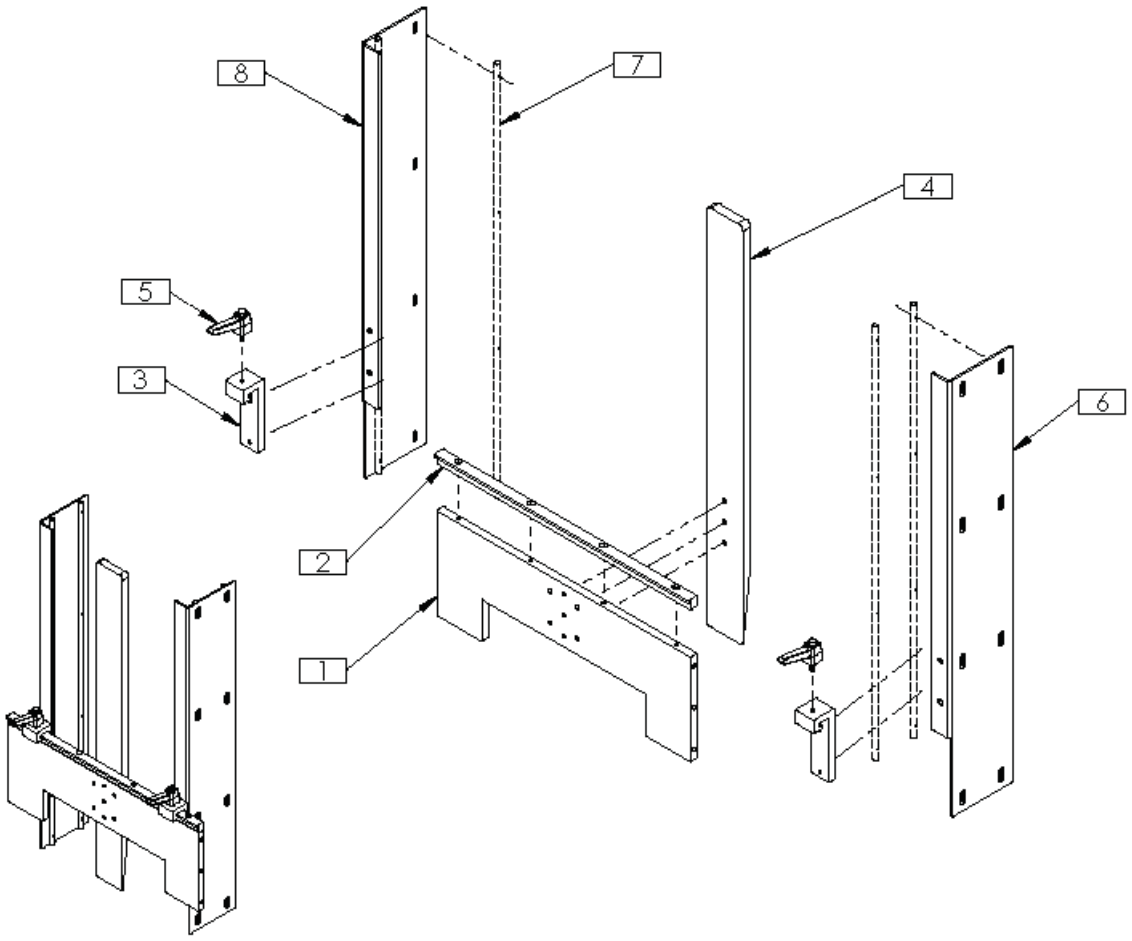
HOPPER ASSEMBLY



ITEM NO.	Part No	DESCRIPTION	QTY.
1	100199	HOPPER MOUNT	1
2	100202	GUIDE RAIL HOPPER	1
3	100203	CLAMP GUIDE	2
4	100201	CENTER HOPPER PLATE	1
5	100373	HANDLE	2
6	100205	SIDE GUIDE LEFT	1
7	100233	GUIDE ROD (OPTION)	4
8	100204	SIDE GUIDE RIGHT	1

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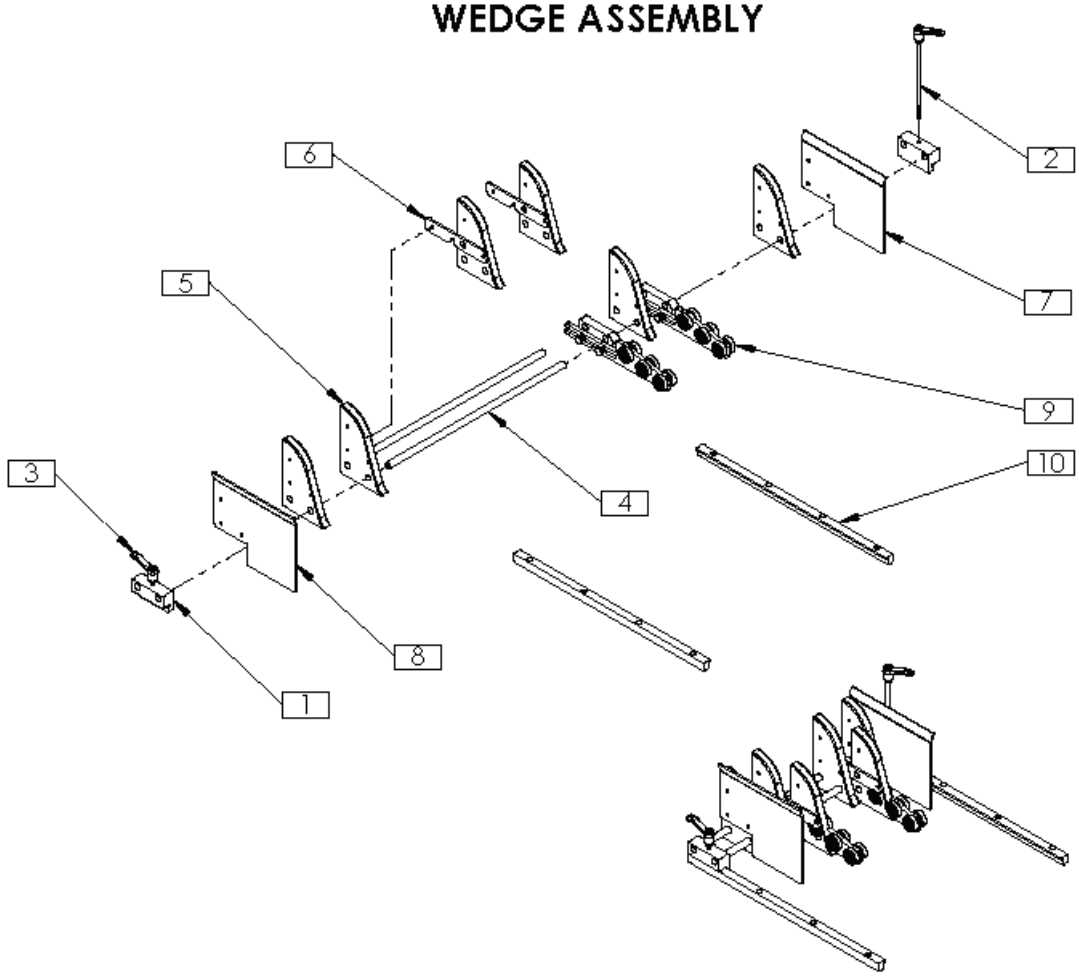
WEDGE ASSEMBLY



ITEM NO.	Part No	DESCRIPTION	QTY.
1	100221	BLOCK WEDGE SLIDE	2
2	100697	HANDLE ASSEMBLY	1
3	100523	ADJUSTABLE HANDLE	1
4	100220	GUIDE BAR WEDGE LIFT	2
5	100222	WEDGE BLOCK	6
6	100444A	WEDGE BLOCK EXTENSION BRACKET	2
7	100232	GUIDE WEDGE SIDE LEFT	1
8	100235	GUIDE WEDGE SIDE RIGHT	1
9	400028	LOW PROFILE WEDGE BLOCK ASSEMBLY	2
10	100202	GUIDE RAIL HOPPER	2

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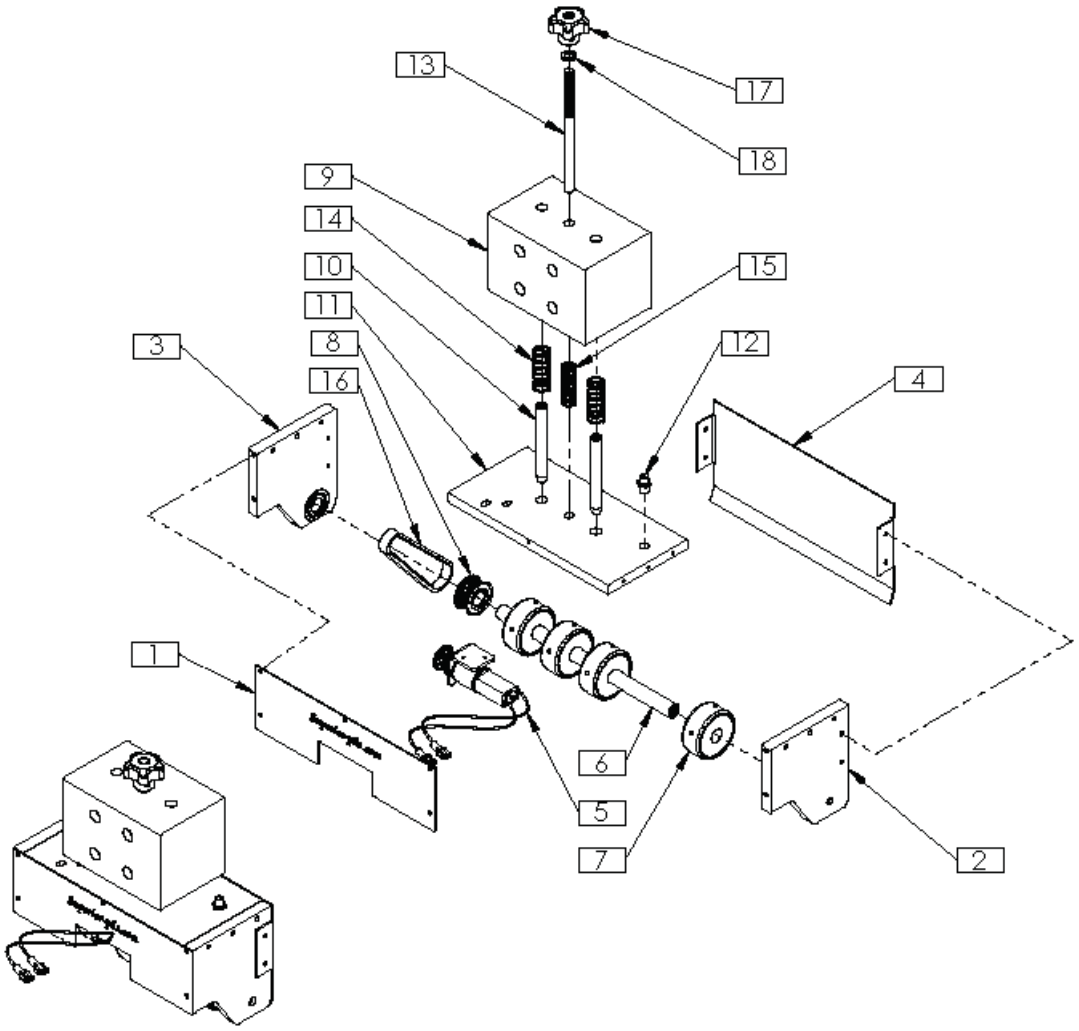
SEPERATOR POWER ASSEMBLY



