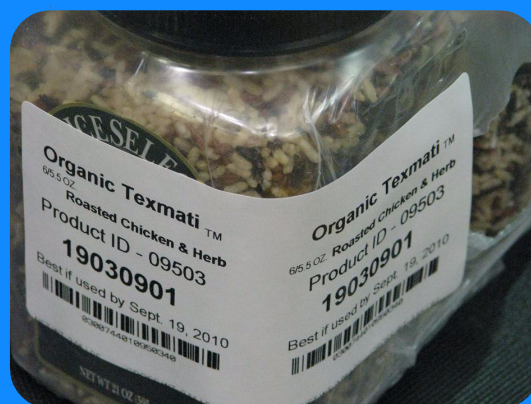


PLATINUM E-SERIES

Operator's Manual

E-Secondary Wipe



6170-190N
Revision A

Diagraph, an ITW company, continually improves its products, and reserves the right to change or discontinue specifications and designs shown in this manual without notice and without incurring obligation. Diagraph has made every effort to verify the information contained in this manual, but reserves the right to correct any error at the time of the manual's next revision.

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1.0 Introduction



1.1 The E-Secondary Wipedown

The E-Secondary Wipedown is an evolution of the prior pneumatic version, but now designed as a fully electric version. The E-Secondary Wipedown is designed to corner wrap labels around the side to rear (trailing) panels of the product, in conjunction with an upstream labeling system or systems. Modularity of design provides the basis for ease of installation, setup, and maintenance. The electronics system employs a hardware-specific design, thus increasing reliability and throughput. The hardware was developed to simplify construction, and increase longevity by using durable materials. This unit will perform 24/7 operation in harsh environments and operate trouble-free, given that the appropriate preventative maintenance is performed on regular service intervals.

This system is designed to operate as a stand-alone system, complete with its own product trigger. It does not electrically interface with the labeling system.

1.2 Product Safety

Safety awareness is critical when working with equipment that contains moving parts and extending electric actuators. Please read all warnings and cautions thoroughly before operating this device.

This product meets the requirements of CAN/CSA-22.2 NO.60950-00 * UL 60950 using Diagraph an ITW Company approved items. Units are only tested and qualified with Diagraph an ITW Company approved parts and accessories. Use of other parts or accessories may introduce potential risks that Diagraph an ITW Company can assume no liability for.

WARNINGS

- **WARNING - Moving parts of this machine can present hazards. Components that cannot be guarded because of loss of functionality are marked with a warning symbol.**
- **Be aware of the actuator extension distance, and avoid accidental triggering of the photosensor.**
- **When servicing the unit's electronic assemblies, always remove the power cord from the unit to prevent accidental shock.**
- **When running for extended periods of time, use caution when accessing the drive module circuitry. The motor drive power transistors, motor case, and motor heatsink can become hot under constant use.**
- **Wear personal protective equipment, as instructed by your supervisor, when operating or working near this device.**

COMPLIANCE

- **CAUTION: Not for use in a computer room as defined in the Standard for the Protection of Electronic Computer/ Data Processing Equipment, ANSI/NFPA 75.**

- **ATTENTION: Ne peut être utilisé dans une salle d'ordinateurs telle que définie dans la norme. ANSI/NFPA 75 Standard for the Protection of Electronic Computer/ Data Processing Equipment**
- **This unit has been tested and found to comply with the limits for a Class A device, pursuant to part 15 of the FCC Rules.**
- **This unit has been tested to comply with CE Standards.**

1.3 Warranty Information

The E-Secondary Wipedown system, including all components unless otherwise specified, carry a limited warranty. For all warranty terms and conditions, contact Diagraph, an ITW Company, for a complete copy of the Limited Warranty Statement, or download from our website www.diagraph.com

1.4 Specifications

General Specifications

| Category | Parameter |
|--------------------------------|--|
| Dimensions | 7.3 in. (18.5 cm) L x 24.4 in. (62 cm) H x 25.2 in. (64 cm) D |
| Weight | 18 lbs (8.16 kg) |
| Certifications | CE, CSA, FCC approved, Listed (UL 60950) |
| Label Width | 0.5 in. (12.7 mm) Min. to 4 in. (101.6 mm) Max. <i>Larger widths available upon request</i> |
| Stroke Distance | 1 in. (25.4 mm) Min. to 10 in. (254 mm) Max. |
| Throughput PPM Linespeed | *** Side to Trailing edge applications only *** 140 PPM Maximum (4 inch edge wipe) 200 FPM Maximum |
| Temperature | 41°F - 104°F (5 °C - 40 °C) |
| Humidity | 10 to 85% RH, Non-Condensing |

Electrical Specifications

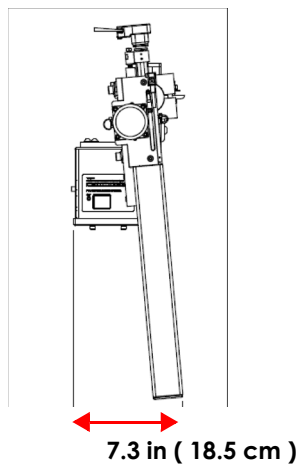
| Category | Nominal | Minimum | Maximum |
|------------------------------|---|-----------------|------------------|
| AC Voltage Supply | 100 - 240 VAC, 0.5A 50/60 Hz | 90 VAC 47 Hz | 264 VAC 63 Hz |
| Product Detector | Low: 0 to 3 VDC High: 3 to 5 VDC Supplies 24VDC | 0 VDC | 24 VDC |
| Product Detector Pulse Width | 10 mS | 1 mS | Infinite |

Performance Specifications

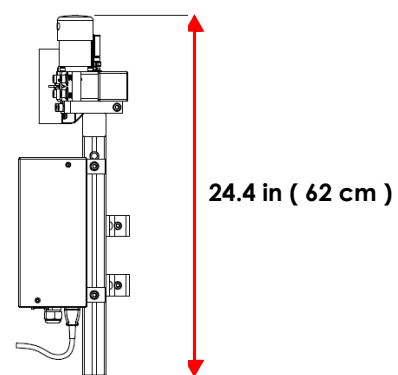
| Application | Label Size (Total) | Stroke Distance (Home position to 1/2 the label length) | PPM Maximum |
|-------------------------|------------------------------|---|--------------------|
| Rear Corner Wrap | 13 inch | 8 inches, "A5" Actuator Profile | 100 PPM |
| Rear Corner Wrap | 13 inch | 8 inches, "A1" Actuator Profile | 50 PPM |
| Rear Corner Wrap | 8 inch | 5 inches, "A5" Actuator Profile | 140 PPM |
| Rear Corner Wrap | 8 inch | 5 inches, "A1" Actuator Profile | 80 PPM |

1.5 System Dimensions

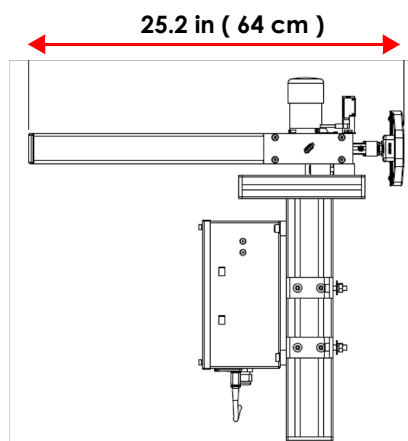
Overhead



Rear



Side



2.0 System Modules

Overview

Product Detector



- Diffused light sensor
- 900 mm range
- Light or Dark Operate
- NPN Signal

4600-900

Brush Mount

- 5 inch width
- Mounts to pivoting knuckle
- Retains brush (6146-611)

