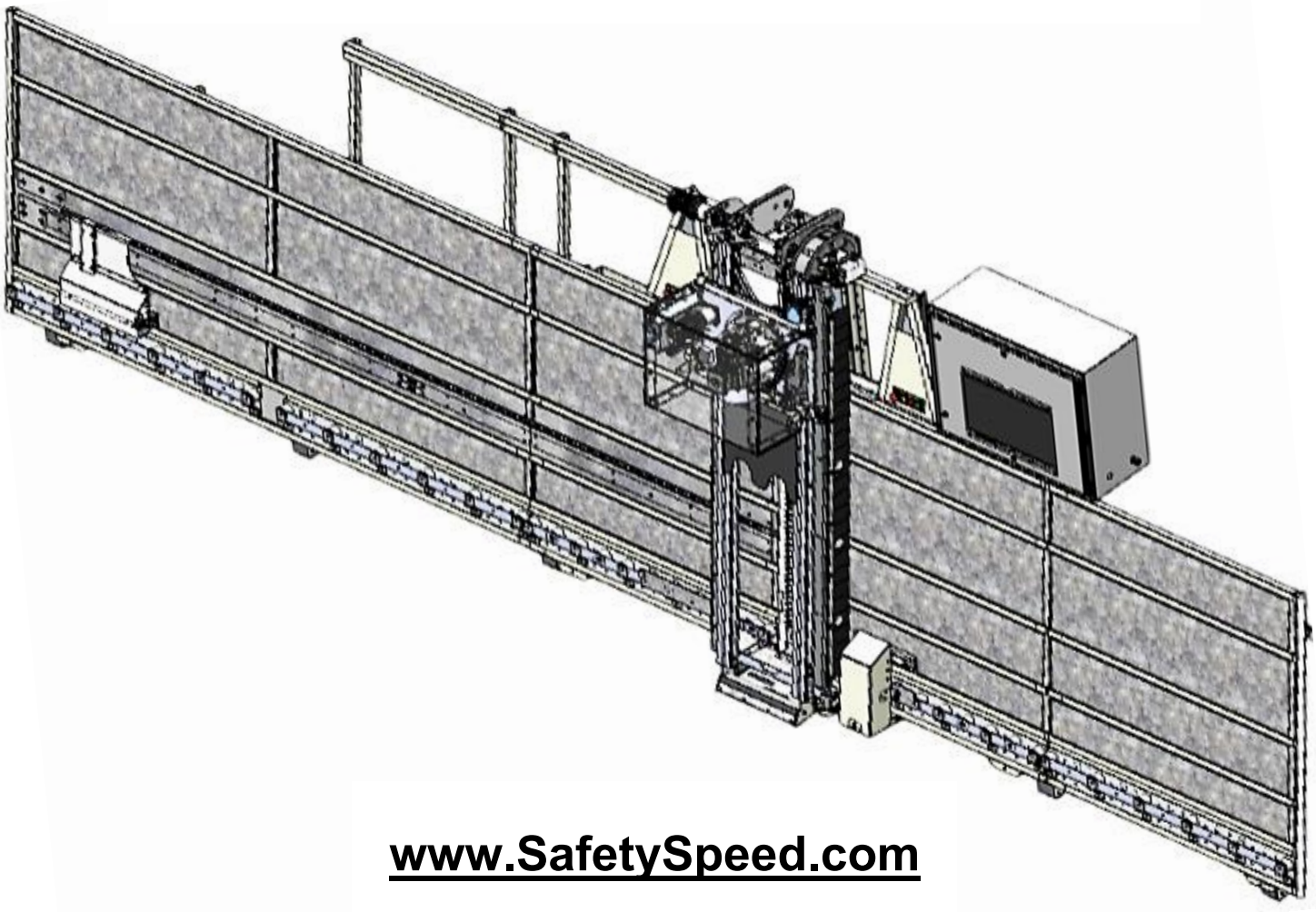
SPEEDWORX

SWS410

AUTOMATED VERTICAL PANEL SAW

Operator's Manual



www.SafetySpeed.com

Proudly Engineered and Made in the USA

A MESSAGE FROM SAFETY SPEED MANUFACTURING:

Thank you for choosing the **SpeedWorx Automated Vertical Panel Saw** from Safety Speed Manufacturing.

We take pride in designing and manufacturing our machines in the USA and in providing equipment built for demanding production environments. We appreciate the opportunity to support your operation and hope your SpeedWorx provides years of dependable service.

-Safety Speed Manufacturing
Ham Lake, Minnesota, USA

Limited Warranty

Safety Speed Manufacturing (SSM) warrants the parts and workmanship of this machine, excluding the electric motor(s), for **one (1) year from the date of factory installation or fifteen (15) months from the date of shipment, whichever occurs first**.
SSM will, at its discretion, repair or replace any component determined to be defective. Warranty repair or replacement is limited to the supply of replacement parts from the factory. SSM does not assume responsibility for on-site repairs.
Parts returned to the factory under warranty must be shipped freight prepaid and must include a **Return Authorization (R.A.) number**. Contact SSM at **763-755-1600** to obtain an R.A. number.
Electric motors are warranted directly by the motor manufacturer. Contact the motor manufacturer's authorized service or repair center for motor warranty claims.
SSM assumes no responsibility for damage, injury, or accidents resulting from misuse, misapplication, modification, or failure to follow applicable safety instructions. SSM is not responsible for consequential damages, loss of production, or other indirect losses.
This warranty does not apply to machines that are not used or maintained in the normal course of business, are used for applications for which they are not intended or have been modified without authorization.

This manual applies to the **SpeedWorx SWS410 Automated Vertical Panel Saw**.

Record the machine serial number below for reference when ordering parts, supplies, or accessories or when contacting Safety Speed Manufacturing for service or support.

Model: SWS410

Serial Number: _____

Serial Number Location

- #1 - On the back of the control panel enclosure
- #2 - Inside the control panel enclosure