ITEM NO.	Part No	DESCRIPTION	QTY.
1	100165	FRONT POWERED SEPERATOR	1
2	400014	LEFT SIDE PLATE	1
3	400015	RIGHT SIDE PLATE	1
4	100169	LEAD-IN PREGATE	1
5	400018	MOTOR SEPERATOR ASSEMBLY	1
6	100174	SHAFT	1
7	100172	SEPARATOR ROLLER	4
8	100194	TIMING PULLEY	1
9	100170	MOUNT	1

ITEM NO.	Part No	DESCRIPTION	QTY.
10	100177	DOWEL PIN	2
11	100166	TOP PLATE	1
12	100428	BULK HEAD CONNECTOR	1
13	301596	ADJUSTMENT ROD	1
14	100372	COMPRESSION SPRING	2
15	100184	COMPRESSION SPRING	1
16	100187	TIMING BELT	1
17	100173	THREADED KNOB	1
18	100378	NYLON WASHER SEPARATOR	1

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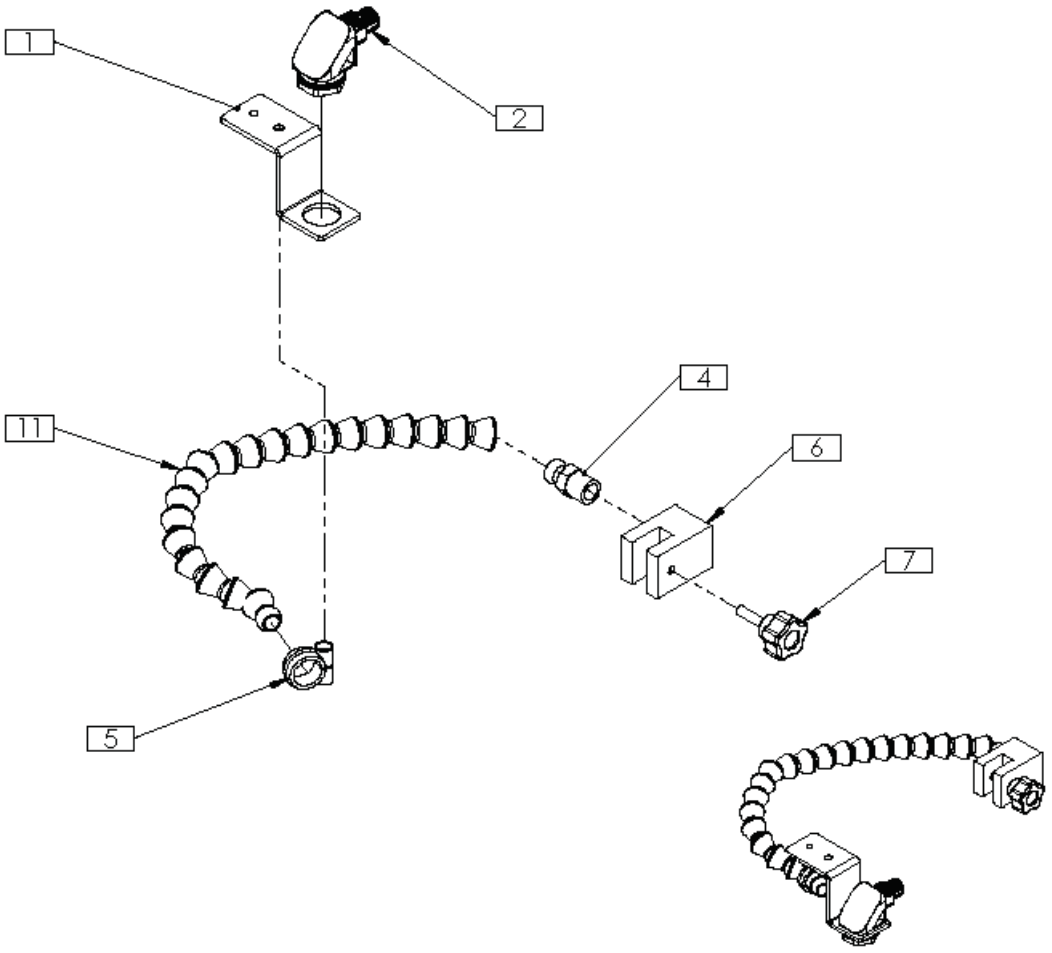
TRIGGER SENSOR ASSEMBLY



ITEM NO.	Part No	DESCRIPTION	QTY.
1	100260	SENSOR BRACKET	1
2	100388	SENSOR	1
4	100394	NPT CONNECTOR	1
5	100395	CLAMP	1
6	100261	SENSOR BRACKET	1
7	100392	KNOB	10
8	100389	CABLE (NOT SHOWN)	1
9	100398	CONNECTOR (NOT SHOWN)	1
10	100399	CLAMP (NOT SHOWN)	1
11	100393	LOCLINE	2

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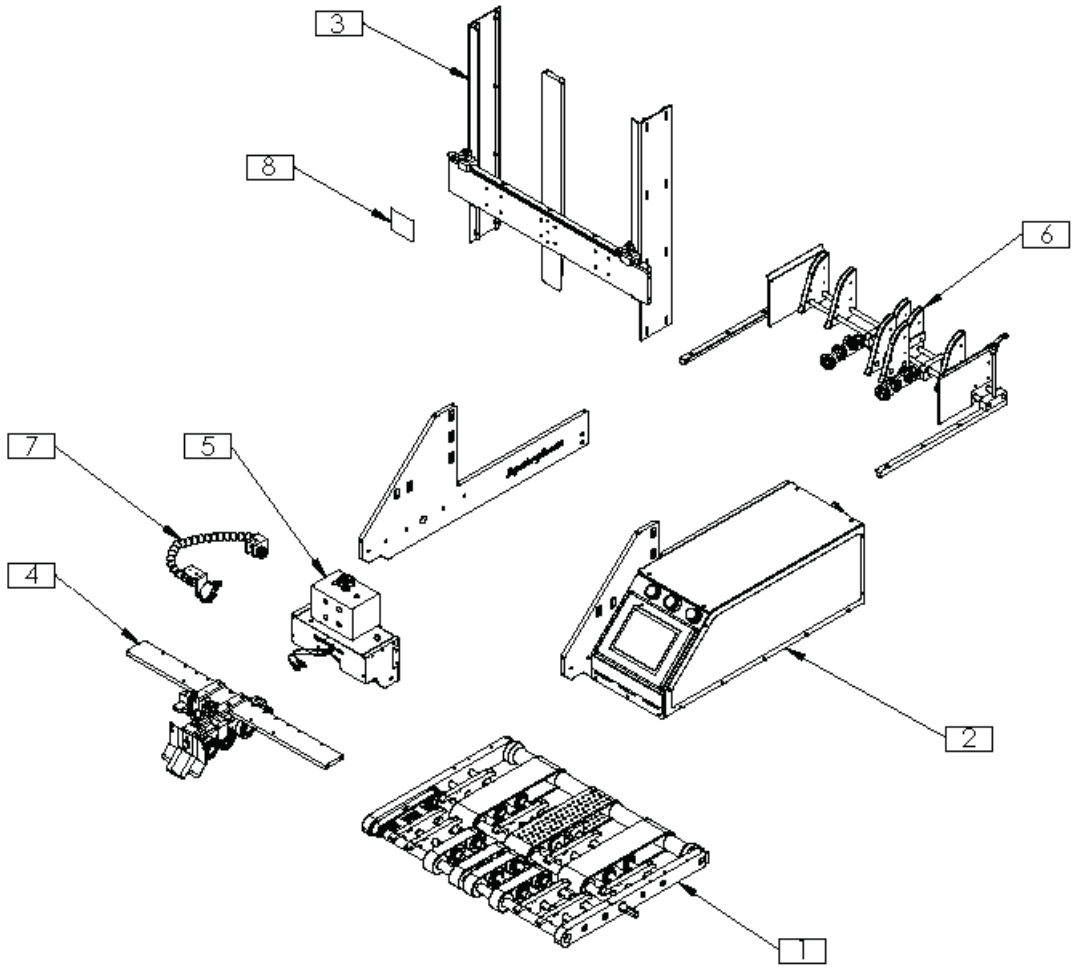
SECTION 5B: PARTS LIST (XM20U]



ITEM NO.	PartNo	DESCRIPTION	Qty
1	400112	20 INCH HS CARRIAGE	1
2	400346	ULTRA CHASSIS	1
3	400115	XM-20 HOPPER ASSEMBLY	1
4	400122	3 PIECE HOLD DOWN HS ASSEMBLY	1
5	100164	SEPARATOR POWERED ASSEMBLY	1
6	400123	WEDGE ASSEMBLY	1
7	100390	TRIGGER SENSOR ASSEMBLY	1
8	350286	YEARLY LABEL	1

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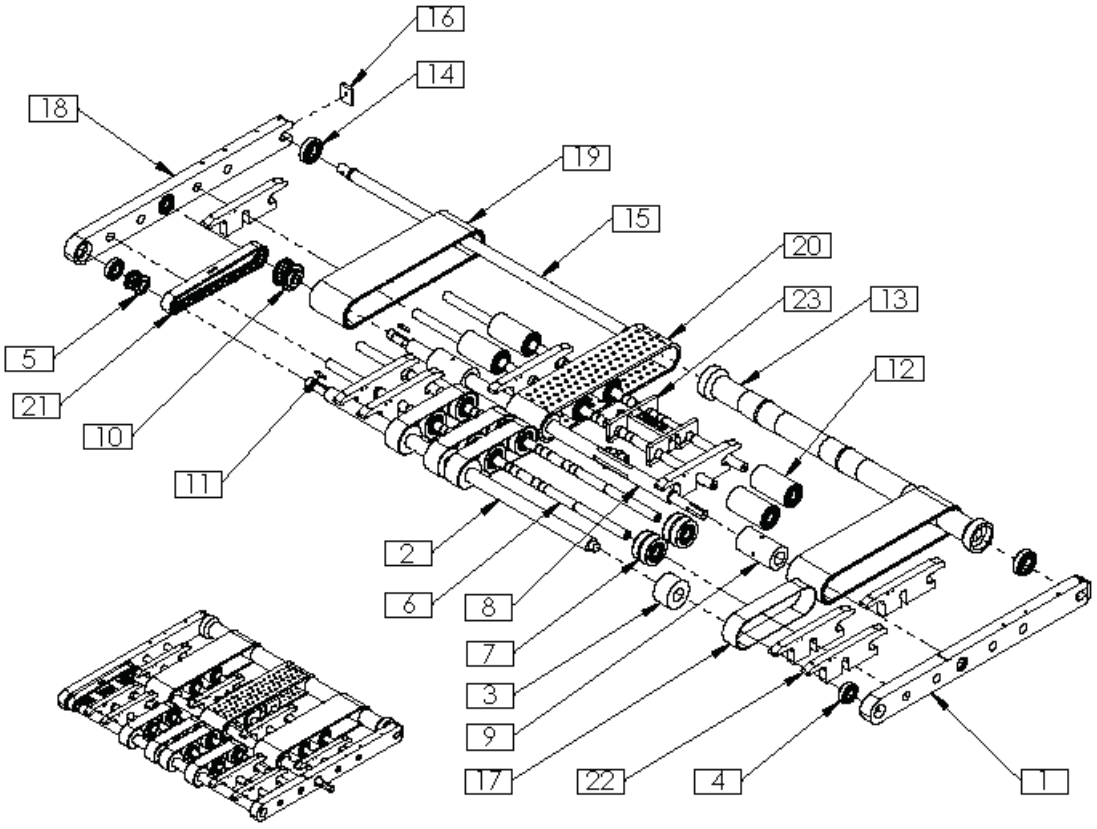
XM-20 ULTRA
CARRIAGE ASSEMBLY