6170-191

Wipedown Actuator

- 10 inch variable stroke length
- Extruded 1"x1" Aluminum

6000-620-SWIPE

MCM



- Motor Control Module
- Handles actuator and delay controls
- Has internal power supply for high-speed movements

6000-550

Actuator Motor



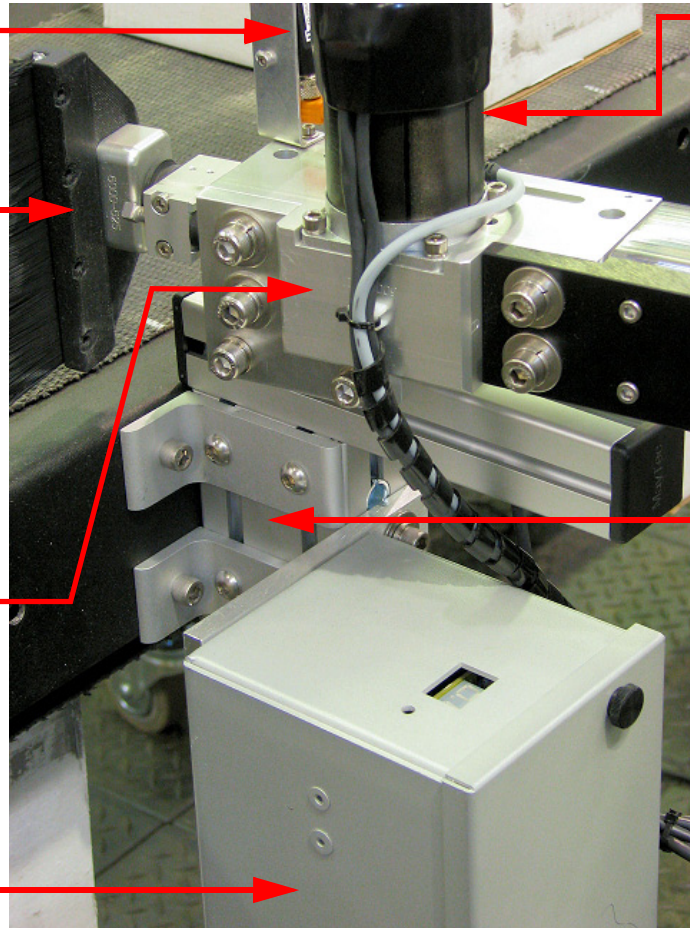
- Brushless DC Servo Motor
- Eliminates adjustments and wear items
- Delivers high-speed moments accurately

4600-503

Mounting Brackets

- Adjusts for height, in and out position, and rotation
- Provides MCM mounting
- Aluminum construction

6170-179

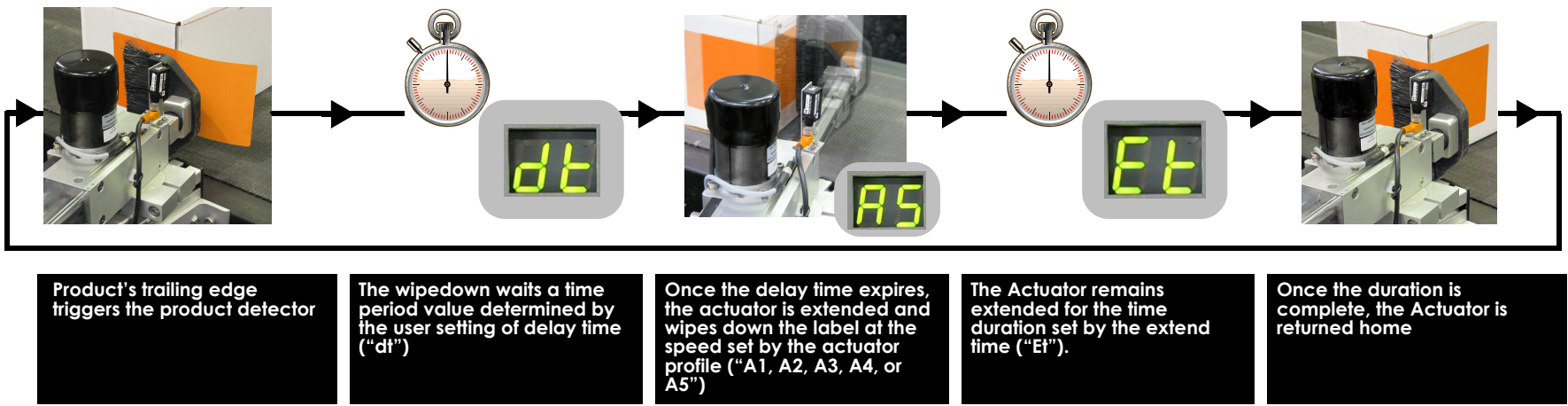


3.0 Theory of Operation



The E-Secondary Wipedown performs a very basic timing routine, based on a start trigger from the product detector. To wrap the label from the side to the rear, or trailing panel, the photosensor should be set to light operate. This will trigger the wipedown on the trailing edge of the product, and begin the delay timer ("dt"). Once the delay timer expires, the wipedown will extend the actuator with a brush end effector to the product at the speed determined by the actuator speed ("A"). The actuator will continue to extend until the extend time ("et") has expired. At this point, the actuator will return to the home position.

Theory of Operation Overview.



4.0 Setup

STEP 1

Determine Wipedown Orientation

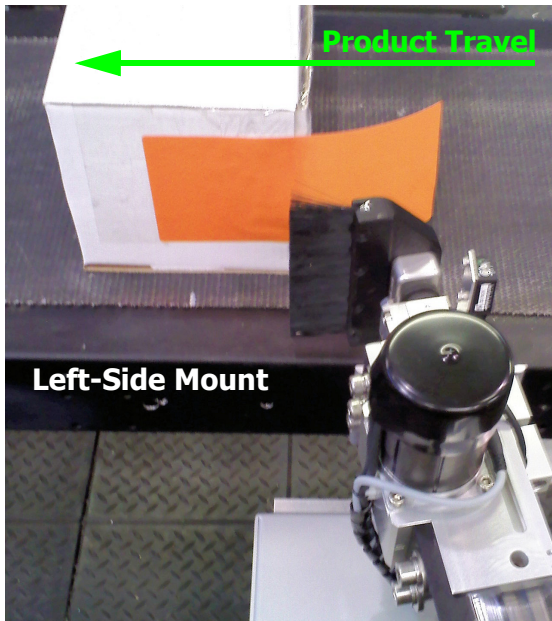
Tools Required:

- 4 mm. Allen Wrench (required for right-side mounting only)

Left Side

Facing in the direction of product travel, the secondary wipedown is located on the left-hand side of the conveyor.

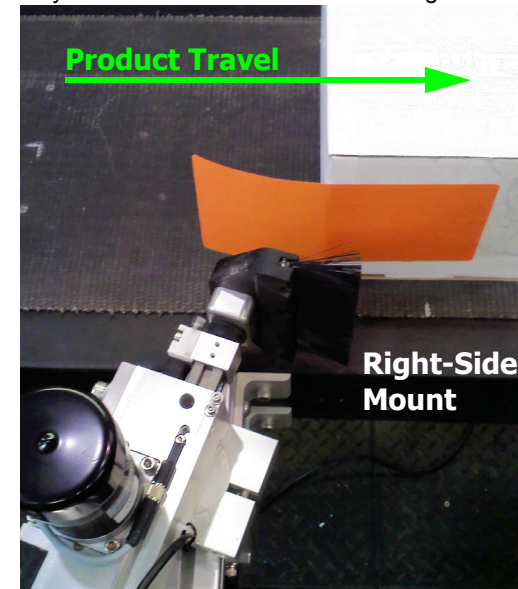
This is the factory standard construction, and no changes are required.