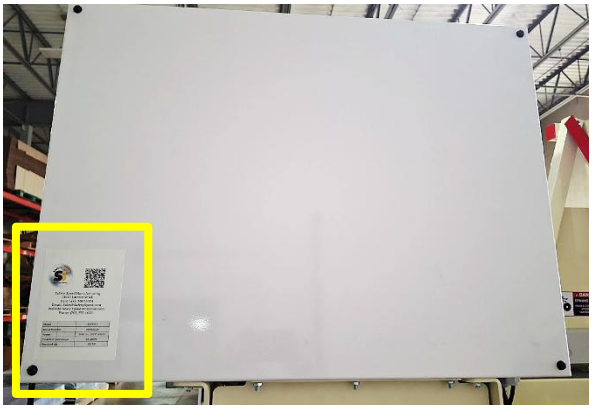




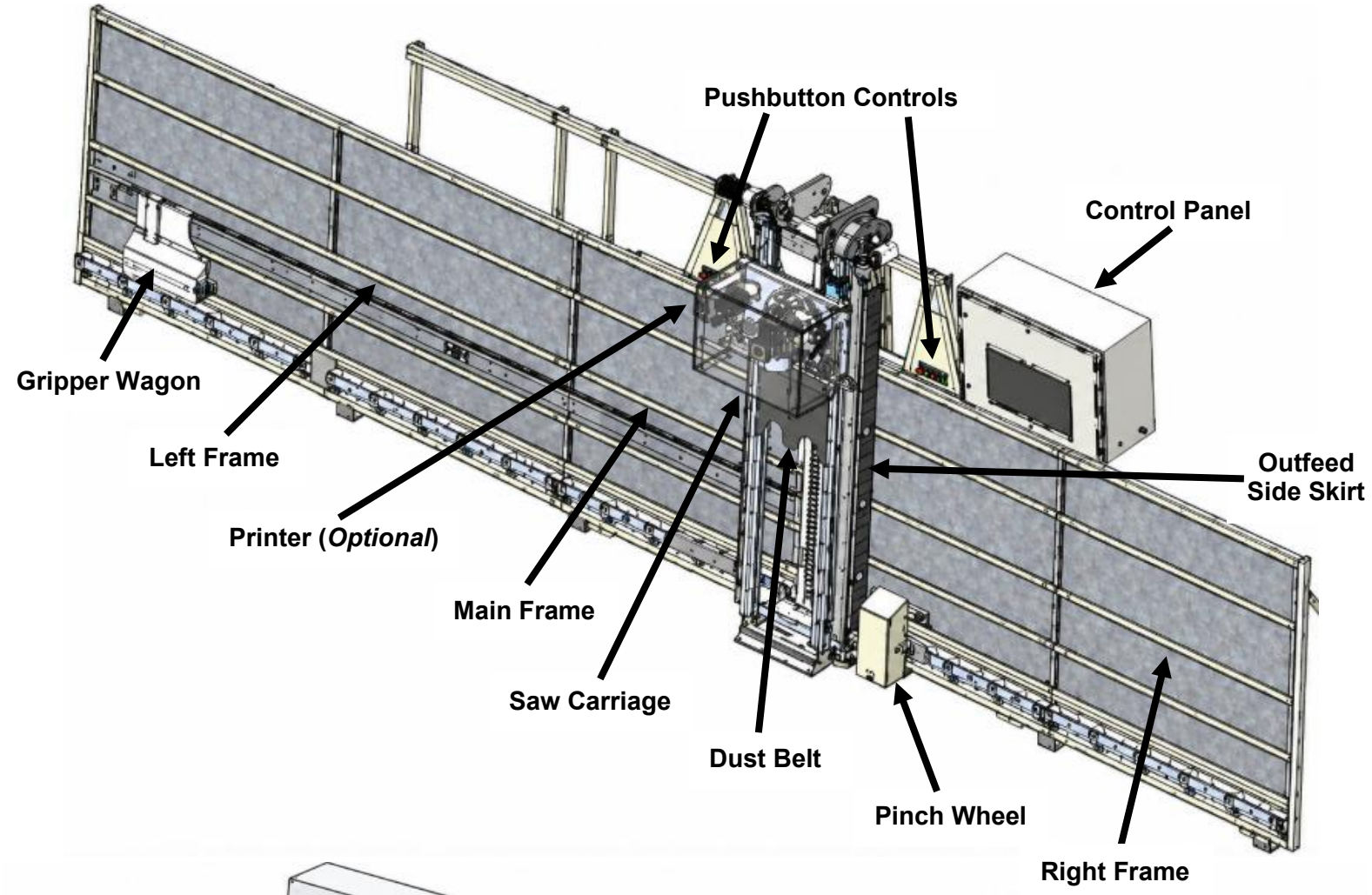
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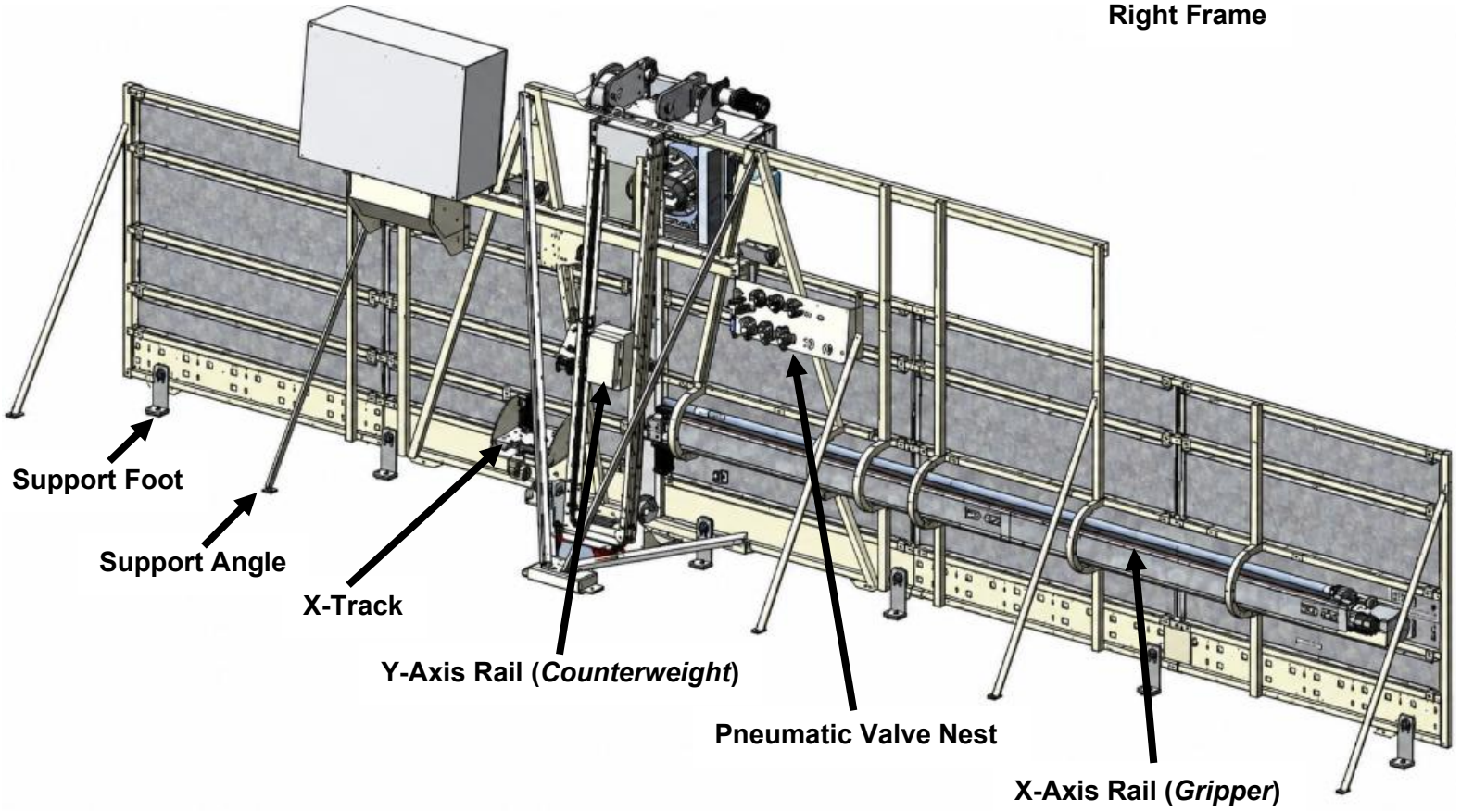
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SpeedWorx Components





Safety and Warning Information

READ BEFORE OPERATING THE MACHINE

Read and understand these safety instructions, the complete SWS410 operating instructions, and all safety labels on the machine before operating, cleaning, adjusting, or servicing the SWS410. Keep this manual in a safe and accessible location for future reference.

The SWS410 contains a rotating saw blade, automated mechanical and servo-driven movement, pneumatic components, and other moving and stored-energy components that can cause serious injury or death.

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH

For the latest SWS410 information, including machine specifications, operating instructions, troubleshooting, supplies, and a digital copy of this manual, visit the SpeedWorx website using the URL or QR code below.

Safetyspeed.com/products/automated-panel-saw/speedworx-automated-panel-saw/

Safety Signal Words and Definitions

DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

Safety & Warning Labels

Keep all safety labels clean, legible, and visible.

Observe all safety labels and warnings affixed to the SWS410.

REPLACE MISSING OR DAMAGED SAFETY LABELS BEFORE OPERATING THE MACHINE.