ITEM NO.	PartNo	DESCRIPTION	Qty
1	400066	CARRIAGE LH ASSEMBLY	1
2	300212	DRIVE SHAFT	1
3	300217	DRIVE PULLEY	4
4	100141	BEARING	2
5	100621A	TIMING PULLEY	1
6	300216	IDLER SHAFT	4
7	100148	PULLEY IDLER CROWN SHORT ASSEMBLY	8
8	300210	MAIN DRIVE SHAFT	1
9	300218	FEED BELT DRIVE PULLEY	3
10	350022	TIMING PULLEY	1
11	300650	KEY	2
12	100147	FLAT IDLER LONG ASSEMBLY	6

ITEM NO.	PartNo	DESCRIPTION	Qty
13	300221	SHAFT	1
14	300222	R10 BEARING	2
15	300211	REAR IDLER SHAFT	1
16	100161	TENSION PLATE	2
17	100159	BELT	4
18	400053	CARRIAGE RH ASSEMBLY	1
19	300224	BELT	2
20	100157	FEED VACUUM BELT	1
21	100620	TIMING BELT	1
22	300223	PRODUCT SUPPORT WEDGE	8
23	100611	VACUUM ASSIST ASSEMBLY	1

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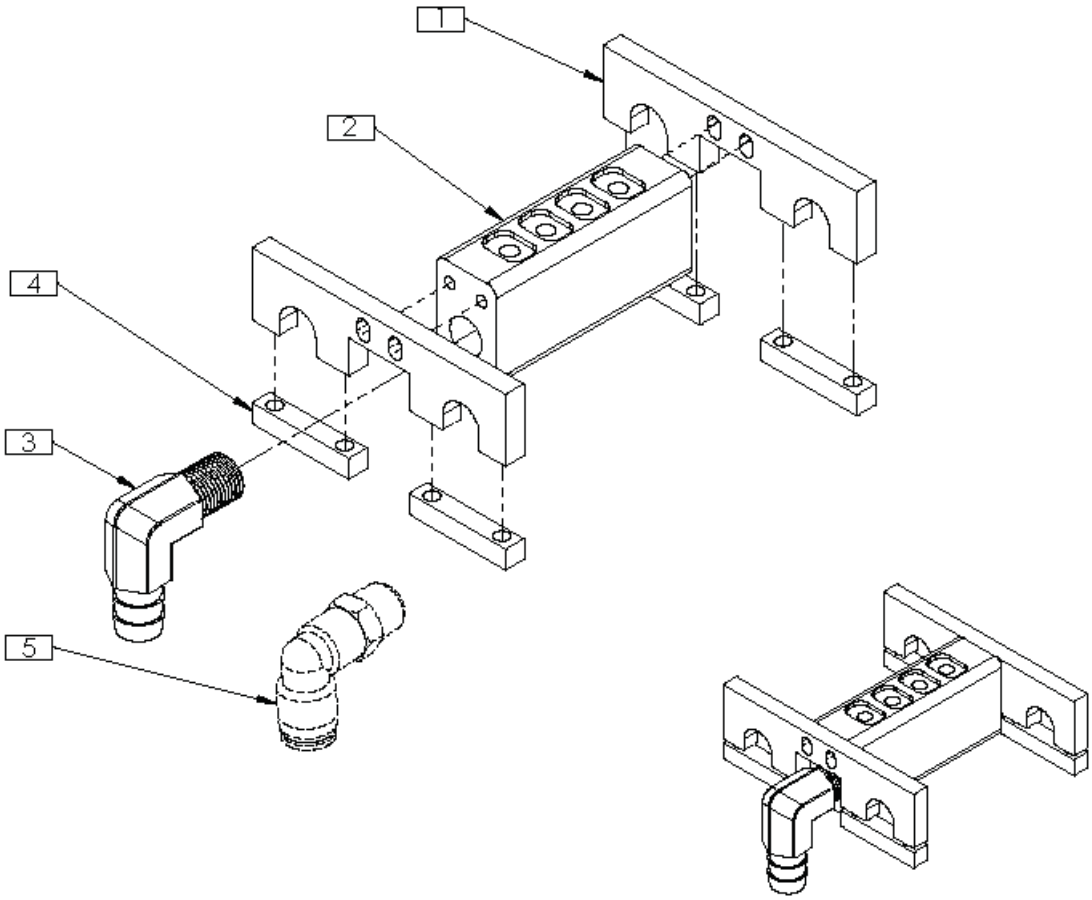
VACUUM ASSIST ASEMBLY



ITEM NO.	PartNo	DESCRIPTION	Qty
1	100608	BRACKET	2
2	100607	VACUUM BLOCK	1
3	100613	VACUUM ASSIST FITTING	1
4	100609	KEEPER RAIL VACUUM MANI FOLD	4
5	350098	PUSH-IN L-FITTING (OPTION)	1

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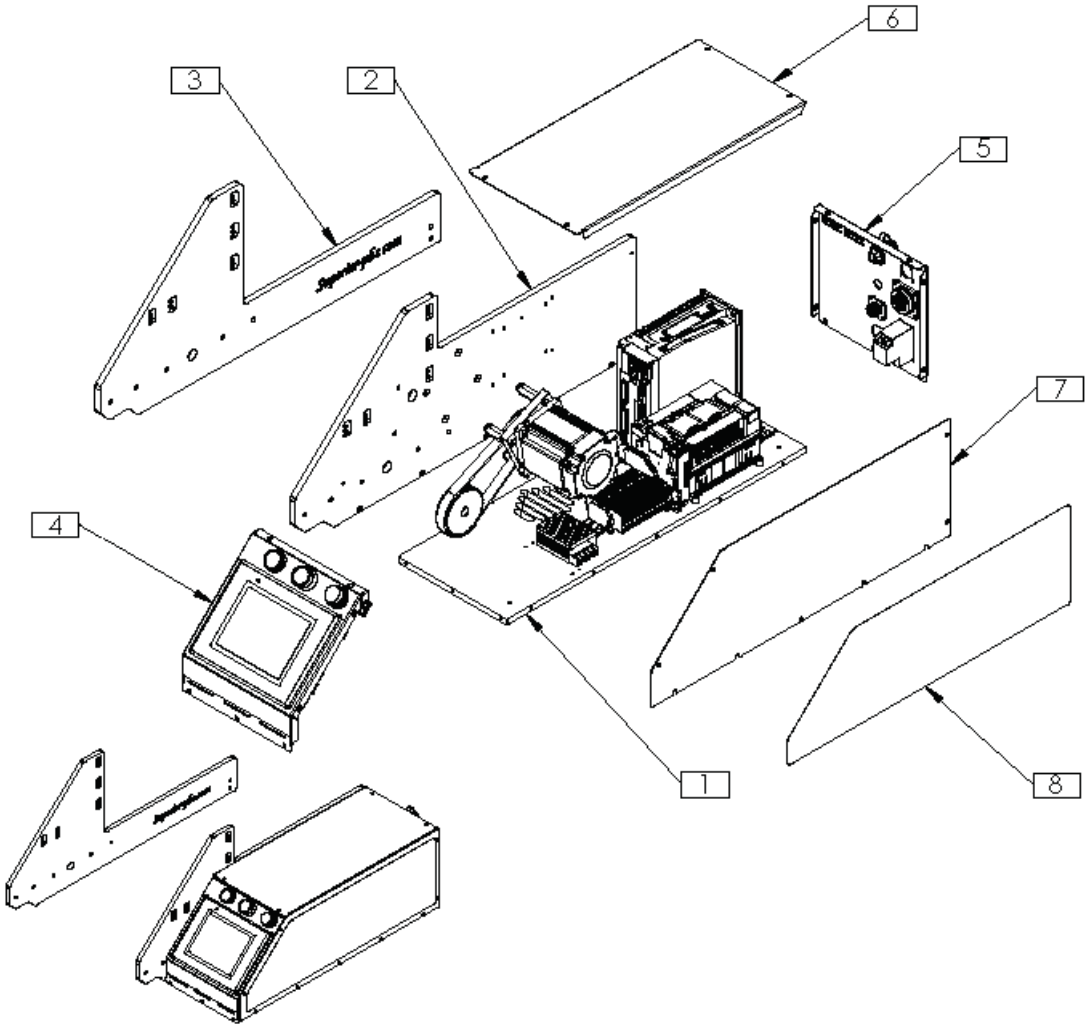
XM-20 ULTRA
SERVO CHASSIS - COVERS



ITEM NO.	PartNo	DESCRIPTION	Qty
1	300450	BASE PLATE CHASSIS	1
2	300451	SIDE PLATE LH	1
3	300452	SIDE PLATE RIGHT	1
4	400357	FRONT PANEL ASSEMBLY	1
5	400356	REAR PANEL ASSEMBLY	1
6	300458	TOP PANEL	1
7	300457	SIDE PANEL	1
8	301872	SIDE PANEL LABEL	1

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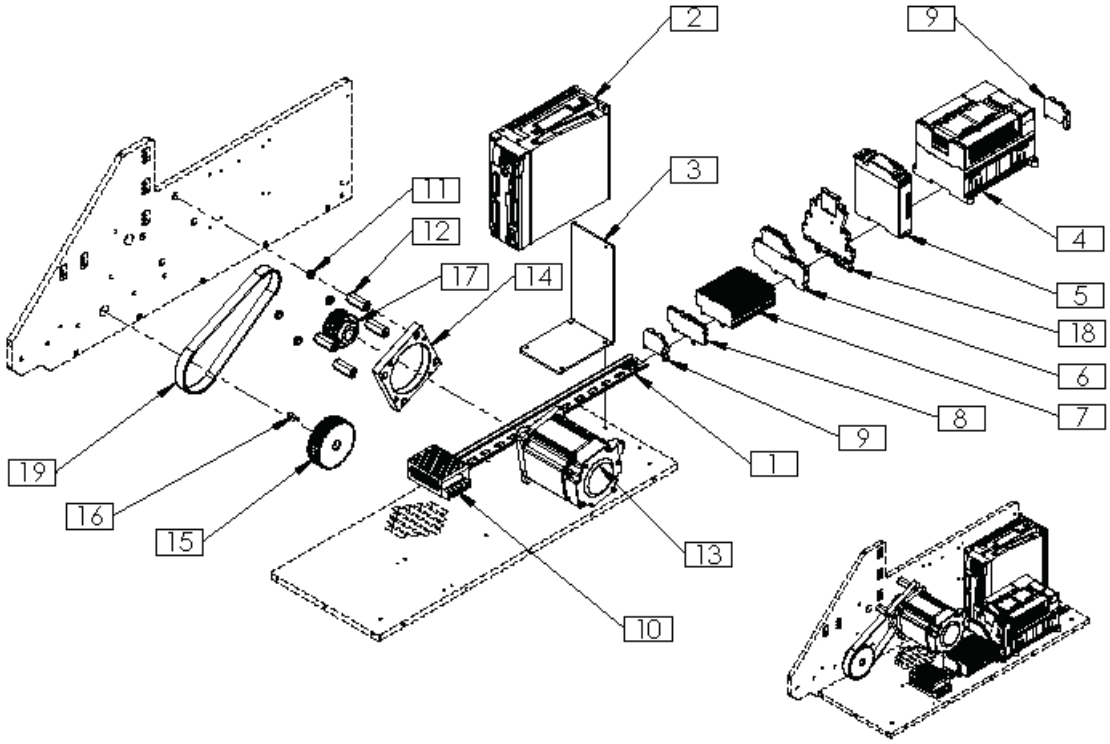
XM-20 ULTRA
SERVO CHASSIS - ELECTRICAL