Right Side

Facing in the direction of product travel, the secondary wipedown is located on the right-hand side of the conveyor.

This requires the brush mount to be rotated 180 degrees. Remove the two (2) 4 mm. screws from the brush mount and rotate the brush 180 degrees. Insert the screws and tighten. The product detector may need to be relocated for this configuration.



Top

Although the secondary wipedown can be used in a top-down orientation, it will require custom brackets to handle the wide variety of product height and conveyor width combinations. Please consult the information provided with the custom brackets for details on how to mount the secondary wipedown in a top-down orientation.

STEP 2**Alignment of the E-Secondary Wipe****Tools Required:**

- 5 mm. Allen Wrench
- 6 mm. Allen Wrench

Lineal (X) Position Adjustment

There are two X-position adjustments that can be performed independently. The first adjustment determines position of the bracket arm and the second sets the position for the actuator puck position.

- Loosen the two (2) 5 mm. screws "**Sx**" on the upright bracket. They are located opposite of each other. (outside screw is pictured, inside screw is not pictured)
- Slide the cross bracket in or out to desired reach on conveyor
- Tighten both screws when complete
- Loosen the one (1) 6mm. screw "**Sz**" on the ear connecting the actuator to the bracket
- Remove the actuator assembly to access and loosen the two (2) 6 mm. puck screws "**Sxx**"
- Move the puck to the desired position and re-tighten the puck screws. Place the actuator back on the puck mount and tighten the ear screw "**Sz**" loosely for now

Height (Y) Position Adjustment

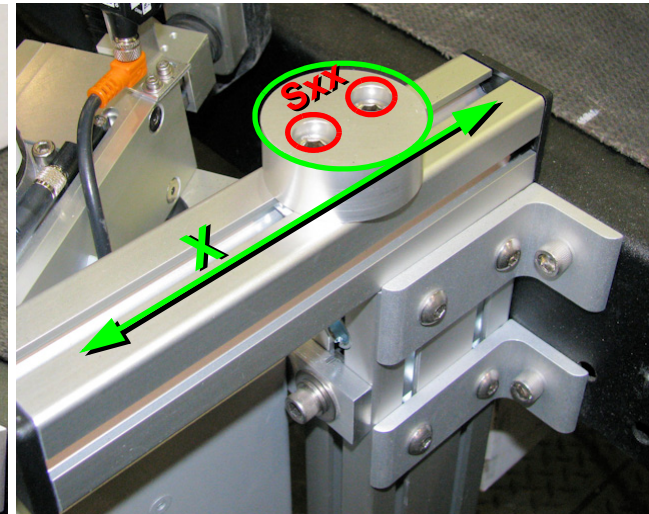
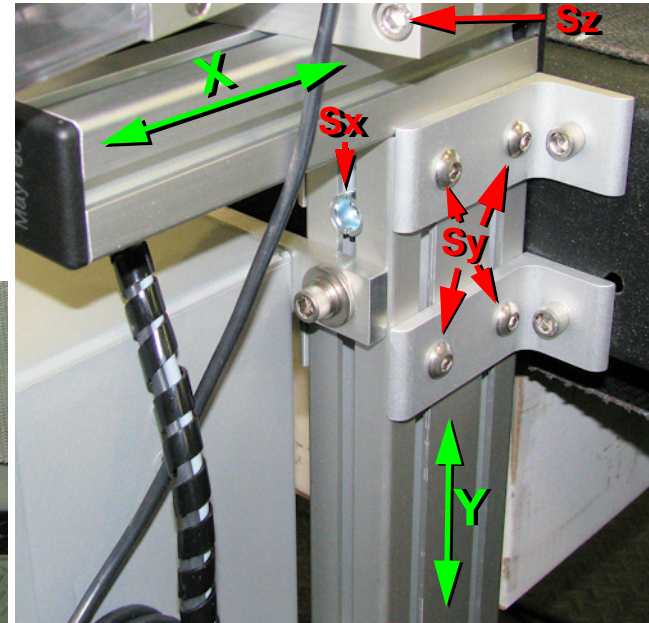
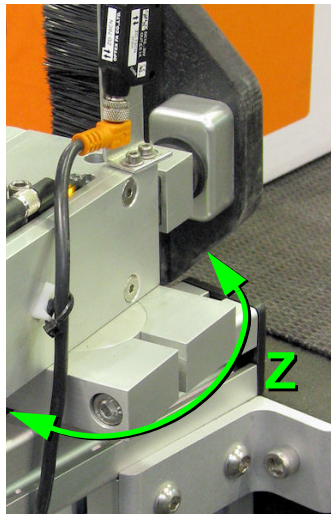
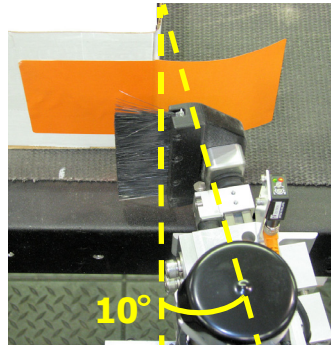
- Loosen the eight (8) 5mm. screws "**Sy**" on the upright bracket, being careful to support the weight of the wipedown when adjusting the height
- Position the height of the actuator to be level on the product where the label will be applied and then wrapped
- Tighten the eight (8) "**Sy**" upright screws

Rotational (Z) Position Adjustment

- Loosen the one (1) 6 mm. screw "**Sz**" on the ear
- Rotate the actuator body so that the brush is aimed toward the trailing panel at approximately 10 degrees
- If the product detector is mounted to the actuator body, be sure to re-adjust the triggering position to match the delay timing
- Tighten the "**Sz**" screw once complete

NOTE:

- *Allow for room on both sides of the actuator body in the event that the product contacts the actuator when extended. The puck and ear are designed to allow a slip pivot motion in the event of a collision to avoid breaking the wipedown system*



STEP 3**Configure the E-Secondary Wipe Module****Overview**

The E-Secondary Wipedown Module is comprised of these subsystems:

- Linear belt-driven actuator rod with motor housing, bearings, and end travel stop
- Brushless DC Servo motor (this motor is common to all Platinum (E) Series Systems)
- Motor Controller Electronics Assembly

The control settings for the E-Secondary Wipedown are located on the Main Controller Module (MCM). All functions are controlled through a digital setting, which is stored in non-volatile memory during power off.

Actuator Speed Profile Setting [Ax]

There are five actuator speed settings to match the application requirement. See following chart for recommended setting

| Ax Profile | Application | |
|------------|---------------------------|-----------------------|
| | Products Per Minute (PPM) | Feet Per Minute (FPM) |
| A1 | 1 - 40 PPM | 15 - 50 FPM |
| A2 | 20 - 60 PPM | 50 - 100 FPM |
| A3 | 20 - 60 PPM | 100 - 150 FPM |
| A4 | 60 - 80 PPM | 150 - 200 FPM |
| A5 | 80+ PPM | 150 - 200 FPM |

Delay Time Setting [dt]

The time delay begins when the trailing edge of the product is detected. When the timer expires, the actuator is extended. The delay time is set in 10 mS increments, so the displayed number is times ten. By pressing and holding the set button, the time can be advanced more rapidly. Values between 00 and 99 (0 mS and 990 mS) are permitted.