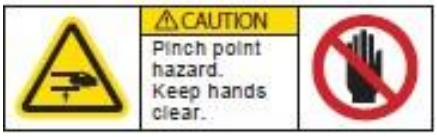
















Critical Safety Rules

DANGER — AUTOMATIC MACHINE MOVEMENT AND ROTATING SAW BLADE

- KEEP HANDS, FEET, AND ALL PARTS OF THE BODY, AS WELL AS CLOTHING, HAIR, TOOLS, AND OTHER OBJECTS, CLEAR OF THE CUTTING ZONE AND ALL MOVING COMPONENTS.
- NEVER ENTER A MACHINE DANGER ZONE WHILE HAZARDOUS MACHINE MOVEMENT OR BLADE ROTATION IS POSSIBLE.
- NEVER REACH INTO THE MACHINE TO RETRIEVE MATERIAL OR CLEAR AN OBSTRUCTION UNLESS THE MACHINE HAS BEEN STOPPED AND THE APPLICABLE HAZARDS HAVE BEEN CONTROLLED.
- NEVER BYPASS, DEFEAT, REMOVE, OR DISABLE A SAFETY DEVICE.
- KEEP ALL GUARDS, SAFETY DEVICES, AND SAFETY COVERS INSTALLED AND FUNCTIONAL.
- KNOW THE LOCATION OF BOTH EMERGENCY-STOP BUTTONS BEFORE OPERATING.
- TRAINED AND AUTHORIZED OPERATORS ONLY.
- KEEP THE WORK AREA CLEAR OF UNNECESSARY PERSONNEL AND OBJECTS.
- REMOVE TOOLS, EQUIPMENT, AND OTHER LOOSE OBJECTS FROM THE MACHINE BEFORE OPERATION.
- WEAR REQUIRED EYE AND HEARING PROTECTION.
- DO NOT OPERATE THE SWS410 IN WET OR HAZARDOUS ENVIRONMENTS OR WHERE FLAMMABLE VAPORS OR EXPLOSIVE ATMOSPHERES ARE PRESENT.
- NEVER STAND, CLIMB, OR SIT ON THE SWS410 MACHINE OR ITS COMPONENTS.
- NEVER OPERATE THE MACHINE WHILE IMPAIRED, EXCESSIVELY FATIGUED, OR DISTRACTED.
- STOP THE MACHINE IMMEDIATELY IF ABNORMAL NOISE, VIBRATION, MOVEMENT, OR CUTTING BEHAVIOR OCCURS.
- NEVER LEAVE THE MACHINE OPERATING UNATTENDED.

Intended Use

The SWS410 is an automated panel saw with X, Y, Z, and C axis travel designed for high-volume processing of large sheet and panel materials in manufacturing, construction, and other industrial applications. Typical applications include processing panels for walls and floors, building components, crating, packaging, and other panel-processing operations. SpeedWorx software supports EHX and WBX job files, as well as other file formats including CSV and TSV files, for loading and processing job files.

WARNING — MATERIAL COMPATIBILITY

The SWS410 is designed and approved for panel materials up to **2 inches thick** with a minimum material mass of **0.6 lb./ft²** (approximately 20 lb. for a standard 4′ × 8′ sheet).

Approved Materials

- Oriented Strand Board (OSB)
- Plywood, including CDX and other structural grades
- ZIP System® sheathing
- Glass-mat gypsum sheathing, such as DensGlass®
- Gypsum board/drywall

- Structural insulated or composite sheathing with a structural facing or substrate

Standalone XPS, EPS, polyisocyanurate, and other light-density foam boards are not suitable for processing on their own. Foam materials must be part of a composite assembly with a structural substrate.

Do not process materials outside the manufacturer's specified range. Unapproved or unsuitable materials may cause blade binding, unexpected material movement, excessive dust, fire, hazardous fumes, equipment damage, or serious injury.

If material suitability is uncertain, do not process the material. Contact Safety Speed Manufacturing customer service at 763-755-1600 or sales@safetyspeed.com before proceeding.

Personal Protective Equipment

WARNING — FLYING DEBRIS AND LOUD NOISE HAZARDS

Cutting operations may generate flying debris and high noise levels.

Safety glasses and hearing protection must be worn in the machine operating area.

Do not wear loose clothing or jewelry. Secure long hair and remove other items that could become caught in moving machinery.

Additional PPE may be required based on the material being processed, the specific task, workplace hazard assessment, or applicable regulations.

Electrical Safety

WARNING — ELECTRICAL HAZARD

Electrical connection and service must be performed by a qualified, licensed electrician in accordance with all applicable electrical codes and regulations.

Verify that power is OFF and disconnected before making any electrical connections or servicing the machine.

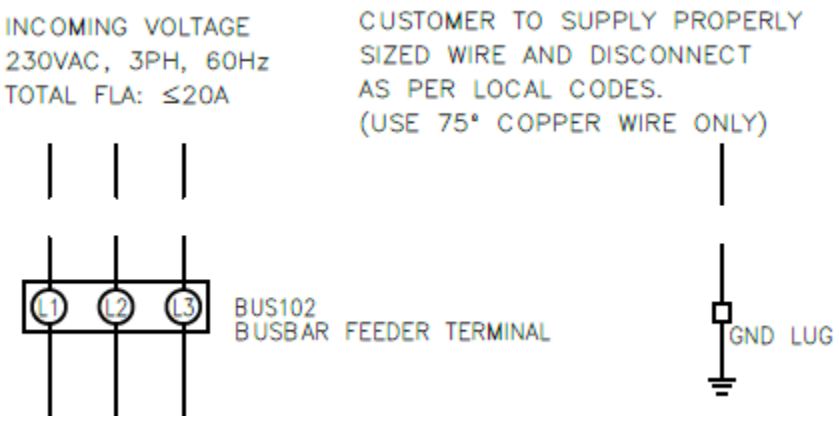
The SWS410 is supplied without a power cord or plug. The customer is responsible for providing the electrical supply and connecting the machine to the control panel.

The SWS410 requires a dedicated **230 VAC, 60 Hz, three-phase** circuit rated at a minimum of **20 A**.

For installations with a high-leg electrical service, connect the high-leg conductor to L3 only.

Connect the equipment grounding conductor to the designated grounding lug in the control panel. Refer to the electrical diagram for feeder terminal and grounding connections.

Do not operate the machine until the electrical installation and grounding have been completed and verified by a qualified electrician.



SWS410 Wiring Diagram — 208–230 VAC, 3-Phase, 20 A

Emergency Stop

The SWS410 is equipped with two emergency-stop buttons, one on each side of the saw motor carriage.

Press an emergency-stop button immediately in the event of an emergency or unexpected machine condition.

An emergency-stop function stops machine operation and removes power from the controlled machine functions. Resetting an emergency-stop button does not restart the machine. A new Start command is required to resume operation.

Cutting Zone Safety

DANGER — KEEP OUT OF CUTTING ZONE

Keep hands, arms, body parts, clothing, tools, and other objects clear of the cutting zone while the blade is rotating or the machine is capable of movement.

The saw blade is exposed within the cutting zone during cutting. When the machine is not cutting, the blade is enclosed or retracted along the Z-axis. The cutting zone remains hazardous while the blade is rotating or the machine is capable of movement, even when the blade is retracted.

Cutting operations may generate debris ejected at high speeds. Do not operate machine without side skirting in place.

Before entering the cutting zone, press SAW STOP and wait for the blade to come to a complete stop. Do not enter the cutting zone until all machine movement has ceased and all applicable hazards have been controlled.

Saw Motor Enclosure

DANGER — DO NOT OPERATE WITHOUT MOTOR ENCLOSURE

Never operate the SWS410 with the enclosure removed, damaged, or improperly installed.

The saw motor enclosure is a safety device. The enclosure is monitored by two proximity sensors. If the enclosure is removed, bumped, or momentarily displaced from its monitored position, the proximity sensors initiate an emergency-stop (E-stop) condition. When an E-stop condition is initiated, saw and servo movement is disabled.

Do not bypass, defeat, disable, or otherwise interfere with the saw motor enclosure or its safety-sensor function.

Automated Carriage Movement

WARNING — AUTOMATIC MOVEMENT / COLLISION & PINCH HAZARD

Keep hands, feet, clothing, and other objects clear of the carriage, counterweight, chain, and their travel paths.

The SWS410 uses a servo-driven carriage mechanically connected to a counterweight system. The carriage and counterweight can move automatically during operation and can start, stop, or change direction without manual intervention.

Do not attempt to stop, push, pull, or manually reposition the carriage or counterweight while the machine is operating.

The counterweight system contains stored mechanical energy. Never disconnect, adjust, or service the counterweight or chain without properly securing the system. Service must be performed by qualified personnel using the applicable lockout and hazardous-energy-control procedure.

Automated Panel Movement

WARNING — AUTOMATIC MOVEMENT / COLLISION HAZARD

Keep hands, feet, and body parts clear of the area between moving panels and the machine frame, rollers, or other fixed objects.

The SWS410 automatically detects and moves a loaded panel during operation.