ITEM NO.	Part No	DESCRIPTION	Qty
1	350089	13.75 INCH DIN RAIL	1
2	350134	SERVO DRIVER	1
3	300855	MOUNTING BRACKET	1
4	200144	CPU	1
5	200145	POWER SUPPLY	1
6	350084	FUSE HOLDER	1
7	350085	TERMINAL BLOCK	15
8	301073	GROUND BLOCK	1
9	301078	TERMINAL BLOCK END	2
10	100583	POWER SUPPLY	1

ITEM NO.	Part No	DESCRIPTION	Qty
11	100276	RUBBER GROMMET	4
12	100237	STANDOFF	4
13	350133	MOTOR	1
14	300670	MOUNT	1
15	350050	PULLEY	1
16	300650	KEY	1
17	350051	TIMING PULLEY	1
18	200146	COIL RELAY	1
19	301478	TIMING BELT	1

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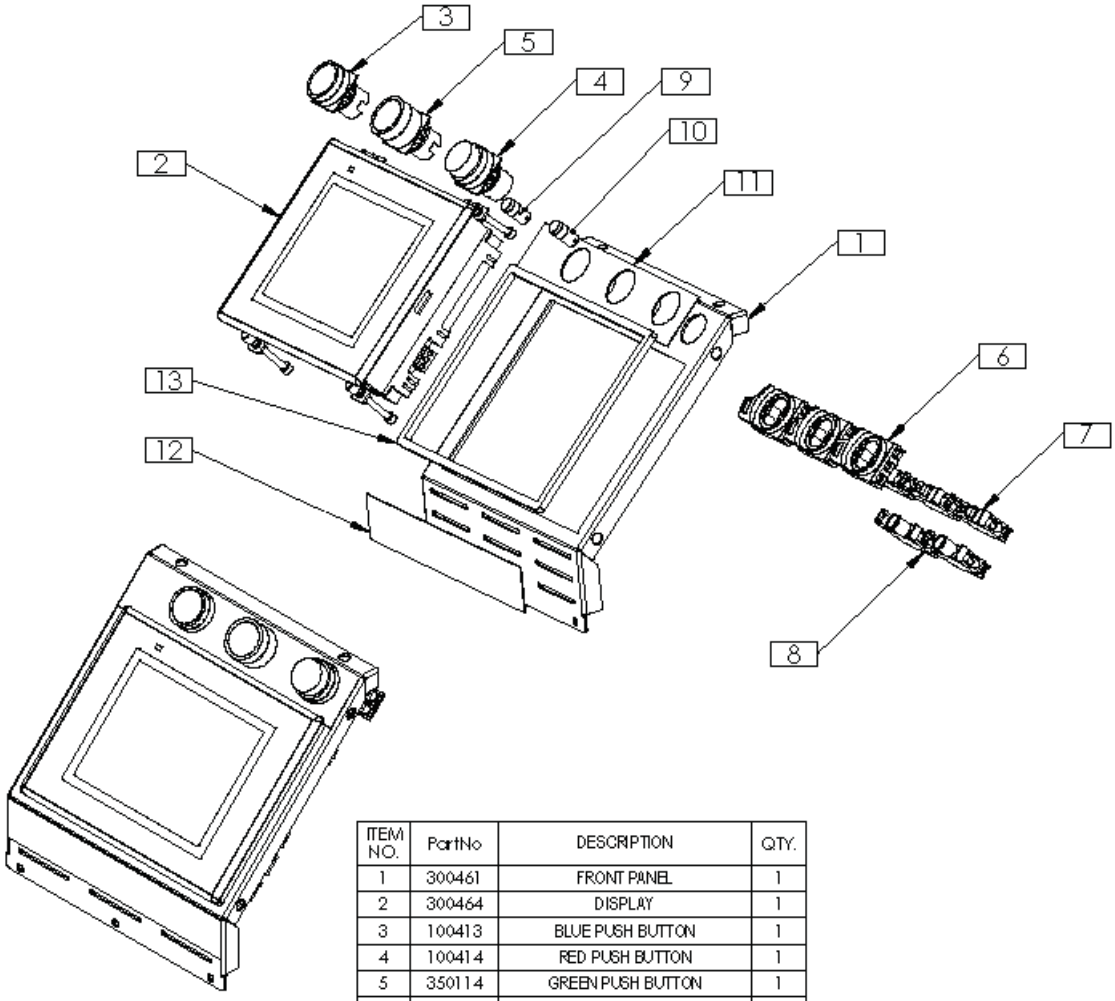
XM-20 ULTRA
FRONT PANEL ASSEMBLY



ITEM NO.	PartNo	DESCRIPTION	QTY.
1	300461	FRONT PANEL	1
2	300464	DISPLAY	1
3	100413	BLUE PUSH BUTTON	1
4	100414	RED PUSH BUTTON	1
5	350114	GREEN PUSH BUTTON	1
6	350113	MOUNTING COLLAR	3
7	350116	NO CONTACT BLOCK	3
8	350115	LIGHTING UNIT	2
9	350120	GREEN LED LAMP	1
10	350121	RED LED LAMP	1
11	301971	FRONT PANEL LABEL	1
12	301973	FRONT PANEL LABEL	1
13	301888	SCREEN STANDOFF	1

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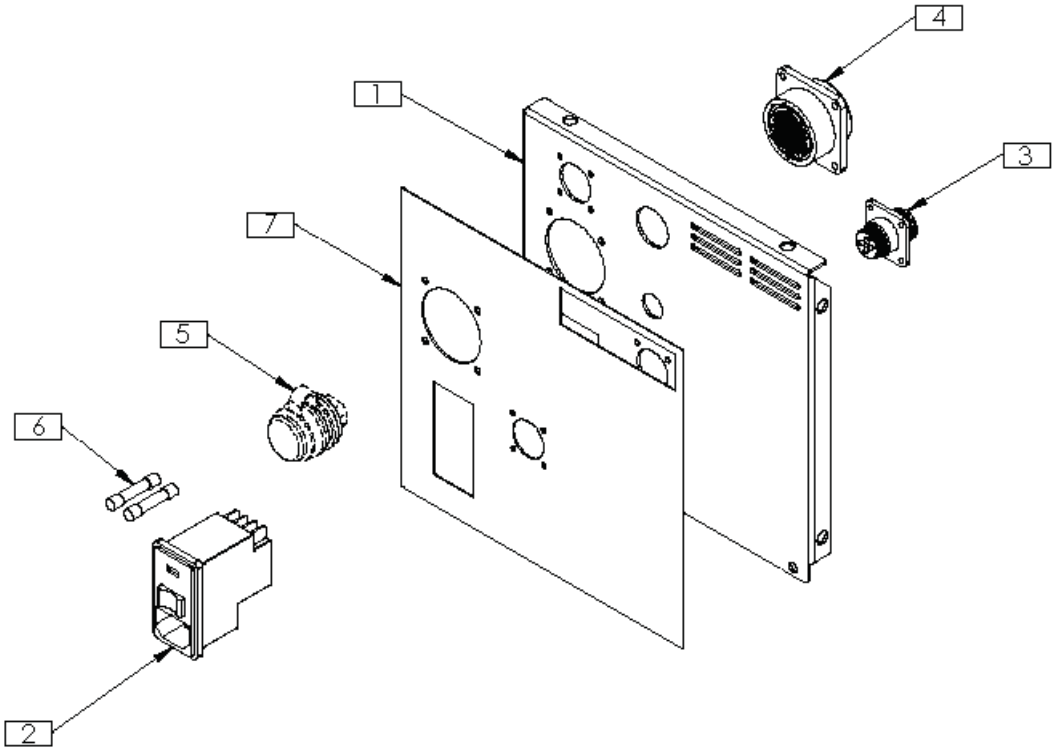
XM-20 ULTRA
REAR PANEL ASSEMBLY



ITEM NO.	PartNo	DESCRIPTION	QTY.
1	300456	REAR PANEL	1
2	100243	AC INLET	1
3	112039	AMP CONNECTOR	1
4	300700	AMP CONNECTOR 37 PIN	1
5	300702	ETHERNET CONNECTOR (OPTION)	1
6	100424	FUSE	2
7	301972	BACK PANEL LABEL	1

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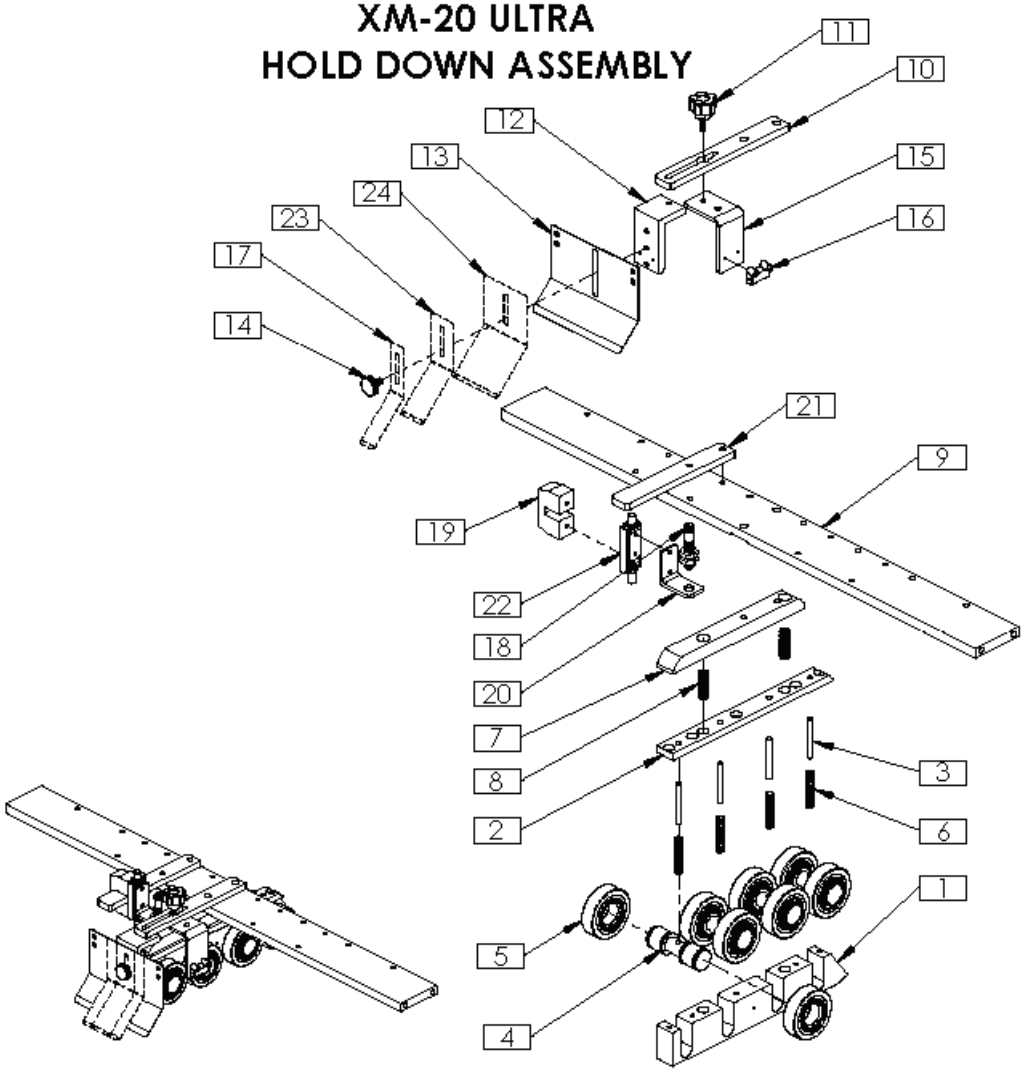
XM-20 ULTRA
HOLD DOWN ASSEMBLY