Extend Time Setting [Et]

The extend time begins when the delay time ends, and the actuator begins to extend out to wipe down the label. There is no other sensing or detection used when extending other than the extend timer. At the completion of this time, the actuator will be returned to the home position. The extend time is set in 10 mS increments, so the displayed number is times ten. By pressing and holding the set button, the time can be advanced more rapidly. Values between 00 and 99 (0 mS and 990 mS) are permitted.

**To change profiles in the E-Secondary Wipe Module**

Press SET button for 1 second for Actuator Speed

Once the "A" profile is shown, press the SET button momentarily to advance through the profile settings. When the desired value appears, stop pressing the set button to save the value.

Press SET button for 2 seconds for Delay Time

Once the "dt" characters are displayed, press the SET button momentarily to advance through the delay time increments. These delays are in milliseconds, times 10. I.e.- if the displayed value is 5, the delay is 50 mS. Press and hold the Set button to scroll through the numbers quicker. When the desired value appears, stop pressing the set button to save the value.

Press SET button for 3 seconds for Extend Time

Once the "Et" characters are displayed, press the SET button momentarily to advance through the extend time increments. These delays are in milliseconds, times 10. I.e.- if the displayed value is 5, the delay is 50 mS. Press and hold the Set button to scroll through the numbers quicker. When the desired value appears, stop pressing the set button to save the value.

Press SET button momentarily to view the settings

STEP 4

Product Detector

Product Detector for the Application

The standard product detector offered is the Diffuse Light 4600-900 sensor. There are two optional sensor types, one is a break-beam sensor, and the other is a laser with background suppression. The proper product detector can make the difference in label placement and operation.

| Product Detector Selector | | | |
|--|--------------------------|-----------------------|------------------|
| Application Detail | Diffuse Light (4600-900) | Break-Beam (4600-901) | Laser (4600-902) |
| Corrugated brown case, no pre-print | ✓ | ✓ | ✓ |
| Corrugated brown case, pre-print | x | ✓ | ✓ |
| Tray packs with product gaps in pack | x | ✓ | ✓ |
| Pallets | ✓ | ✓ | x |
| Shrink wrapped products | x | ✓ | ✓ |
| Primary product | ✓ | ✓ | ✓ |
| Primary product, high speed, high accuracy | x | x | ✓ |

Product Detector Mounting Location

The standard product detector is included with mounting brackets from the factory. It should be set to **Light Operate** mode (S1 turned toward L in picture below). The sensor and bracket can be optionally mounted to the actuator body, as shown to the right.

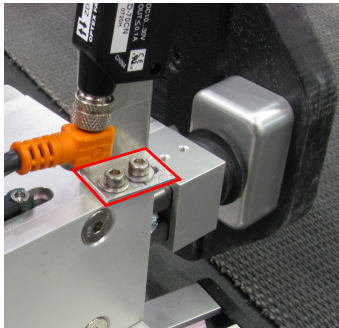
Product Detector Adjustments

All three of the sensors have the same controls for adjustment. Setting S2 (as shown to the right) controls the sensitivity of the detector. With a sample target product in front of the sensor, adjust this setting. The output LED, L2 in the image, will illuminate with the sensitivity adjustment is correct. The power LED, L1 in the image, will show the signal return strength when the output LED is on. Make sure the sensitivity is set so the green LED is on solid so that slightly less reflective products will still cause a trigger. Once the product is removed from the field of view of the sensor, the green LED will return to indicating power, and will be strongly illuminated.

For break-beam applications using the 4600-902 sensor, the Light/Dark setting S1 should be changed. This inverts the output signal mode to the applicator. Since a break-beam application will normally have an active output for no product detected, the change of S1 will allow the triggering to react to the presence of the product.

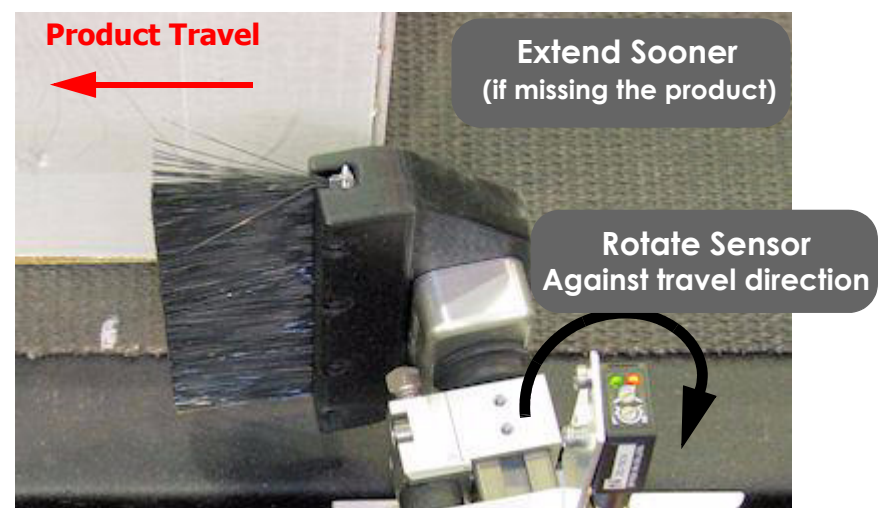
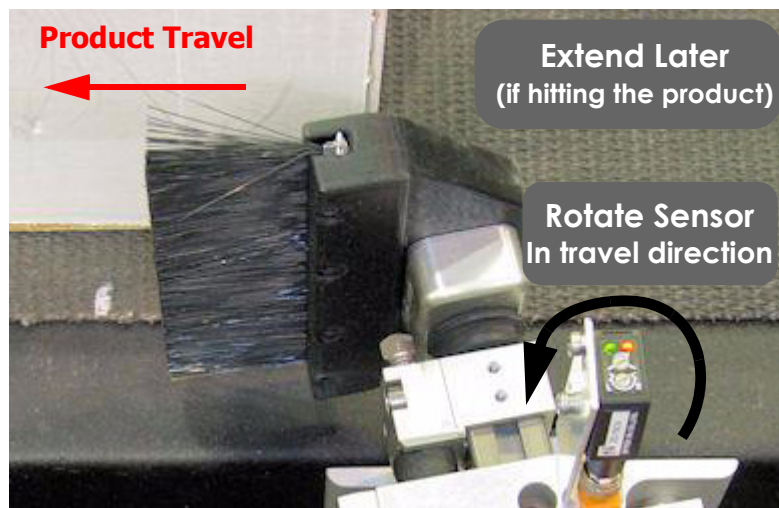
Sensor Notes

The break-beam sensor has a polarized retro-reflective lens. This means that it requires a suitable reflector that can provide the correct light phase shift to satisfy the sensor. This prevents reflective products (shrink-wrap, glass, etc.) from falsely triggering the sensor. The laser sensor incorporates a triangulation method to receive the reflected beam. Using this method, the sensor detects true distance rather than product reflectivity. The setting made on S1 will determine distance to the target product. If products will range in distance, the furthest distance product should be used for adjustment. Ensure that objects beyond the target product range are not detected to avoid false triggers.