Do not attempt to hold, guide, stop, or reposition a panel while the SWS410 is moving it.

Remain clear of identified panel travel and pinch-point areas during automatic operation.

Loading and Handling Panels

WARNING — CRUSH & PINCH HAZARD

Keep hands and feet clear of pinch points and do not position yourself where a falling or shifting panel could cause injury.

Large panels can shift, tip, or fall during loading. Once the panel is loaded, keep clear of the panel and its path of movement.

Do not attempt to hold, guide, stop, or reposition a panel while the SWS410 is moving it.

Pneumatic Safety

WARNING — CRUSH & PINCH HAZARD

Keep hands and body parts clear of pneumatic cylinders and their travel paths.
Pneumatic cylinders and associated components can move automatically and create pinch and crush hazards. The SWS410 uses pneumatic cylinders for automated clamping, saw-head movement, dust-curtain tensioning, printer movement, and other machine functions.

Before servicing, shut down the machine, disconnect the compressed-air supply, and relieve residual pneumatic pressure. Follow applicable OSHA Lockout/Tagout requirements and your facility's hazardous-energy-control procedures.

Do not service or disconnect pneumatic components until all pressure has been relieved.

Dust and Airborne Particles

WARNING — DUST HAZARD

Cutting panel materials generates airborne dust. Exposure to wood and other material dust may cause respiratory irritation and other health hazards. Dust accumulation may also create a fire hazard.

Always operate the SWS410 with the required dust-collection system properly connected and operating. Never operate the machine without adequate dust collection.

Excessive dust accumulation in and around the machine can create slip and fall hazards and may interfere with proper machine operation.

Clean the machine and surrounding work area regularly to prevent excessive dust accumulation. Follow applicable workplace requirements for dust exposure and housekeeping.

Maintenance and Service

DANGER — HAZARDOUS ENERGY

Maintenance and service may expose personnel to electrical, mechanical, pneumatic, cutting, counterweight, and other stored-energy hazards.

Before servicing, adjusting, clearing a jam or obstruction, or performing cleaning that requires access to a machine danger zone, shut down the machine and isolate and lock out all applicable hazardous energy sources in accordance with the applicable hazardous-energy-control procedure.

Maintenance and service involving electrical, mechanical, pneumatic, saw blade, counterweight, or safety-system components must be performed by qualified personnel.

DANGER — ROTATING BLADE HAZARD

Before servicing, removing, or changing the saw blade, shut down the machine and isolate and lock out all applicable hazardous energy sources. Verify that the blade has completely stopped and cannot move before entering the blade area.

Never service, remove, or change the saw blade while it is rotating or while the machine is energized or capable of starting.

Never bypass or defeat a safety device. Before returning the machine to service, ensure all guards, covers, and safety devices are properly installed and functional.

If you are unsure how to safely service or maintain the machine, do not proceed. Contact Safety Speed Manufacturing customer service for guidance at 763-755-1600 or sales@safetyspeed.com.

Installation and Setup

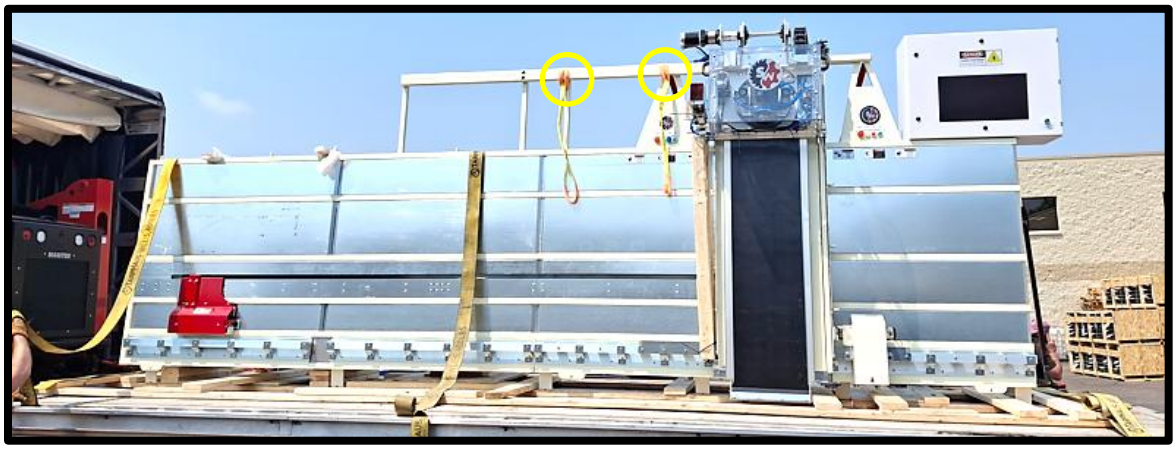
Delivery/Unloading

The SWS410 is shipped on a flatbed truck and must be unloaded using a **forklift with a minimum rated capacity of 5,000 lb.** The approximate shipping weight of the SWS410 is **3,250 lb.**, but the actual shipping weight may vary depending on machine configuration and options.

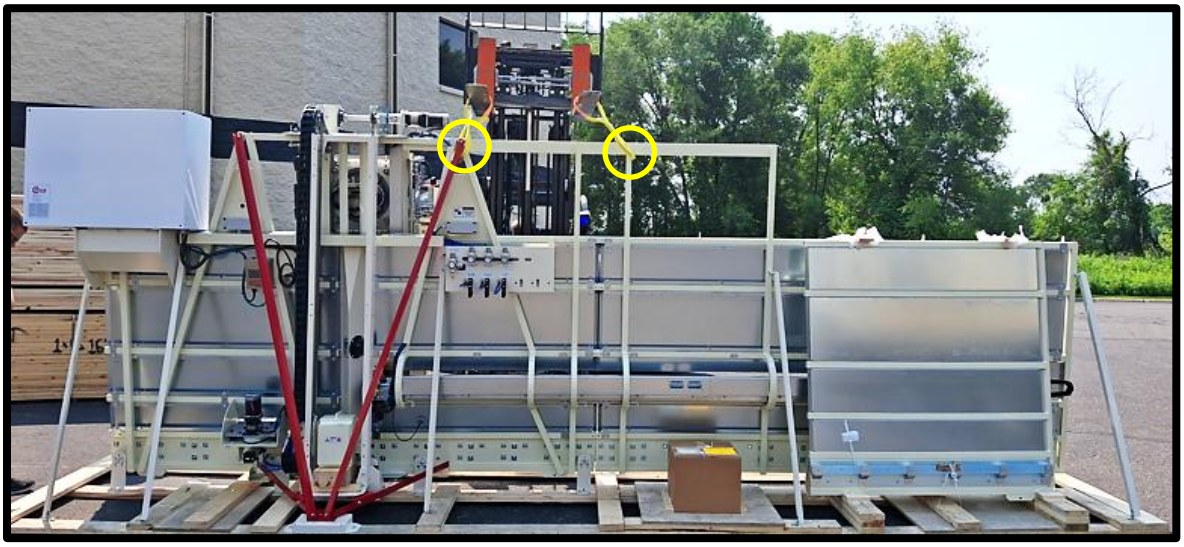
Two lifting straps are provided with the machine. Each strap is rated for **3,200 lb.** The straps are installed at the designated lifting points on the machine frame for shipping and unloading. Before lifting, verify that both lifting straps are properly installed, in good condition, and positioned at the designated lifting points. Insert the forklift forks through the lifting strap loops as shown in the unloading photos below.

Do not lift the SWS410 using any lifting points, straps, or attachment methods other than those specified by Safety Speed Manufacturing.

Keep all personnel clear of the machine and the suspended load during unloading and positioning. Never stand or work beneath the suspended machine.



Lifting Points – *Front View*



Lifting Points – *Rear View*

Inspection and Inventory

⚠WARNING

To reduce the risk of injury or damage to machine components, do not uncrate or assemble the SWS410 or its components without prior authorization from Safety Speed Manufacturing.

Installation, calibration, and operator training are performed by an authorized SpeedWorx technician following delivery and site preparation.

Upon delivery, inspect the shipping pallet, and machine for visible signs of damage before accepting the shipment. Check for dents, cracks, broken or missing components, damaged packaging, or other indications that the shipment may have been damaged during transit.