ITEM NO.	PartNo	DESCRIPTION	Qty
1	100208C	BOTTOM SECTION	1
2	100216C	HOLDDOWN	1
3	100688	DOWEL PIN	4
4	100209	HOLD DOWN AXEL	4
5	100214	BEARING	8
6	100212	SPRING	4
7	100208D	HOLD DOWN TOP	1
8	350081	SPRING	2
9	300215	CROSSBAR HOLD DOWN	1
10	100259	MOUNTED SHEET SENSOR BRACKET	1
11	100391	KNOB	1
12	100565A	SENSOR MOUNT	1

ITEM NO.	PartNo	DESCRIPTION	Qty
13	100566D	DEFLECTOR	1
14	350082	THUMB SCREW	1
15	100260A	SENSOR BRACKET	1
16	100387B	HIGH SPEED SENSOR	1
17	301876	SPRING STEEL (OPTION)	1
18	100482	PROX SENSOR	1
19	300090	SLIDE CLAMP	1
20	300091	SENSOR BRACKET	1
21	300092	SENSOR RAIL	1
22	300095	ADJUSTMENT DEVICE (OPTION)	1
23	302092	SPRING STEEL (OPTION)	1
24	302093	SPRING STEEL (OPTION)	1

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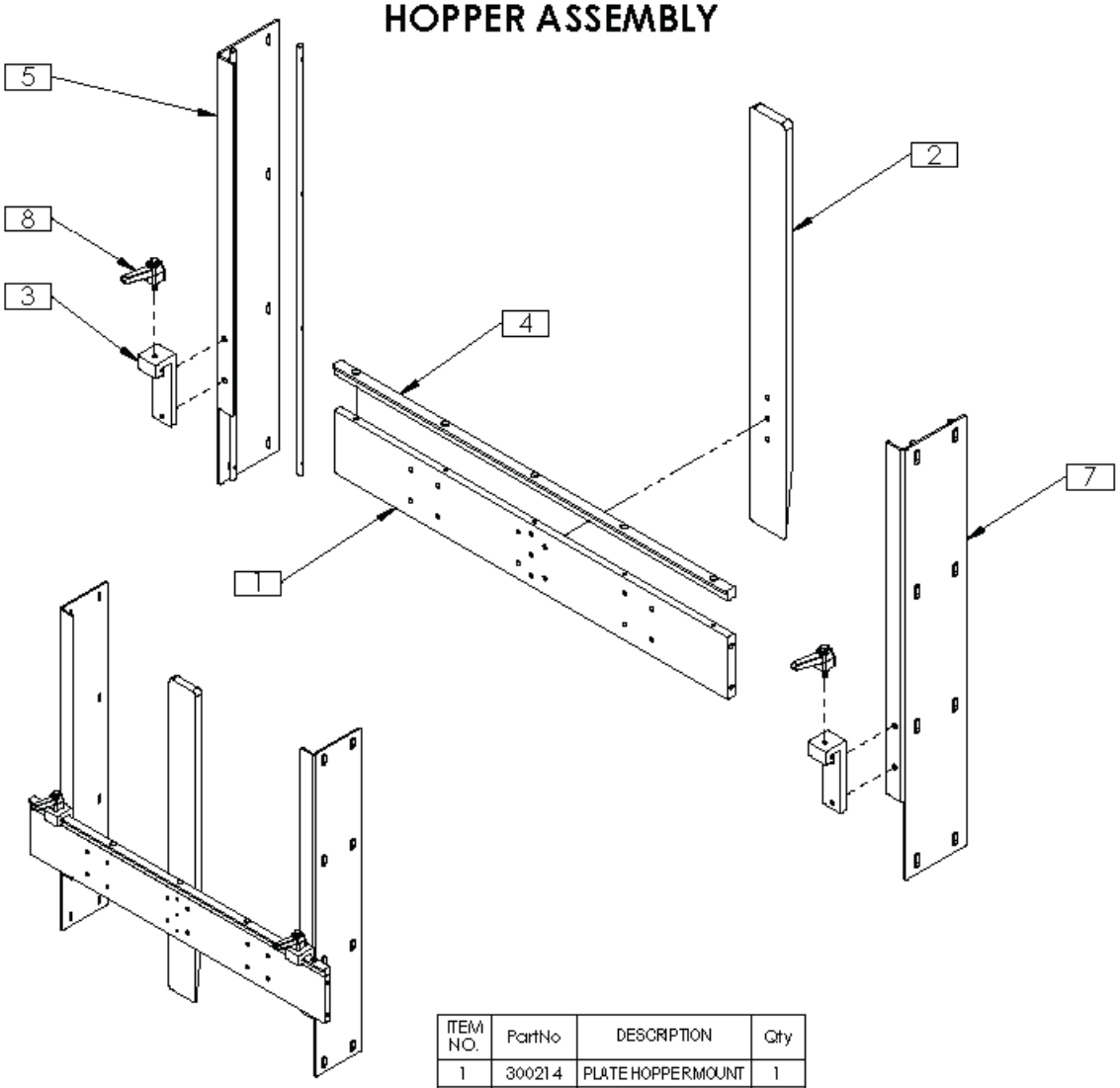
XM-20 ULTRA
HOPPER ASSEMBLY



ITEM NO.	PartNo	DESCRIPTION	Qty
1	300214	PLATE HOPPER MOUNT	1
2	100201	CENTER HOPPER PLATE	1
3	100203	CLAMP GUIDE	2
4	300213	GUIDE RAIL HOPPER	1
5	100204	SIDE GUIDE RIGHT	1
6	100233	GUIDE ROD (OPTION)	4
7	100205	SIDE GUIDE LEFT	1
8	100373	HANDLE	2

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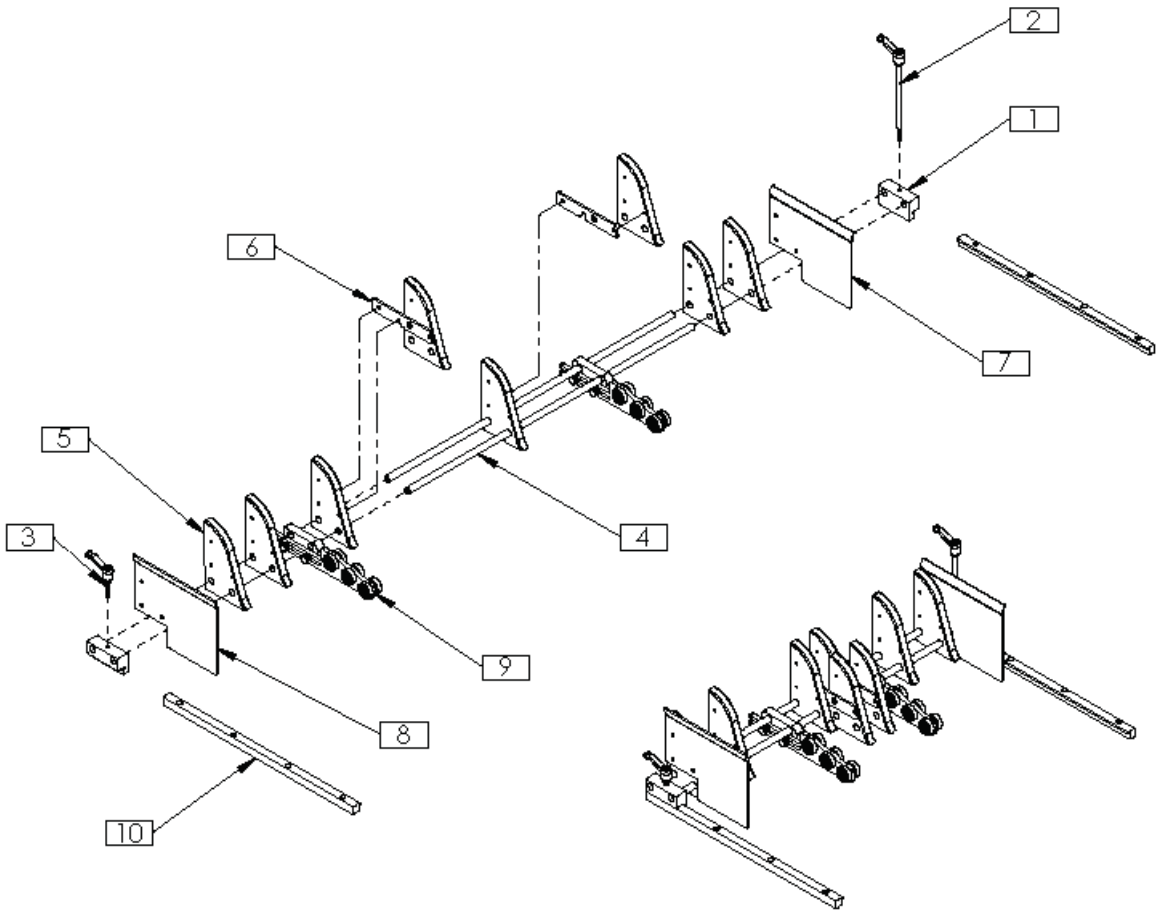
XM-20 ULTRA
WEDGE ASSEMLBY



ITEM NO.	Part No	DESCRIPTION	Qty
1	100221	BLOCK WEDGE SLIDE	2
2	100697	HANDLE ASSEMBLY	1
3	100523	ADJUSTABLE HANDLE	1
4	100220A	GUIDE BAR WEDGE LIFT	2
5	100222	WEDGE BLOCK	8
6	100444A	WEDGE BLOCK EXTENSION BRACKET	2
7	100232	GUIDE WEDGE SIDE LEFT	1
8	100235	GUIDE WEDGE SIDE RIGHT	1
9	400028	LOW PROFILE WEDGE BLOCK ASSEMBLY	2
10	100202	GUIDE RAIL HOPPER	2