STEP 5**Runtime Adjustments**

- A) Set the value for the actuator speed, based on the application rate table found in the “Actuator Speed Profile Setting [Ax]” on page 11.
- B) Next, determine the delay time required to synchronize with the back edge of the product. Do to this, set the Extend Time to “02” (which is 20 mS) to keep the actuator from contacting the product (see “Extend Time Setting [Et]” on page 11.).
- C) Adjust the Product Detector to provide a solid, robust trigger off of the product’s surface. Now adjust the Delay Time (see “Delay Time Setting [dt]” on page 11.) so that the actuator is extending soon enough to reach the rear corner at the top of the brush (closest to the brush holder). In this manner, the brush will remain in contact with the label as the product is moving away from the wipedown. **Hint:** *you may have to cover the Product Detector to access the setting menus. If the application rate is fast and the product detector is constantly triggering, access to value adjustments is very limited.*
- D) With the product stationary, determine the extend time required to wipe the rear panel of the product. Use the “Et” adjustment, “Extend Time Setting [Et]” on page 11., to stroke the actuator out far enough to wrap the label, but not more than what is needed. Trigger the product detector to fire the actuator and view the extend distance.
- E) Now that the Actuator Speed, Delay Time, and Extend Time are set, test the system timing with the products moving. To make small adjustments to delay position, try slightly rotating the Product Detector. Rotate it towards the incoming product to extend the actuator sooner, if the wipedown is firing late. Rotate it away from the incoming product to extend the actuator later, if the brush is hitting into the side of the product.
- F) Once the system has been adjusted to wipedown the labels, observe the operation for a while to ensure the product sensing is consistent. Watch for possibilities of inconsistent product spacing that could hit an extended wipedown actuator. Verify that there is adequate space around the wipedown actuator, in the event that a product collides with the extended arm, and the arm rotates as it is contacted.



5.0 Troubleshooting

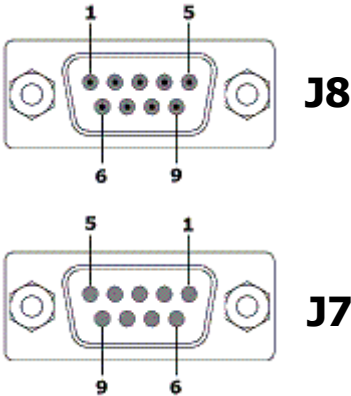


| Observed | Reason | How to Correct |
|--|--|---|
| Actuator will not extend when product detector is triggered | <ul style="list-style-type: none">Actuator Home Sensor not positioned correctly | <ul style="list-style-type: none">Loosen the home sensor mounting screw with a flat blade screwdriverWith the actuator in the home position, slide the home sensor up and down the slot until the sensor LED illuminatesTighten the home sensor mounting screw |
| <ul style="list-style-type: none">Actuator is extending multiple times across the same productActuator is extending prior to the rear edge of the product | <ul style="list-style-type: none">Product Detector type is incorrect for the applicationProduct Detector is not adjusted properly | <ul style="list-style-type: none">Ensure that the correct sensor is being used for the application, based on the table on page 12Adjust the Product Detector's sensitivity to achieve a good steady green light when the product is in front of the sensor, and the yellow sense LED is on |
| Label wrinkles as it is wrapped onto product | <ul style="list-style-type: none">Actuator to product angle is too perpendicular | <ul style="list-style-type: none">Angle actuator at the ear to puck pivot to increase the angle of contact on the product's rear panel |

6.0 Electrical Interfacing



| J8 - Auxiliary- Not Used (DB9M) | |
|---------------------------------|-----------------|
| PIN | Pin Description |
| Pin 1, 2 | N/C |
| Pin 3 | Ground |
| Pin 4 | Aux Input 1 |
| Pin 5 | N/C |
| Pin 6 | + 24 VDC Supply |
| Pin 7,9 | N/C |
| Pin 8 | Aux Input 2 |



| J7 - Product Detector (DB9F) | |
|------------------------------|----------------------------|
| PIN | Pin Description |
| Pin 1, 2 | N/C |
| Pin 3 | Ground |
| Pin 4,5 | N/C |
| Pin 6 | + 24 VDC Supply |
| Pin 7,9 | N/C |
| Pin 8 | Product Detect Input (NPN) |

This system is designed to operate as a stand-alone system, complete with its own product trigger. It does not electrically interface with the labeling system.

7.0 Maintenance Schedule



| Area | Daily | Monthly | Two Years | Description |
|--|-------|---------|-----------|---|
| Clean Product Detector Sensor(s) | | ✓ | | Use a soft lint-free cloth to wipe all dust and contaminants free. Be careful not to damage the plastic lens with alcohol-based solvents. |
| Clean Actuator Rod | | ✓ | | Clean the actuator rod with a cleaning cloth. Use a light amount of isopropyl alcohol on cloth to remove build-ups. DO NOT USE OIL OR GREASE ON ACTUATOR ROD! |
| Inspect Actuator Drive Belt | | ✓ | | Check for frayed edges and exposed reinforcement fibers. |
| Replace Actuator Drive Belt and Bearing Pads | | | ✓ | Follow replacement procedures contained with new components. |
| Replace Brush | | | ✓ | Replace with p/n: 6146-611 for 5 inch brush or custom brush size equivalent. |

8.0 Diagnostics

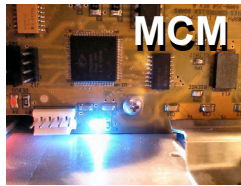


Overview

The Diagraph E-Secondary Wipedown employs a built-in diagnostic testing system to allow most problems to be identified and corrected without need for more sophisticated test equipment. The sections below list the capabilities and how to access them.

Heartbeat Light

As simple as this indicator is, it can help identify a problem with the circuit board. All boards that contain firmware have a flashing blue LED light that indicates a normal, working module. The MCM contains this heartbeat indicator.



Electric Actuator Test

The E-Secondary Wipedown actuator can be tested in a power-up diagnostic mode. This is done by pressing and holding the Set button on the MCM while turning power on. The display will initially show "Pb", indicating a stuck push button. Release the Set button, and the display will show "dG" for diagnostics. The Set button can now be pressed to extend the actuator. The power must be cycled to exit the diagnostic mode. There are diagnostic LED's dedicated to showing the actuator operation internal to the MCM. These are noted in the image below:

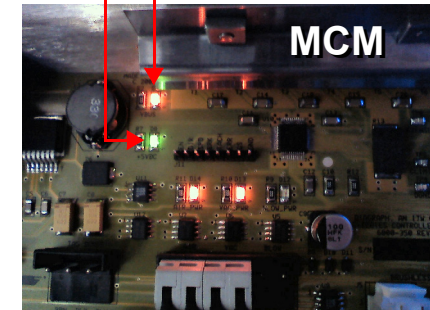
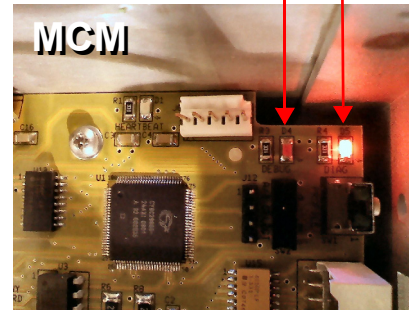


Indicates actuator is Home


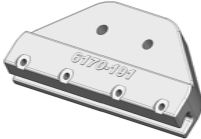
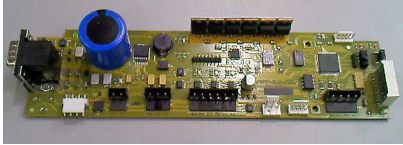