If shipping damage is found, **document all visible damage and note it on the carrier's delivery receipt before signing for the shipment, or refuse the shipment if the damage is substantial**. Photograph the damage to the machine or components. If any damage, missing items, or discrepancies are found, contact Safety Speed Manufacturing as soon as possible.

In addition to the SWS410 machine, the shipping pallet contains the 5 ft. frame extension and a separate box containing the following items:

Frame Extension and Installation Hardware

- Qty. 1 — 5 ft. Frame Extension
- Qty. 1 — Frame Foot Angle
- Qty. 10 — Self-Tapping Screws
- Qty. 14 — 3/8 in. × 3 in. Concrete Anchors
- Qty. 1 — String

Spare Parts

- Qty. 1 — Extra Saw Blade
- Qty. 1 — Extra Saw Belt
- Qty. 1 — Extra Gripper Proximity Sensor

Tools and Documentation

- Qty. 1 — 5 m USB-A to USB Mini Cable
- Qty. 1 — Electrical Schematics
- Qty. 1 — Operator's Manual

Optional Accessory

- Qty. 1 — Printer and Ink Cartridge

Installation and Operating Requirements

The following pre-delivery and installation requirements must be completed or arranged before delivery and ready for installation.

Installation Site Requirements

- The SWS410 must be installed and operated on a level, stable concrete floor suitable for anchoring the machine. For recommended access and service clearance, maintain approximately **65 in.** (165 cm) between the rear of the machine frame and any wall or obstruction.
- The SWS410 must be operated in a clean, dry, well-lit environment protected from rain, excessive moisture, and other sources of water. Provide adequate lighting for clear visibility of the work area and machine components.
- Do not install or operate the SWS410 in an area containing flammable gases or vapors, combustible dust, or other explosive atmospheres.
- Keep the area around the machine clear of obstructions. Keep unauthorized personnel and bystanders outside the machine's operating area.

Electrical Requirements

- The SWS410 is supplied without a power cord or plug. The customer is responsible for providing the electrical supply and making the connection to the machine control panel.
- A qualified, licensed electrician must be available during installation to make the electrical connection. A local electrical disconnect for the machine is recommended.
- Provide a dedicated **230 VAC, 60 Hz, 3-phase electrical circuit rated at a minimum of 20 A**.

Compressed Air Requirements

- Provide a clean, dry compressed-air supply at the installation location capable of supplying **90 PSI** at the machine's main regulator.
- Have the air hose and required fittings ready for connection to the machine's **1/4-in. FNPT** inlet. Do not connect the air supply before the SpeedWorx technician arrives.
- An in-line air shutoff valve is recommended for convenience and service.

Installation Equipment Requirements

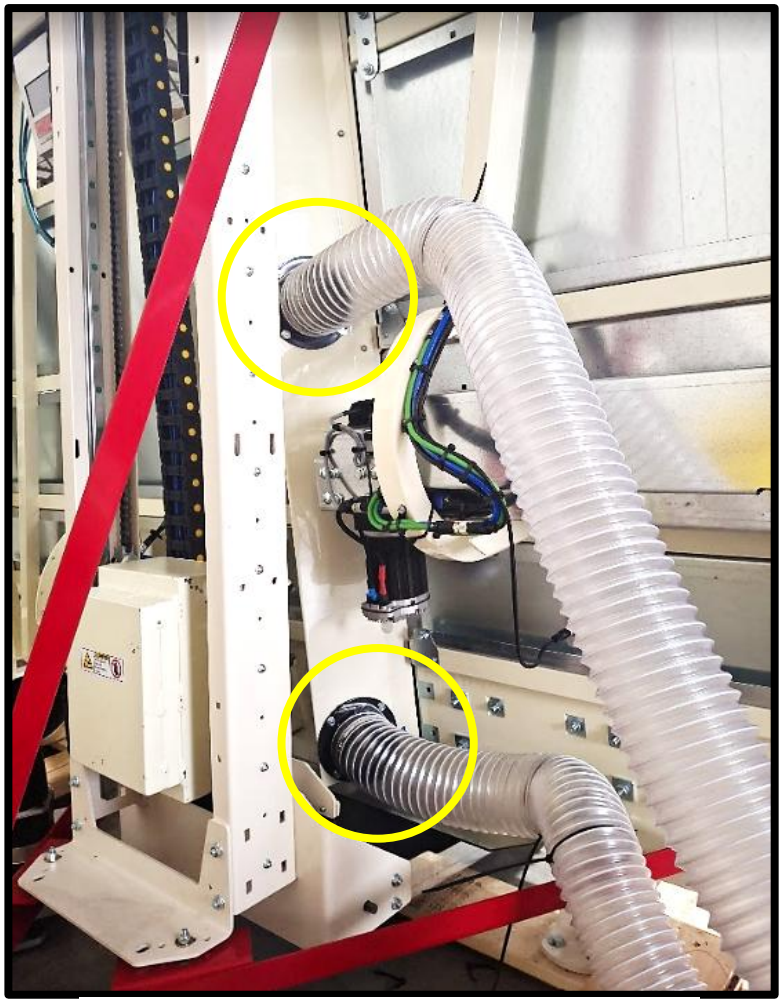
- Forklift for moving the machine.
- Pallet jack for installation and frame alignment.
- Hammer drill with a **3/8-in.** concrete drill bit **no longer than 12 in.** to provide adequate clearance around the machine.
- Personnel capable of drilling the concrete floor and installing the supplied floor anchors.
- Personnel to remove and dispose of the shipping pallet and packaging materials.

Dust Collection Requirements

- Provide a dust collection system that is installed and operational before machine installation.
- The dust collection system must provide a minimum of **600 CFM** total airflow with both machine

dust ports connected.

- Provide two **4-in**. diameter **flexible** hoses, each with a **minimum of 5 ft.** of flexible hose between the machine and the dust collection system. Do not connect rigid duct directly to the machine.
- Provide appropriate hose clamps for the connections.



SpeedWorx Dust Collection Connections

NOTE: Connect both machine dust ports to the dust collection system using 4-in. diameter flexible hose. Provide a minimum of 5 ft. of flexible hose between the machine and the dust collection system. **Secure hoses to prevent contact with moving machine components.**

Machine Operation

⚠WARNING

The following information provides general guidance for safe operation of the SWS410. Before operating the machine, all operators must read and understand the operating and safety instructions in this manual. Operators must be properly trained and familiar with the machine's controls, operating characteristics, and safety requirements before performing production work.

Machine Capabilities

The SpeedWorx Automated Panel Saw SWS410 provides an integrated system for automated material handling, positioning, and cutting of structural sheathing and other large sheet and panel materials. The integrated software accepts cut-list files and optimizes the layout of required parts to maximize material utilization and reduce waste. The system supports cut-out and cut-around operations, with optimized layouts providing advantages for cut-around applications. The machine automatically positions material and performs crosscuts, rip cuts, and programmed angle cuts. The SWS410 is factory-aligned and calibrated during setup to a tolerance of ±1/32".

The SWS410 is designed to handle and cut panel materials within the following range:

- **Material thickness:** 1/4–2 in. (7–50 mm)
- **Minimum material mass:** 0.6 lb/ft². This is approximately 20 lb for a standard 4 × 8 ft. sheet.

Crosscutting Capabilities

The SWS410 performs automated **crosscuts (vertical cuts)** across the width of the workpiece.

The crosscut capacity is:

- **Workpiece height:** 5-1/2–50 in. (140–1,270 mm)
- **Minimum workpiece length:** 21 in. (533 mm)

For proper material support and accurate cutting, the workpiece must be supported on at least two rollers and remain fully engaged by the gripper during the crosscut.

Rip Cutting Capabilities

The SWS410 performs automated **rip cuts (horizontal cuts)** along the length of the workpiece.

The rip-cut capacity is:

- **Workpiece length:** 24–120 in. (610–3,050 mm)
- **Minimum workpiece height:** 5-1/2 in. (140 mm)

The minimum workpiece dimensions provide adequate material support and maintain proper gripper engagement during the cut.