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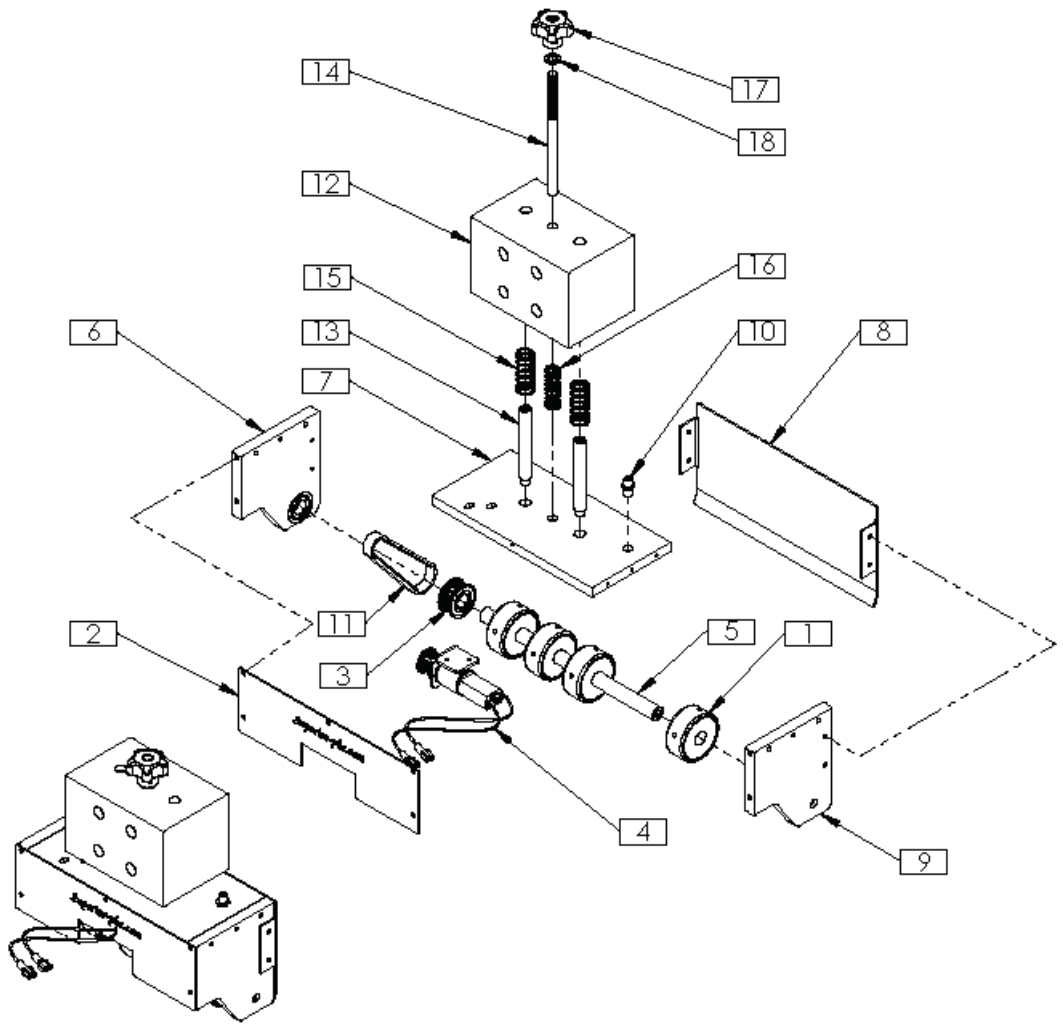
SEPERATOR POWER ASSEMBLY



ITEM NO.	PartNo	DESCRIPTION	Qty
1	100172	SEPARATOR ROLLER	4
2	100165	FRONT POWERED SEPERATOR	1
3	100194	TIMING PULLEY	1
4	400018	MOTOR SEPERATOR ASSEMBLY	1
5	100174	SHAFT	1
6	400015	RIGHT SIDE PLATE	1
7	100166	TOP PLATE	1
8	100169	LEAD-IN PREGATE	1
9	400014	LEFT SIDE PLATE	1

ITEM NO.	PartNo	DESCRIPTION	Qty
10	100428	BULK HEAD CONNECTOR	1
11	100187	TIMING BELT	1
12	100170	MOUNT	1
13	100177	DOWEL PIN	2
14	301596	ADJUSTMENT ROD	1
15	100372	COMPRESSION SPRING	2
16	100184	COMPRESSION SPRING	1
17	100173	THREADED KNOB	1
18	100378	NYLON WASHER SEPARATOR	1

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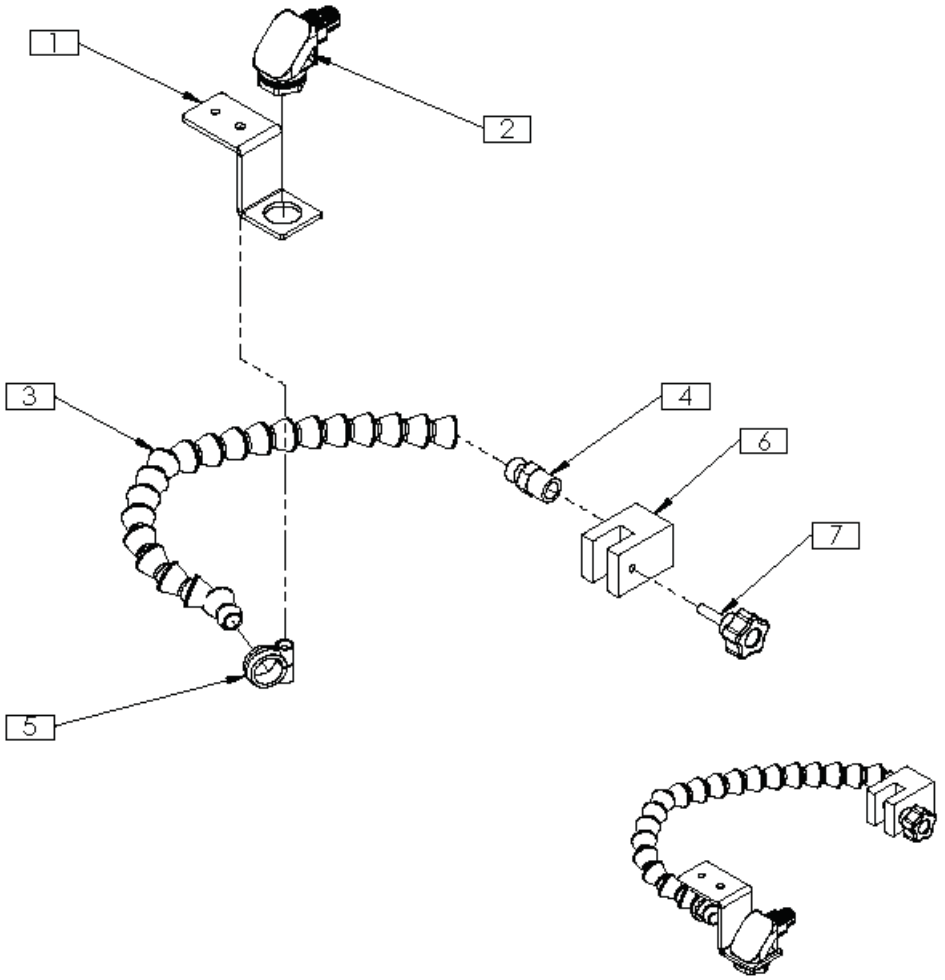
TRIGGER SENSOR ASSEMBLY



ITEM NO.	Part No	DESCRIPTION	Qty
1	100260	SENSOR BRACKET	1
2	100388	SENSOR	1
3	100393	LOCLINE	2
4	100394	NPT CONNECTOR	1
5	100395	CLAMP	1
6	100261	SENSOR BRACKET	1
7	100392	KNOB	10
8	100389	CABLE (NOT SHOWN)	1
9	100398	CONNECTOR (NOT SHOWN)	1
10	100399	CLAMP (NOT SHOWN)	1

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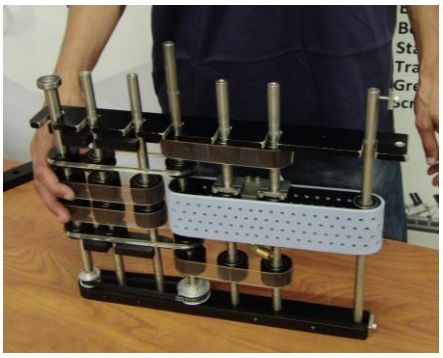
SECTION 6: ACCESSORIES AND AFTERMARKET OPTIONS

Carriage Jig



The Carriage Jig is a tool designed to help you change Xtreme XM feeder belt in a matter of minutes. Simply remove the carriage holder, swap out the belts, and use the Carriage Jig to hold all the shafts in place and slide the carriage holder back in place...effortlessly!

36” Feeder Hopper Extension

Xtreme XM feeders come standard with up to 20" product stacking. Maximize product stacking with 36" feeder hopper extensions. Great for thicker products! *(XM-1 shown left)*

Right Side Feeder Control Panel

Superior-PHS adds the versatile left or right feeder control panel option depending on your production floor space/setup. Operators can avoid walking around any obstacles to reach the control panel. **(***Shown: XM-1 left, XM-12HS right)*

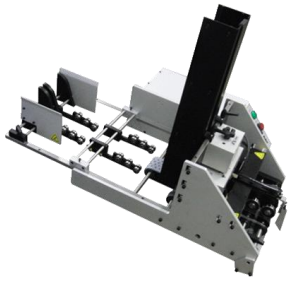
XM-100 Bulk Loader

If you’re looking to get more stacking capability in your feeder, the XM-100 Bulk Loader is designed to off-set the vertical stacking weight of your product by automatically delivering product horizontally to the feeder hopper. Product can be stacked 6-ft horizontally and is great for thick products and bulk quantities. Up to 12" and 20" wide product feeding (XM-100 and XM-200 respectively).

Vacuum Extension

Add vacuum assist feeding for scanning, reading, printing, and labeling applications. Product is accurately and consistently fed with a secure hold

Wedge Rail Extension Kit



Required for products longer than 12"L. Designed to support longer product stack height and feed during transit. Available in two sizes: products up to 18"L and products up to 27"L.

.Adjustable Mounting Stand

Designed with locking swivel casters and low-toe profile for mobility on the production floor. Available in 30-40" adjustable and 40-50" adjustable heights. P/N 100966

Hopper Hold Down

The Hopper Hold Down is a great accessory to maximize stack height by controlling the integrity of the stack and increase even feeding performance. P/N 100881

XM Batching Tray

Designed to accumulate batch counted products in neat stacks for manual removal. Easily adjusts to product sizes - the perfect semi-automated counting solution. Available in three sizes: products up to 12", 20", and 30" wide.

Inline Mounting Kit

Mount feeder inline on any flighted/lugged conveyor top - used in lieu of the adjustable mounting stand. Easy adjust and quick detach.

Victory BD Dropper

Eliminate the need for off-line product counting and batching. Add a Victory Dropper inline to automate batching and stacking of product over an existing flighted/lugged conveyor. A Victory Dropper automatically drops counted stacks onto the moving conveyor. Available in Bombay, Shutter, Retractable, and Rotary Star Wheel™ styles.

Inline Reverse Tray

Easily mounts over existing flighted/lugged conveyors for inline batching. The tray catches up to 1/4" stacks as it's pulled into the pocket by the moving conveyor lug. A cost-effective option for inline batching.