Flashes every 0.25 inches of actuator travel



































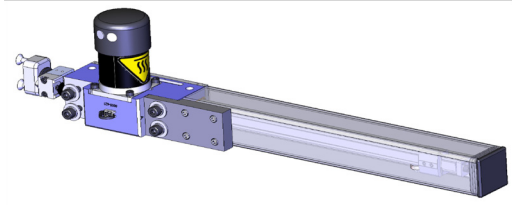
24 VDC PWR

5 VDC PWR



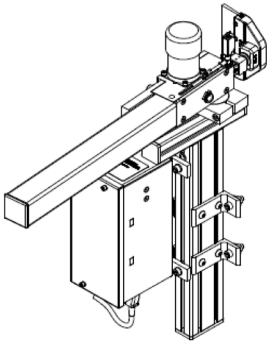
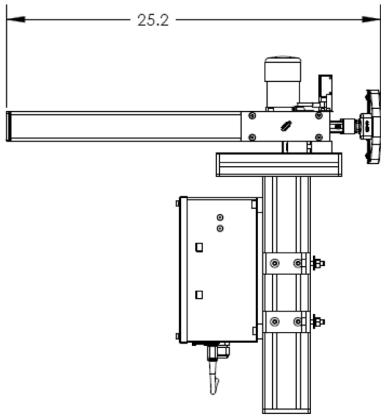
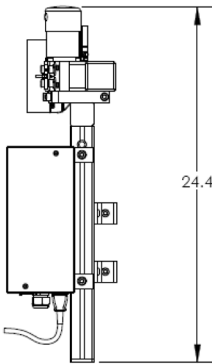
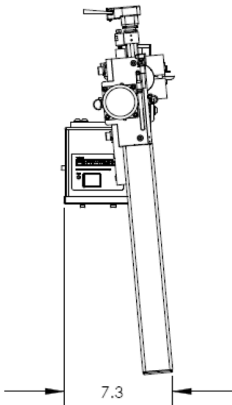
9.0 Spare Parts List - System

| Part Number | Recm'd. Spare Part | Description |
|-----------------------------|--------------------------|---|
| DOCUMENTATION | | |
| 6170-190N | | E-Secondary Wipedown User Manual |
| E-SECONDARY WIPEDOWN | | |
| 4600-511 | | AC Power Cord |
| 6146-611 | √ | <u>Brush, Nylon, 5"W x 1.92"L</u>  |
| 6170-191 | | <u>Brush Mount</u>  |
| 6000-350 | √ | <u>MCM Motor Controller PCB</u>  |
| 6000-550 | | <u>MCM Assembly</u> Includes: MCM Motor Controller PCB, Power Supply, Enclosure  |

| Part Number | Recm'd. Spare Part | Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|-------------------------------------|--|---|-------------|------|-------|----------|------------------------------|---|---|----------|----------------------------------|---|---|----------|--------------|---|---|----------|-------------|----|---|----------|---------------------|---|---|----------|-------|---|---|----------|-------------|---|---|----------|-------------------------------------|---|--|----------|-------------------|---|---|----------|---------------|---|---|----------|---------------------------------|---|---|
| 4600-503 | | <u>Actuator BLDC Motor</u>  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6000-950 | √ | E-TAMP MAINTENANCE KIT: Wear Items Set Includes: Actuator Belts, Bearing Pads, Idler Rollers, Belt Clamp, Bumper, Springs, Motor Dust Cap <table><tr><th>PART NO.</th><th>DESCRIPTION</th><th>QTY.</th><th>IMAGE</th></tr><tr><td>5315-105</td><td>PIN, DOWEL, 250 X 1.75 L, SS</td><td>2</td><td></td></tr><tr><td>5331-002</td><td>SPRING, WAVE, .375 OD X .15L, SS</td><td>2</td><td></td></tr><tr><td>6000-423</td><td>IDLER ROLLER</td><td>2</td><td></td></tr><tr><td>6000-424</td><td>BEARING PAD</td><td>16</td><td></td></tr><tr><td>6000-427</td><td>TOP PLATE, ACTUATOR</td><td>1</td><td></td></tr><tr><td>6000-428</td><td>CLAMP</td><td>1</td><td></td></tr><tr><td>6000-429</td><td>CLAMP PLATE</td><td>1</td><td></td></tr><tr><td>6000-633</td><td>TIMING BELT, XL, 240 ORVS X .375" W</td><td>1</td><td></td></tr><tr><td>6000-634</td><td>CAP, VINYL, ROUND</td><td>1</td><td></td></tr><tr><td>6000-638</td><td>ROLLER/BUMPER</td><td>1</td><td></td></tr><tr><td>6150-601</td><td>BUMPER, 5/8" MALE, POLYURETHANE</td><td>2</td><td></td></tr></table> | PART NO. | DESCRIPTION | QTY. | IMAGE | 5315-105 | PIN, DOWEL, 250 X 1.75 L, SS | 2 |  | 5331-002 | SPRING, WAVE, .375 OD X .15L, SS | 2 |  | 6000-423 | IDLER ROLLER | 2 |  | 6000-424 | BEARING PAD | 16 |  | 6000-427 | TOP PLATE, ACTUATOR | 1 |  | 6000-428 | CLAMP | 1 |  | 6000-429 | CLAMP PLATE | 1 |  | 6000-633 | TIMING BELT, XL, 240 ORVS X .375" W | 1 |  | 6000-634 | CAP, VINYL, ROUND | 1 |  | 6000-638 | ROLLER/BUMPER | 1 |  | 6150-601 | BUMPER, 5/8" MALE, POLYURETHANE | 2 |  |
| PART NO. | DESCRIPTION | QTY. | IMAGE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5315-105 | PIN, DOWEL, 250 X 1.75 L, SS | 2 |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5331-002 | SPRING, WAVE, .375 OD X .15L, SS | 2 |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6000-423 | IDLER ROLLER | 2 |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6000-424 | BEARING PAD | 16 |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6000-427 | TOP PLATE, ACTUATOR | 1 |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6000-428 | CLAMP | 1 |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6000-429 | CLAMP PLATE | 1 |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6000-633 | TIMING BELT, XL, 240 ORVS X .375" W | 1 |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6000-634 | CAP, VINYL, ROUND | 1 |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6000-638 | ROLLER/BUMPER | 1 |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6150-601 | BUMPER, 5/8" MALE, POLYURETHANE | 2 |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6000-620-SWIPE | | <u>E-Tamp Actuator Module, 10 inch stroke</u>  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4600-900 | | <u>Product Detector - Diffused Light</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |


10.0 System Drawings

NOTES:
ITEMS ARE INCLUDED WITH ACTUATOR ASSEMBLY.