Angle Cutting Capabilities

The SWS410 can perform programmed **angle cuts** in addition to standard crosscuts and rip cuts.

- One angle cut can be programmed per sheet.
- To perform an additional angle cut on the same sheet, the sheet must be repositioned in the gripper and a new cutting sequence initated.

- **Minimum workpiece height:** 15 in. (381 mm)
- **Minimum workpiece length:** 24 in. (610 mm)

These minimum dimensions provide the clearance required for the gripper during angle cutting.

Cutting Speed

The SWS410 provides three programmable cutting-speed settings. Select the cutting speed based on the material, material thickness, number of sheets being cut, and type of blade. The maximum cutting speed is approximately **2 ft./sec.**

- **Fast**: 100% of maximum cutting speed
- **Medium**: 50% of maximum cutting speed
- **Slow**: 25% of maximum cutting speed

NOTE: The Fast, Medium, and Slow cutting-speed settings are programmable and can be customized to any value from 1% to 100% of maximum cutting speed.

Saw Blade Information

The saw blade must be selected to match the material and cutting operation. Using an improper blade can result in reduced blade life, poor cut quality, inaccurate cuts, binding or pinching, and increased risk of kickback.

Standard Blade

The SWS410 is supplied with the following general-purpose blade:

- **Part No.:** SW691-0076
- **Diameter:** 8 in. (200 mm)
- **Tooth count:** 24 teeth
- **Kerf:** 0.091 in.
- **Arbor:** 5/8 in. (16 mm)

The supplied blade is selected to provide fast, efficient cutting across typical applications. Other blade types may provide improved cut quality for specific materials or applications but may result in slower cutting speeds.

The SWS410 can process a range of structural sheathing and panel materials. When using a blade other than the supplied blade, select a blade appropriate for the material and cutting application and ensure that it is compatible with the SWS410.

⚠CAUTION

When a blade other than the supplied blade is installed, verify that the blade kerf corresponds to the **Kerf Value** configured in the software. If the blade has a **different kerf**, update the Kerf Value in the Configure toolbar under the General Settings tab and **recalibrate the X and Y axes** before operating the machine.

Blade Condition and Replacement

Keep saw blades clean and sharp for optimum cutting performance. A dull or dirty blade can cause binding or pinching, resulting in poor-quality cuts and increased risk of kickback.

Inspect blades regularly and replace blades that are dull, damaged, or otherwise unsuitable for continued use. Keep replacement blades available to minimize unnecessary downtime.

For questions about blade selection or cutting applications, contact Safety Speed Manufacturing customer service at 763-755-1600 or sales@safetyspeed.com.

Operating Controls and Functions

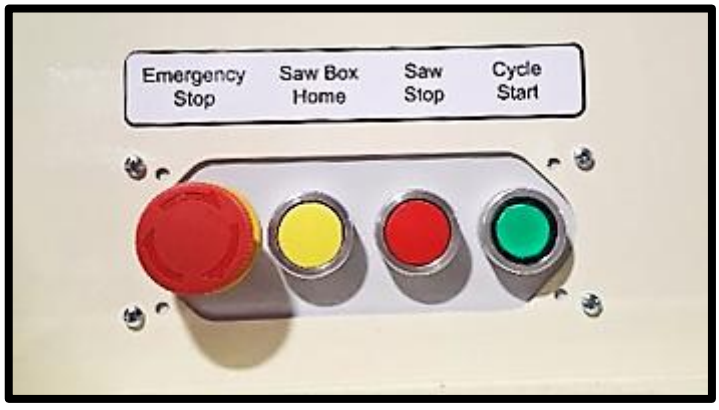
The SWS410 is operated through a touchscreen control panel running SpeedWorx software, which allows the operator to select and run cut-list files, optimize material usage, and visualize the cut layout and machine operation. Dedicated pushbuttons provide direct control of key machine functions. The machine performs cutting operations automatically, with operator input required between cycles to remove the completed cut or scrap and initiate the next operation.



Control Panel & Touchscreen **Cycle Start** **USB Type-A**



***Left* Pushbutton Panel**



***Right* Pushbutton Panel**

Pushbutton Controls

Emergency Stop (red mushroom button)

- Stops machine operation and removes power from controlled machine functions. The SWS410 is equipped with two Emergency Stop buttons, located on opposite sides of the saw motor carriage.

Saw Box Home (yellow button)

- Press once to move the saw box to its home position at the top of the machine. Press and hold for approximately 2 seconds to move the saw box to the zero position at the bottom. The SWS410 is equipped with two Saw Box Home buttons, located on opposite sides of the saw motor carriage.

Gripper Home (blue button)

- Press and hold for approximately 2 seconds to move the gripper to its home position at the far-left side of the machine. The SWS410 is equipped with one Gripper Home button, located on the left side of the saw motor carriage.

Cycle Start (green button)

- Initiates the next automatic cutting cycle. The SWS410 is equipped with three Cycle Start buttons: two located on opposite sides of the saw motor carriage and one located on the main control panel.

Saw Stop (red button)

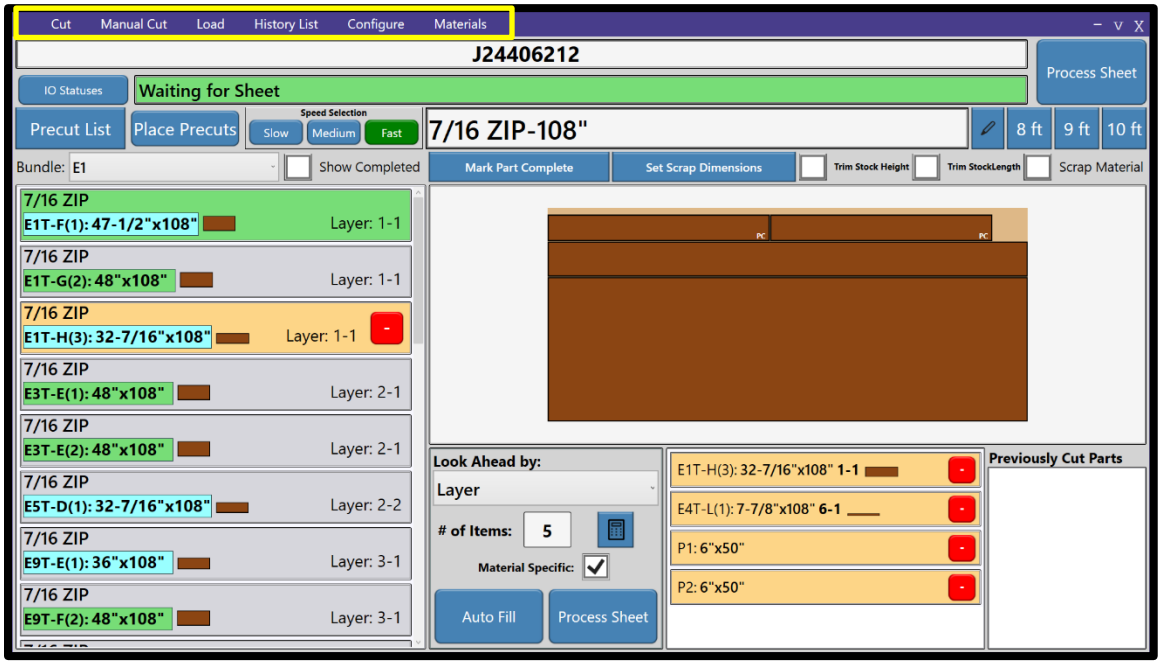
- Stops saw blade rotation. The blade may continue to rotate briefly as it coasts to a stop. Do not enter the cutting zone until the blade has completely stopped. The SWS410 is equipped with one Saw Stop button, located on the right side of the saw motor carriage.

Reset (red button)

- Located on the right side of the main control panel. Press and hold for approximately 2 seconds to reset and reinitialize the machine after correcting a fault condition.

Touchscreen Toolbar Functions

The touchscreen interface provides access to the primary software functions used to load, configure, and process cutting jobs. The following describes the touchscreen toolbar functions and their purpose.



Touchscreen Toolbar

Toolbar Functions Overview

Cut

- Cut screen is the primary operating interface for the machine. This is where operators will load and process job files (such as EHX or WBX files) and execute cutting operations. Most day-to-day production cutting is performed from this screen, including reloading jobs and running optimized cutting sequences.