Vacuum Pump

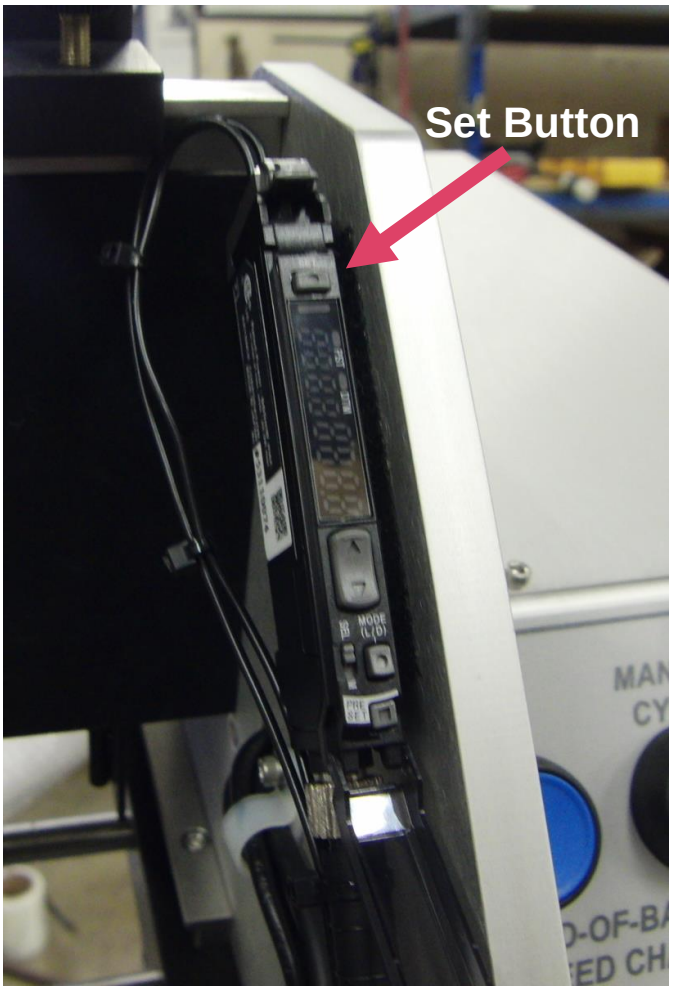
All Xtreme XM feeders come with a vacuum assist belt and manifold. Adding a vacuum supply while feeding product aids in product separation and consistent feeding performance. (Image shown is for reference purposes only. Not the actual pump.)

OPTIONAL: Burn-Thru Double Sheet Detector

The Optional Burn-Thru Double Sheet Detect feature provides added security to applications where all sheets fed need to be accounted for. Along with the standard Miss Detect feature, the optional Burn-Thru Double Sheet Detect feature ensures that only one product is being fed at a time.

Setting the Double Sheet Detect feature

1. Move the Double Detect Enable/Disable Toggle switch located on the feeder rear panel to the Enable position.
2. Manually insert 2 paper sheets into the discharge of the feeder between the upper and lower double detect sensor.
3. Open the cover on the Amplifier, push the Set button twice. On second time, display will flash.
4. When done flashing, Double Detect is set. Close and secure the cover to the amplifier and remove the paper sheets from the discharge of the feeder.
5. To test for verification, set up product in the feeder (see set-up procedure) and cycle a few singles through. Open up the separator a bit to allow a double to advance to the sensor, if set correctly, the feeder will stop and blink the RESET lamp at the Double Detect medium speed.
6. To clear the double detect, remove the paper sheets from the feeder and press the reset button, the feeder will return to ready mode.
   Note: ***You cannot cycle the feeder when there is a double. It will stop each time. You can Jog the double out or pull it out by hand.***
7. If necessary, readjust the separator before loading or feeding any more sheets.
8. *Please note: Sensor needs to always be set to Dark-on mode. Refer to sensor instruction sheet that came with the feeder if you're not sure.*



SECTION 7: MAINTENANCE

Please remember that all maintenance and service to the XTREME Versatile 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, pulleys, and rollers should **only be cleaned with Isopropyl Alcohol**.

A good practice is to clean the belts and rollers weekly. If running UV or Aqueous coated materials, daily cleanings are recommended.

Sensors

Wipe sensors with a clean lint free cloth to clear any dust build up. Recheck the adjustment of the sensors if they were moved during cleaning and reset.

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.

Separator Assembly Removed from 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.

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How to Change Xtreme XM Feeder Belts

Remove all power from the feeder before changing belts

Figure 1: Remove control cabinet cover. Remove front panel.

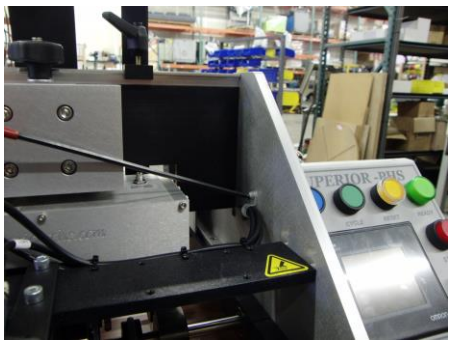

Figure 2:

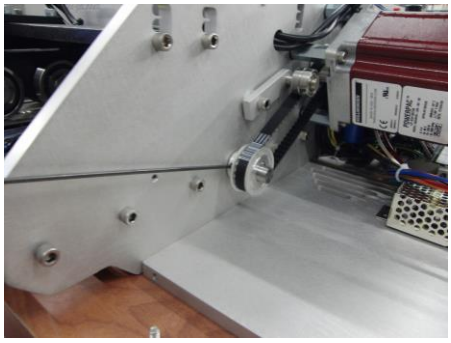

Figure 3: Remove front driver sprocket

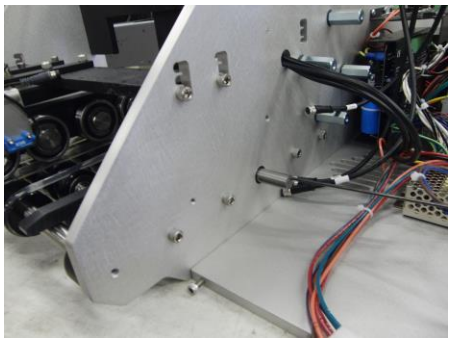

Figure 4:

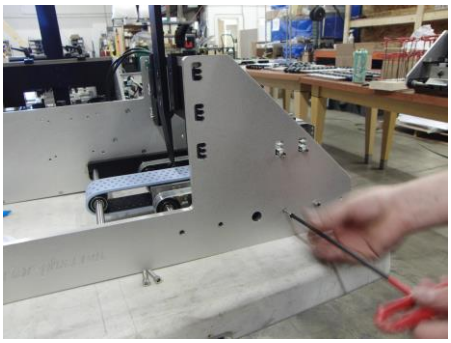

Figure 5: Remove all screws on the right feeder panel. Note: top screws are 3/4", bottom screws are 1"

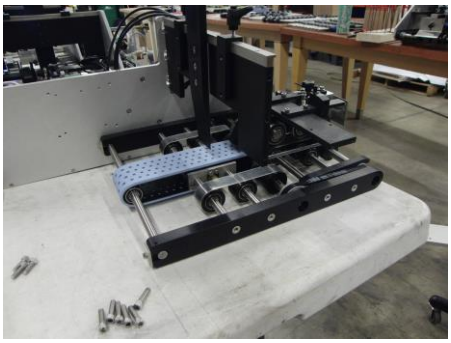

Figure 6

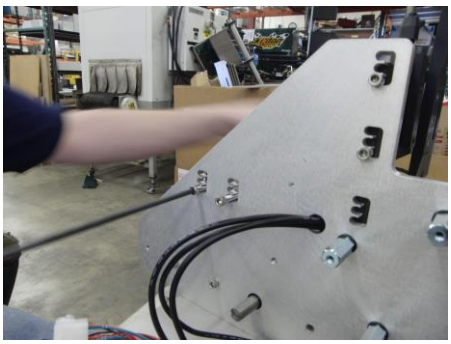

Figure 7: Remove top 2 screws on left panel to completely remove hold down assembly.

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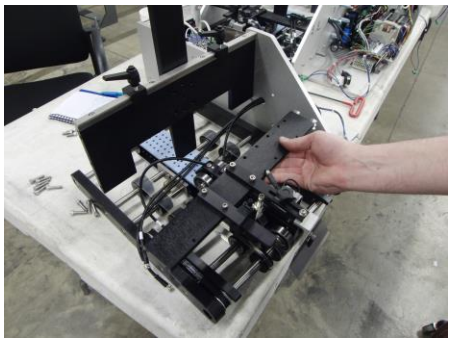

Figure 8: Remove hold down assembly.

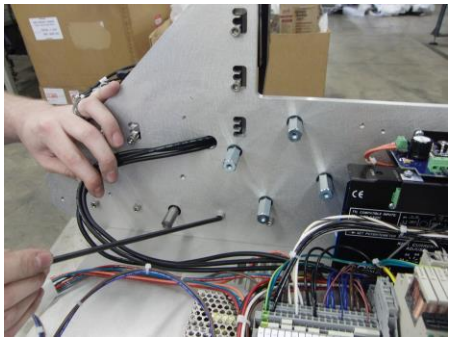

Figure 9: Remove bottom 4 screws on the left panel to release the carriage.

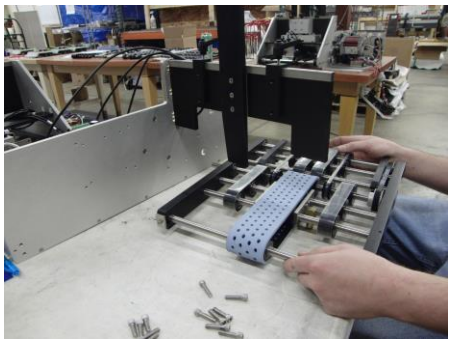

Figure 10

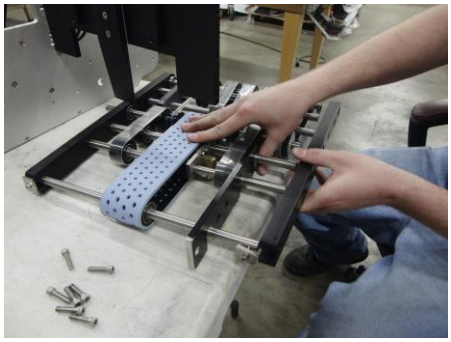

Figure 11: Use the Carriage Jig (sold separately) to hold all shafts in place. Slide the right side carriage holder off the carriage.

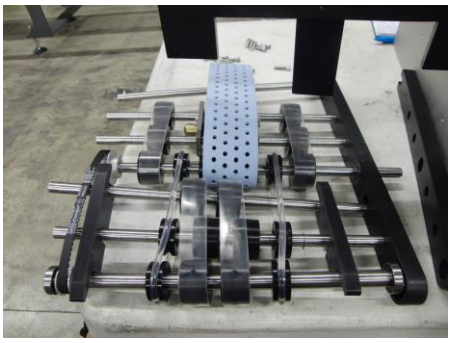

Figure 12: Referencing this image, remove belts and replace from right to left.

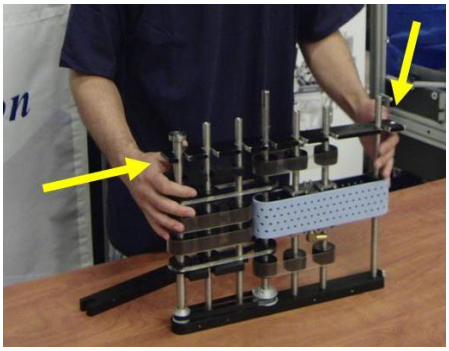

Figure 13: Use Carriage Jig to hold all shafts in place and slide carriage holder back in place.