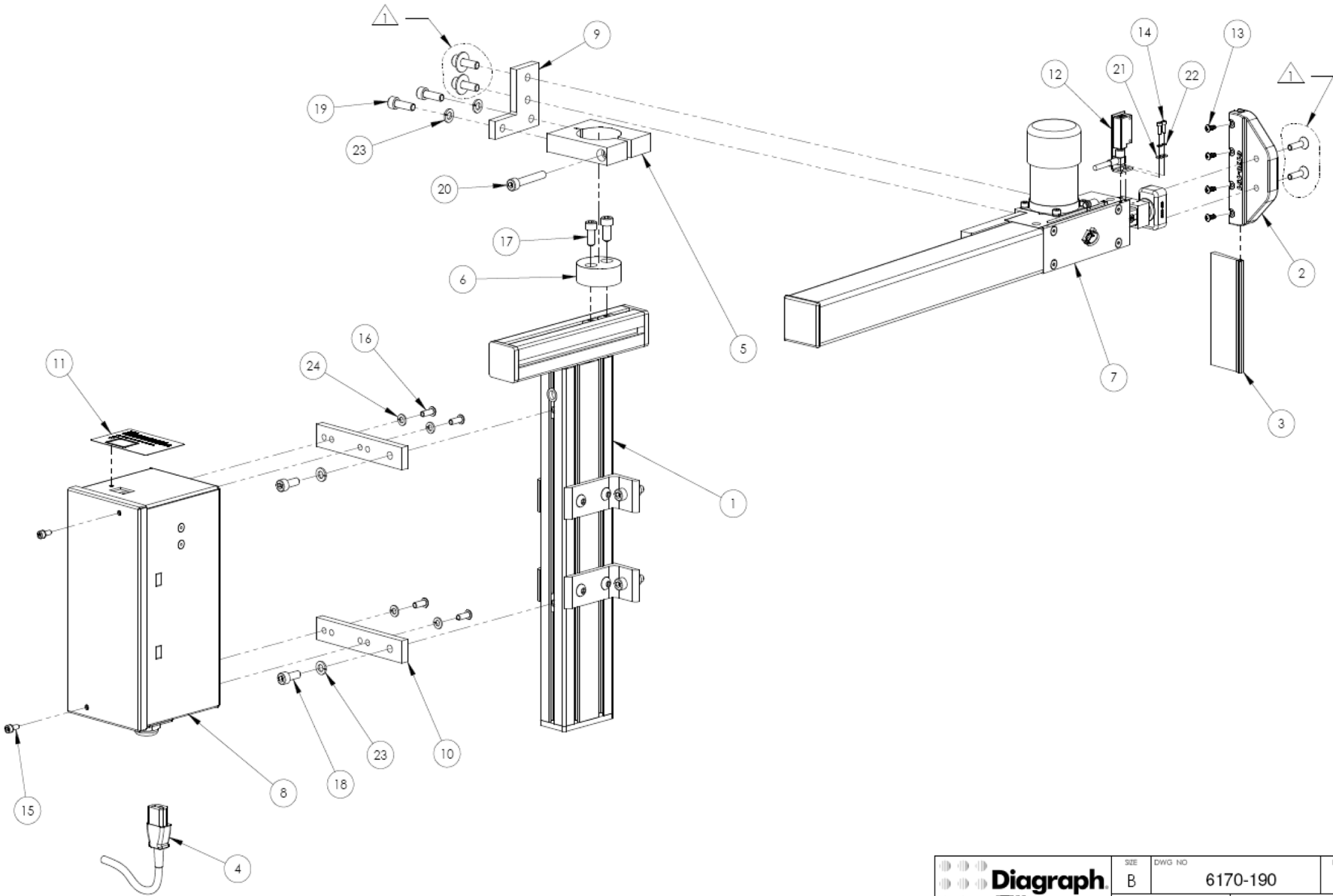


| | | | |
|------|----------------|-------------------------------------|------|
| 24 | 5310-313 | WASHER, SPRING, 1/4", SS | 4 |
| 23 | 5310-308 | WASHER, SPLIT-LOCK, 5/16", SS | 4 |
| 22 | 5310-315 | WASHER, SPLIT LOCK, #4, SS | 2 |
| 21 | 5310-037 | WASHER, FLAT, #4, SS | 2 |
| 20 | 5081-735 | SCR, M8 X 1.25 X 50, SHCS, SS | 1 |
| 19 | 5081-730 | SCR, M8 X 1.25 X 25, SHCS, SS | 2 |
| 18 | 5081-734 | SCR, M8 X 1.25 X 20, SHCS, SS | 2 |
| 17 | 5081-733 | SCR, M8 X 1.25 X 18, SHCS, SS | 2 |
| 16 | 5241-717 | SCR, M6 X 1 X 1.6, BUT HD CAP, SS | 4 |
| 15 | 5081-727 | SCR, M5 X 0.8 X 12, SHCS, SS | 2 |
| 14 | 5081-003 | SCR, M3 X 0.5 X 10MM, SHCS, SS | 2 |
| 13 | 5260-600 | SCR, #10 X 3/8L HI-LO, PAN PH | 4 |
| 12 | 4600-900 | PRODUCT DETECTOR | 1 |
| 11 | 6000-647 | OVERLAY, MCM, E-SECONDARY WIPE DOWN | 1 |
| 10 | 6000-644 | MOUNTING BAR, MCM | 2 |
| 9 | 6000-645 | MOUNT PLATE, E-SECONDARY WIPE DOWN | 1 |
| 8 | 6000-550 | MOTOR CONTROL MODULE | 1 |
| 7 | 6000-620-SWIPE | ELECTRIC TAMP ACTUATOR, 10" | 1 |
| 6 | 6145-626 | EAR, YOKE ATTACHMENT PUCK | 1 |
| 5 | 6145-602 | EAR, YOKE | 1 |
| 4 | 4600-511 | CABLE, LIGHT-DUTY POWER | 1 |
| 3 | 6146-611 | BRUSH, NYLON, 5"W x 1.92"L | 1 |
| 2 | 6170-191 | BRUSH MOUNT | 1 |
| 1 | 6170-179 | BRACKET KIT | 1 |
| ITEM | PART NO. | DESCRIPTION | QTY. |

| REVISIONS | | | | | |
|-----------|----------|-----------------------|----------|----------|-------|
| REV | ECN | DESCRIPTION | DATE | APPROVED | |
| A | LPD00434 | RELEASE TO PRODUCTION | 5/1/2009 | RWB | SS AK |

| | | | | | | | | | |
|---|-------|--|------------|---|--------------|--|-----------|--------------------|----------|
| CONFIDENTIAL | | UNLESS OTHERWISE SPECIFIED: | | FILE NAME 6170-190 | |  Diagraph. An ITW Company | | | |
| THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION OF DIAGRAPH - AN ITW COMPANY AND IS NOT TO BE COPIED, USED OR DISCLOSED TO OTHERS WITHOUT THE EXPRESS WRITTEN CONSENT OF DIAGRAPH - AN ITW COMPANY. | | ALL DIMENSIONS ARE SHOWN IN INCHES. ALL DIMENSIONS APPLY AFTER REMOVE BURRS | | OWN: R BIXEN 4/22/09 APP: R BIXEN 5/1/09 APP: S SCHOEN 5/1/09 | | TITLE: E-SECONDARY WIPE DOWN | | | |
| | | TOLERANCES: LINEAR 2 PLACE (.XX) ±.015 3 PLACE (.XXX) ±.005 HOLE DIAMETERS ±.005 ANGULAR 1° MACHINE SURFACE | | ASSY PROC INSP PROC CAGE CODE | | | | | |
| NEXT ASSEMBLY | MODEL | MATL SPEC | SCALE: 1:8 | | SHEET 1 OF 2 | | SIZE B | DWG NO 6170-190 | REV A |