Manual Cut

- Manual Cut screen is used for operator-defined cuts outside of programmed jobs. This mode allows the user to input specific dimensions directly for one-off cuts, such as a single rip or crosscut, or to produce a custom-sized piece. It is intended for quick, manual operations rather than full job processing.

NOTE: The distinction between the **Cut** function and **Manual Cut** function is that the **Cut** function is used when a job file is loaded, whereas the **Manual Cut** function operates independently of a loaded job file and relies on manual user input.

Load

- Load function is used to import new job files into the system. Operators can load EHX and WBX files, as well as other supported job formats such as CSV and TSV, making them available for processing on the Cut screen.

History List

- History List provides a record of previously processed jobs. This allows operators to review, recall, or reference past cutting operations as needed.

Configure

- Configure menu provides access to system settings and machine configuration options. This section is password-protected and provides access to system settings and configuration options organized by function, including General, File, Reporting, Material, Calibration, Printing, and Placement.

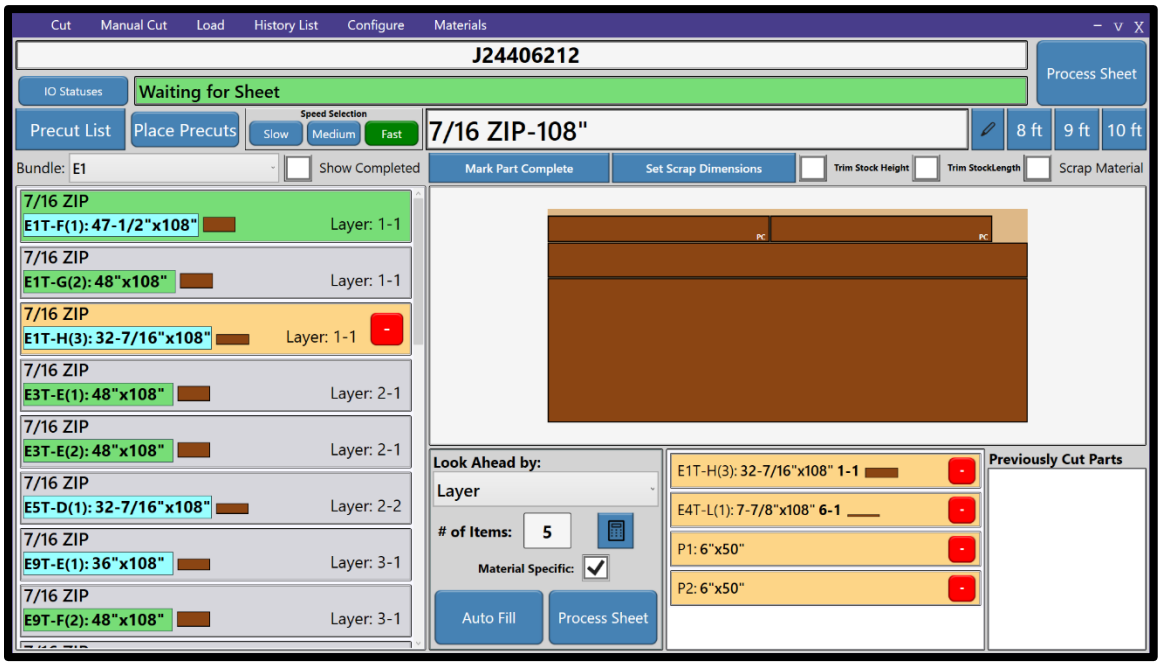
Materials

- Materials section contains a list of all registered materials in the system. When new materials are created or imported through job files, they are stored here for future use and reference.

Cut Screen Overview

Typical Workflow

- Confirm the correct material and stock size.
- Use *Autofill*, optionally with *Look Ahead*.
- *Place Pre-cuts*, if desired.
- Load the material onto the machine.
- Select *Process Sheet*.
- Press *Cycle Start* to begin cutting.



Cut Screen Features

I/O Statuses

- I/O Status window displays the real-time state of machine sensors, inputs, and control buttons. It also displays basic error codes and is primarily used for troubleshooting and diagnostics.

Pre-Cut List & Place Pre-Cuts

- **Pre-Cut List** allows users to define specific stock sizes, including quantity and priority.

- **Place Pre-Cuts:** Automatically places these items into available space on the sheet after the main job layout has been generated. This helps reduce material waste by converting potential scrap into usable stock pieces for future jobs.

Speed Selection

- Speed Selection option allows users to choose from Slow, Medium, and Fast cutting speeds. These speeds are configurable in the Configure Menu and are based on a percentage of the machine's maximum speed of 25.4 inches per second.

Material Selection

- Material Selection option (pencil icon) allows the user to select the active material.

NOTE: The user must physically load the selected material onto the machine.

Sheet Size / Stock Length

- Sheet Size / Stock Length options (e.g., 8 ft., 9 ft., and 10 ft.) adjust the displayed sheet size in the interface.

NOTE: The user must physically load the corresponding stock length onto the machine.

Mark Part Complete

- Mark Part Complete function allows users to manually mark a part in the job list as complete. Completed parts are excluded from future Autofill operations.

Set Scrap Dimensions

- Set Scrap Dimensions feature allows users to define a custom sheet size when working with leftover or non-standard material. This enables Autofill to place parts onto smaller scrap pieces instead of full sheets, improving material utilization.

Trim Stock Height & Trim Stock Length

- **Trim Stock Height:** Performs a rip cut to trim the material to the specified stock height before processing.

- **Trim Stock Length:** Performs a crosscut to trim the material to the specified stock length before processing.

NOTE: These features are typically used to prepare oversized or uneven stock sheets before cutting parts. Each feature can be enabled or disabled by selecting its corresponding checkbox. A checkmark indicates that the feature is enabled.

Look Ahead

- Look Ahead feature enhances Autofill by allowing the system to consider parts across multiple groups (e.g., bundles, layers, or panels). A higher Look Ahead value can improve material utilization but may require additional sorting after cutting. This setting allows the user to balance material efficiency with post-processing effort.

Autofill

- Autofill function automatically arranges parts from the job list on the sheet to maximize material utilization. It selects and places parts based on the most efficient use of available space.

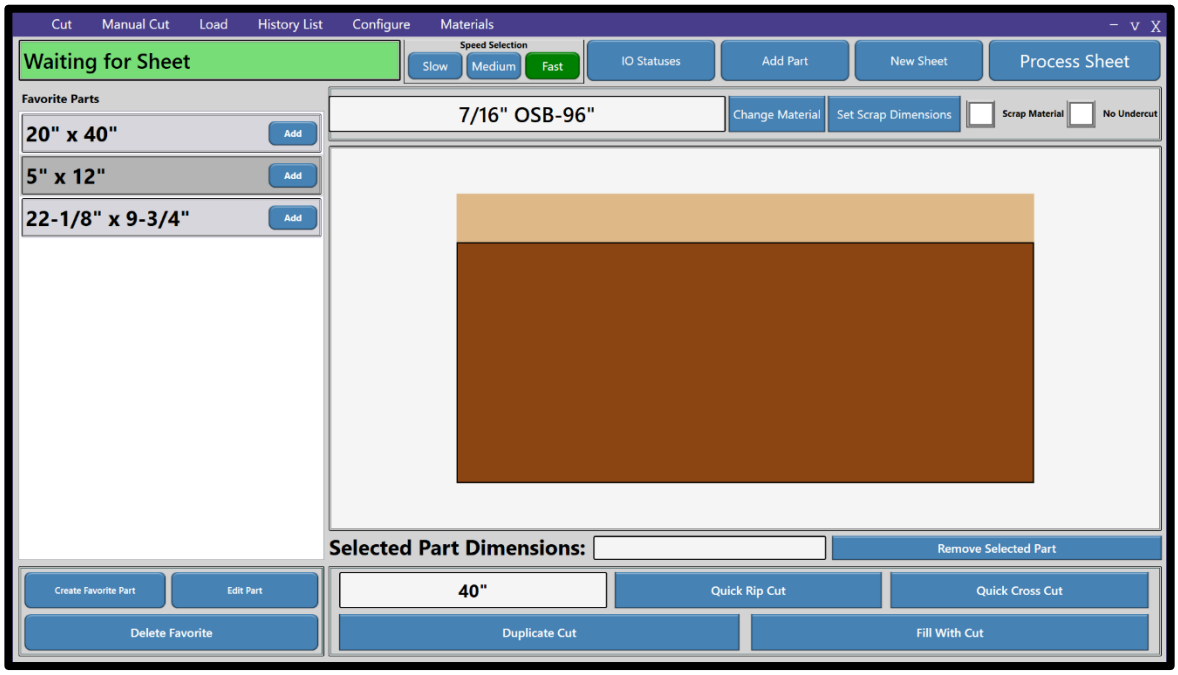
Process Sheet

- Process Sheet command prepares the job for execution. Once initiated, the system confirms that the machine is ready, and the user must press the physical **Cycle Start** button to begin cutting.