Figure 14: Perform steps 1-11 in reverse order to reassemble.

NOTE: DO NOT OVERTIGHTED THE FIRST SCREW ON EITHER SIDE OF THE FEEDER.
There is supposed to be a gap between the screw and the panel. Over tightening will cause resistance, or locking up, of the lead shaft.

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SECTION 8: OPERATIONAL TROUBLESHOOTING

Difficulty	Possible Cause	Proposed Solution
No AC power to the unit	1. On/Off switch in Off position (O). 2. Power cord loose or not plugged into AC source. 3. Power cord loose or not plugged into unit. 4. Blown Fuse(s)	1. Move switch to On position (-). 2. Check connection to AC source. 3. Check connection to unit. 4. Replace fuse(s) (consult technician)
Belts are turning but product is not feeding	1. Separator not properly adjusted. 2. Hopper side guides are too tight. 3. Interlocking or adhered product. 4. Static 5. Product stack-height too low or too high. 6. Slick feed belt.	1. Review separator setup instructions. 2. Review hopper setup instructions. 3. Check product. 4. Consult with a qualified technician. 5. Review Operation, Step 1 instructions. 6. Consult with a qualified technician, clean belt.
Double feeding	1. Separator not properly adjusted. 2. Wedge support not properly adjusted. 3. Worn separator rollers. 4. Separator rollers spin freely.	1. Review separator setup instructions. 2. Review wedge support setup instructions. 3. Consult with a qualified technician, replace rollers. 4. Consult with a qualified technician, check separator drive belt and pulleys.
Jamming or skewing	1. Improper setup. 2. Interlocking or adhered product.	1. Review setup instructions on Separator, Hopper/Wedge, and Discharge Hold-Down. 2. Check product.
Gate Rollers Not Turning		1. See Additional Setup Information: *Choosing Between Forward and Reverse Rotation*
Feeder Gives Over Count	1. End-of-Batch Speed Change is set ≥ Batch Size 2. Sheet sensor photo cell is positioned over a shaft. 3. Batch Count is set incorrectly	1. Set End-of-Batch Speed Change thumb wheel to ***less than*** Batch Size 2. Be sure the photo cell is seeing a gap between product indicated by the light turning on and off as product passes 3. Jog product and check for ≥1" gap between products. See setup 4. Contact a technician
Feeder Gives Under Count	1. Batch Count is set incorrectly 2. Photo cell is detecting (a) reflective product, (b) curled product, or (c) a color on a sheet activating a second count.	1. Change the angle or position of the photo cell 2. Order optional photo cell.

SECTION 9: GLOSSARY OF TERMS

AC INLET MODULE -Provides power to the feeder (60or 50Hz). This module has built-in fuse protection and on/off switch.

BATCH SIZE -The Batch Size is represented on the PLC run screen. The batch size represents the number of pieces that will be dispensed for each cycle of the feeder. If the batch size is set to 01, one piece will be dispensed when the cycle is initiated. If set to 99, ninety-nine pieces will be dispensed when the cycle is initiated. The Sheet Detect Sensor is used to count trailing edges to ensure product count. It also acts as the "stop" for each cycle.
When the batch size is set to 00, the feed belts will turn continuously when the feed cycle is initiated and will continue turning until the stop button is pressed (continuous mode). Changes to the batch size cannot be accepted during a feed cycle (including continuous run). Changes can only be accepted during all other conditions.

CYCLE -The Cycle pushbutton is a momentary pushbutton that will send a signal for the feeder to perform a complete feed cycle. The ## setting on the batch size will determine the number of pieces to be fed for each cycle. The Cycle button is Green in color. This function only works when the feeder is in ready mode.

DOUBLE DETECTION -This device is used to sense the presence of multiple pieces when only one should be present. Detection of a "double" feed will stop the feeder and take it into a fault condition. The fault condition is represented by a MEDIUM speed blink (repeating ½ second on, ½ second off) on the fault/reset pushbutton. In this condition, the feeder stops and the ready signal is dropped (green lamp off). The operator must physically remove the double from the feeder in order to reset the condition. Once the material is removed, the fault can be reset by pressing the fault/reset pushbutton thus returning the feeder to ready mode (green lamp on). The Double Detector device will be located (mounted) toward the end of the discharge just prior to exiting. The touchscreen function allows the user to use this feature or not.

END-OF-BATCH -This feature is represented by a one-position on the touchscreen setting and a variable speed adjusting dial. End-of-Batch is used to either speed up or slow down the end of the batch. The # on the screen represents the piece that the speed change will take place on. If the batch size is set to 20 and the speed change is set to 1, the speed change will take place after piece 19 has been dispensed. If set to 2, the change will take place after piece 18 has been dispensed, and so on. Activated on leading edge of piece. If set to zero, no speed change will take place. The # on the screen must be at least one digit smaller than that displayed on the batch size. If not, no speed change will occur. The independent speed setting will be used to either slow down or speed up based on its position compared to the main speed dial.

EXTERNAL INTERFACE - Discreet signals used to communicate out and in with other equipment. Signals include a "ready" output, "trigger" input, "remote stop" input, and "trigger echo" output.

FAULT/RESET -Lamp (orange) and pushbutton combo. Used to provide a visual clue to feeder errors and to provide a reset of those error conditions. The conditions are as follows:
Miss Detect – Slow Blink (1-second on, 1-second off – repeating)
Timeout – Fast Blink (1/16-second on, 1/16-second off – repeating)

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Double Detect (Option) – Medium Blink (1/2-second on, ½-second off – repeating)
Stop – Solid on with a solid on stop lamp
Power up – Solid on with no other lamps

JOG -The Jog pushbutton functions so that when depressed and held, the belts turn. When released, the belts stop. This feature allows the operator to automatically advance product through the feeder each time it is pressed and held. This feature operates during setup mode and ready mode.

MISS DETECTION -Miss detect is represented when more than one trigger signal is sent prior to completion of feed cycle. A screen setting allows the user to enable or disable miss detect. When enabled, a miss will stop the feeder, drop the green ready lamp, and slow blink the fault/reset lamp (1-second on, 1-second off – repeating). Pressing the fault/reset pushbutton will clear the fault lamp and illuminate the green ready lamp, putting the feeder back into ready mode. When this feature is disabled, the feeder will not stop when a miss feed is detected. The miss detect feature is ignored when the bath size is set to 00 / continuous mode.

READY LAMP-Lamp only (green). This indicates a visual clue that the feeder is ready to receive trigger signals and that there are no fault conditions. This signal is N.C. when on and changes to N.O. when off.

SHEET SENSOR -The sheet sensor is located in the discharge of the feeder and mounted on an adjustable mechanical arm. It will act as the “cycle stop” and will double as a counter when batch counting is used. The standard sensor is a light-on, diffuse reflective. This sensor is activated by leading edge.

STOP -Pressing the Stop button will automatically put the feeder into Stop Mode indicated by a solid red lamp located in the stop pushbutton. In addition, the green ready lamp will turn off and the orange fault/reset lamp will illuminate solid. Pressing the fault/reset pushbutton will remove the feeder from stop mode and return it to ready mode thus turning the stop and fault/reset lamps off and the green ready lamp on.

TIMEOUT -The timeout feature is a software-based feature that monitors “out-of-product”. If a cycle signal is initiated, the software will monitor the change in the sheet detect sensor. If no change occurs (either blocked or unblocked) for 2 consecutive seconds, the feeder will go to timeout and be represented by a FAST (repeating 1/16 second on, 1/16 second off) blink of the fault/reset lamp. Pressing the fault/reset pushbutton will clear the fault and return the feeder to ready mode. This feature is ignored when batch size is set to 00 (continuous mode). The PLC (enable/disable) allows the user to use this feature or not.

TRIGGER DELAY - This feature (when used) will add delay to the trigger signal coming from the trigger sensor or externally through the I/O interface. The delay range is 0.0 seconds up to 2.0 seconds. The settings are in increments of 1/10th second. 0.0 represents no delay and 2.0 represents full delay.

TRIGGER SENSOR -Also known as Flight Sensor. This sensor is used to trigger the feeder when an object passes through the detect range of the sensor. As an object passes through the detect range, the trigger sensor signal will cause the feeder to perform a feed cycle. The cycle will only take place if the feeder is in ready mode. More than

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one trigger signal prior to completion of a feed cycle will be represented as a Miss-Feed. The standard sensor is a light-on, diffuse reflective sensor. The Trigger sensor is activated by leading edge.

Signal Definitions:

Ready Output – Signal is normally low. Goes high when asserted. This signal is an indicator to other equipment that the feeder is ready to receive trigger signals.

Trigger Input – Signal is normally low. Goes high when asserted. This signal would typically come from an external source to cycle the feeder vs. using the trigger photo-sensor. Signal in should be a momentary contact closure, minimum 50ms.

Remote Stop Input – Signal is normally high. Goes low when asserted. This feature allows the user to wire in to other equipment stop circuits. Signal in should be a momentary contact closure, minimum 50ms. Signal from host can also “hold” this signal to prevent operators from resetting the feeder if other parts of the system are not ready.

Trigger Echo Output – This signal is normally low. Goes high when asserted. When the main trigger of the feeder takes place either by the cycle pushbutton, trigger photo-sensor, or through the Trigger Input I/O, this signal will go high during the duration of the main trigger signal and return to low. This feature allows several feeders to be triggered by one trigger device.

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SECTION 10: WARRANTY

WARRANTY:

***SUPERIOR – PHS* LIMITED WARRANTY**

Superior Paper Handling Solutions, Inc. (Superior – PHS) 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 shipment.

If you discover a defect during the warranty period, please notify the distributor from whom you purchased this product, who will arrange for the replacement parts to be sent to you. Defective parts must be returned to Superior – PHS for credit on replacement parts. Shipping and labor costs are not included in this warranty. If the defect is not field-repairable, and if you return it to Superior – PHS during the warranty period, Superior – PHS will, at its sole option, repair or replace this product, at no charge to you other than shipping charges to and from the facility in Minneapolis, Minnesota.

If you return this product to Superior – PHS for warranty repair or replacement, please attach to the returned product your name and your company's name, address, telephone number and fax number; a description of the problem; and a copy of the bill of sale or invoice that shows the appropriate serial number for the product. All returns must be accompanied by an authorized Superior – PHS Returned Goods Authorization (RGA) number. An authorized RGA number can be obtained from the Superior - PHS distributor from whom you purchased this product.

This warranty applies only to products manufactured by Superior - PHS. This warranty does not apply 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 - PHS; if the product has been modified without the written permission of Superior - PHS; or if the product's serial number has been removed or defaced. This warranty further does not apply to the failure of any rubber-based or consumable components including, but not limited to, rollers, bearings, belts, fuses, or bulbs.

ALL IMPLIED WARRANTIES INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND THE IMPLIED WARRANTY OF MERCHANTABILITY ARE HEREBY DISCLAIMED.

Superior - PHS 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, express or implied. There are no warranties that extend beyond the description on the face hereof. No Superior - PHS employee, distributor, or agent is authorized to make any modification, extension, or addition to this warranty.

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Notes

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