10.1 System Drawings - Exploded View

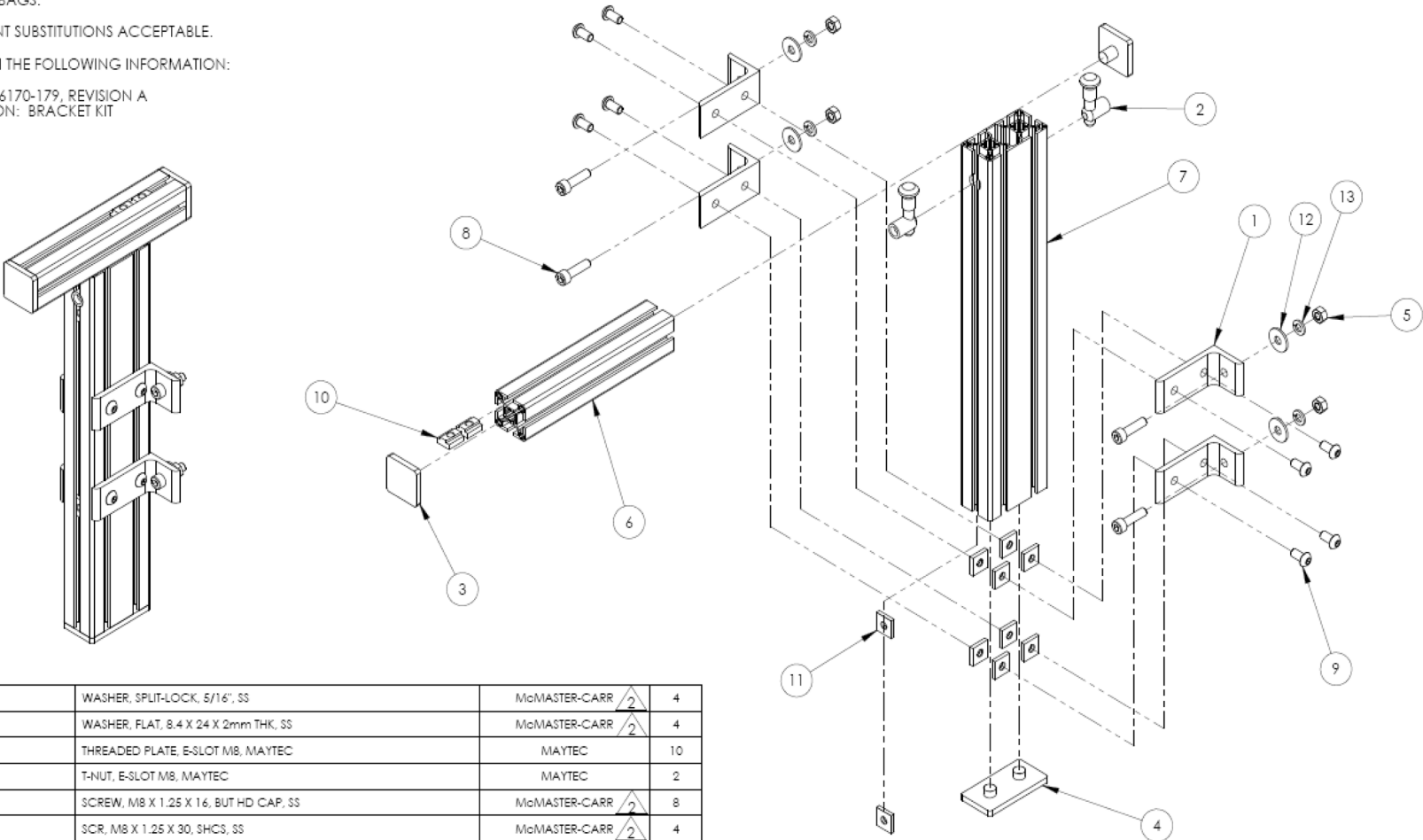


| | | | |
|---|------|--------------|------|
|  An ITW Company | SIZE | DWG. NO. | REV. |
| | B | 6170-190 | A |
| SCALE: 1:4 | | SHEET 2 OF 2 | |


10.2 System Drawings - Bracket Kit

- NOTES:
- 1. PACKAGE EACH KIT IN A SHIPPABLE CONTAINER. PACKAGE SMALL COMPONENTS IN SEALED BAGS.
 - 2. EQUIVALENT SUBSTITUTIONS ACCEPTABLE.
 - 3. LABEL WITH THE FOLLOWING INFORMATION:
PART NO: 6170-179, REVISION A
DESCRIPTION: BRACKET KIT

| REVISIONS | | | | |
|-----------|----------|-----------------------|-----------|----------|
| REV | ECN | DESCRIPTION | DATE | APPROVED |
| A | LPD00434 | RELEASE TO PRODUCTION | 4/30/2009 | RWB AK |



| | | | | | |
|------|-----------------------------|---|---------------|------|----|
| 13 | 92146A030 | WASHER, SPLIT-LOCK, 5/16", SS | McMASTER-CARR | 2 | 4 |
| 12 | 91116A160 | WASHER, FLAT, 8.4 X 24 X 2mm THK, SS | McMASTER-CARR | 2 | 4 |
| 11 | 1.31.EM8 | THREADED PLATE, E-SLOT M8, MAYTEC | MAYTEC | | 10 |
| 10 | 1.32.EM8 | T-NUT, E-SLOT M8, MAYTEC | MAYTEC | | 2 |
| 9 | 92095A260 | SCREW, M8 X 1.25 X 16, BUT HD CAP, SS | McMASTER-CARR | 2 | 8 |
| 8 | 91292A149 | SCR, M8 X 1.25 X 30, SHCS, SS | McMASTER-CARR | 2 | 4 |
| 7 | 1.11.040080.64LP-FB1F00/406 | PROFILE 40x80, 6E, LP, 406mm LONG, BUSHING BORES IN SIDES (1&3) | MAYTEC | | 1 |
| 6 | 1.11.040040.43LP-A00A00/203 | PROFILE 40x40, 4E, LP, 203mm LONG | MAYTEC | | 1 |
| 5 | 91828A410 | NUT, M8 X 1.25, SS | McMASTER-CARR | 2 | 4 |
| 4 | 1.42.20408.2 | COVER CAP, 40 X 80, BLACK, MAYTEC | MAYTEC | | 1 |
| 3 | 1.42.20404.2 | COVER CAP, 40 X 40, BLACK, MAYTEC | MAYTEC | | 2 |
| 2 | 1.21.4E0 | CONNECTOR, 12mm CORE HOLE, PG 40mm, MAYTEC | MAYTEC | | 2 |
| 1 | 40-4376 | BRACKET, INSIDE CORNER, 3-HOLE, 40 X 80, 80/20 | 80/20 | | 4 |
| ITEM | PART NO. | DESCRIPTION | MFR. / VENDOR | QTY. | |

| | | | | | | | | | |
|--|-------|--|------------|--|-----------|--|--|--------------------------|--|
| CONFIDENTIAL THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION OF DIAGRAPH - AN ITW COMPANY AND IS NOT TO BE COPIED, USED OR DISCLOSED TO OTHERS WITHOUT THE EXPRESS WRITTEN CONSENT OF DIAGRAPH - AN ITW COMPANY. | | UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE SHOWN IN MILLIMETERS ALL DIMENSIONS APPLY AFTER FINISH REMOVE BURRS TOLERANCES: LINEAR 2 PLACE (XX) ±.38 3 PLACE (XXX) ±.13 HOLE DIAMETERS ±.013 ANGULAR MACHINE SURFACE ±1° | | FILE NAME 6170-179 DWN R BKEN 4/15/09 APP R BKEN 4/30/09 APP ASSY PROC RFP PROC CAGE CODE | |  Diagraph. An <i>ITW</i> Company | | TITLE BRACKET KIT | |
| NEXT ASSEMBLY | MODEL | MATL SPEC | SCALE: 1:4 | SHEET 1 OF 1 | SIZE B | DWG NO 6170-179 | | REV A | |