Manual Cut Screen Overview

Typical Manual Cut Workflow

- Confirm the correct material and stock size.
- Set the sheet size or scrap dimensions, if applicable.
- Add parts manually
  - Use *Quick Rip Cut* or *Quick Cross Cut* for rip or crosscuts.
  - Or select parts from the *Favorites Parts List*
- *Duplicate Cut*, *Fill With Cut*, or use *Remove Selected Part* as needed.
- Load the material onto the machine.
- Select *Process Sheet.*
- Press *Cycle Start* to begin cutting.



Manual Cut Screen Features

Favorite Parts

- Favorite Parts list allows users to save commonly used part dimensions for quick access during manual cutting operations. The Favorite Parts list can be edited with Create Favorite Part, Edit Part and Delete Favorite functions. These functions reduce repetitive data entry during manual cutting operations.

Create Favorite Part

- Saves a new part with defined dimensions to the Favorite Parts list.

Edit Part

- Modifies the dimensions of an existing saved part in the Favorite Parts list.

Delete Favorite

- Removes a saved part from the Favorite Parts List.

Speed Selection

- Speed Selection option allows users to choose from Slow, Medium, and Fast cutting speeds. These speeds are configurable in the Configure Menu and are based on a percentage of the machine's maximum speed of 25.4 inches per second.

I/O Statuses

- I/O Status window displays the real-time state of machine sensors, inputs, and control buttons. It also displays basic error codes and is primarily used for troubleshooting and diagnostics.

Add Part

- Add Part function allows users to manually enter dimensions for a new part and place it onto the sheet.

New Sheet

- New Sheet function clears all current parts from the workspace and resets the layout to a blank sheet.

Process Sheet

- Process Sheet command prepares the job for execution. Once initiated, the system confirms that the machine is ready, and the user must press the physical Cycle Start button to begin cutting.

Change Material

- Change Material function allows users to select the active material type and stock length.

NOTE: The user must physically load the corresponding material and stock length onto the machine.

Set Scrap Dimensions

- Set Scrap Dimensions feature allows users to define a custom sheet size when working with leftover or non-standard material. This updates the sheet dimensions displayed in the interface and the corresponding program parameters.

No Undercut

- No Undercut option allows the user to disable the programmed undercut when making cuts. When enabled, the system cuts parts to the specified dimensions without applying the standard undercut allowance.

NOTE: The standard undercut allows the system to account for blade kerf when cutting adjacent parts. Selecting No Undercut disables this allowance, allowing parts to be cut to the programmed dimensions without the additional undercut.

Remove Selected Part

- Remove Selected Part function deletes a selected part from the layout. The part must be highlighted before it can be removed.

Quick Rip Cut

- Quick Rip Cut function performs a single straight rip cut (lengthwise cut) across the sheet at a specified dimension.

Quick Crosscut

- Quick Crosscut function performs a single crosscut (widthwise cut) across the sheet at a specified dimension.

Duplicate Cut

- Duplicate Cut function creates additional copies of a selected part already placed on the sheet, eliminating the need to re-enter its dimensions.

Fill With Cut

- Fill With Cut function fills the remaining area of the sheet with repeated cuts, maximizing material utilization during manual cutting operations.

Cutting Operations

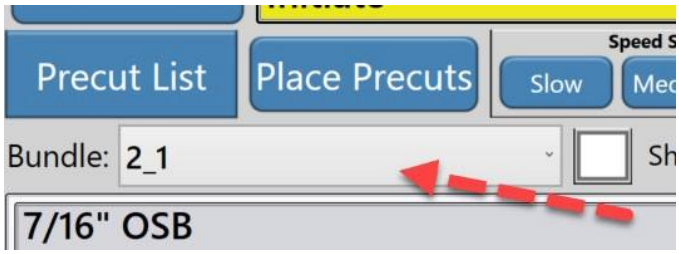
SpeedWorx provides an integrated workflow for managing and processing cutting jobs, streamlining the operation from job setup through final cut processing. The software organizes cut files, coordinates cut sequences and optimizes material usage to maximize material yield and minimize waste. The following procedures outline the process for importing cut files, selecting bundles and cuts, choosing material, and processing a job.

Importing and Selecting Cut Files

a. Import a compatible job file into SpeedWorx such as an EHX and WBX file. Job files can be accessed from a network drive or a USB drive. The USB port is located on the right side of the control panel.
b. On the SpeedWorx toolbar, select ***Load***.
c. Select ***Import File*** in the upper-right corner of the screen.
d. A list of files will be displayed from the selected directory. If the required file is not listed, select ***Browse*** in the upper-right corner, navigate to the file location, and select the file.
e. Select the required file from the list displayed in SpeedWorx.
f. The selected file will be highlighted in gray. Select ***Import File*** to import the file.
g. If the Cut screen does not automatically populate after the file is imported, select ***Cut*** from the toolbar at the top of the screen.

Choosing a Bundle

a. Select the bundle you want to cut first.

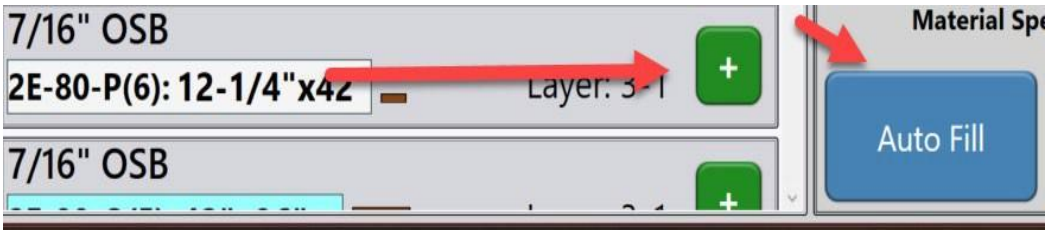


b. Bundles are ordered according to the order in which they are read from the job file. Parts within a bundle can be cut in either the order they appear in the file or in reverse order.

NOTE: Selecting ***Reverse Order*** in the ***Configure*** general setting menu causes the first piece required to build the wall to be cut last. This places the completed stack of cut parts in build order for the assembly line.

Selecting Cuts

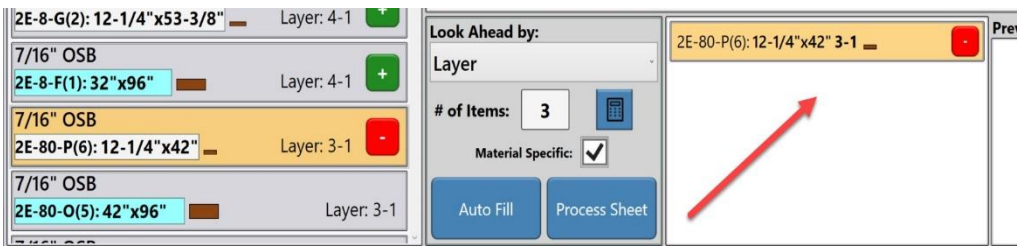
a. Available cut pieces are displayed in a list along the left side of the screen.
b. Select ***AutoFill*** to automatically select pieces or manually select individual pieces by pressing the green **+** button next to each piece.



c. Selected pieces will change to a peach color and will display a ***Remove*** button in place of the ***Add*** button.



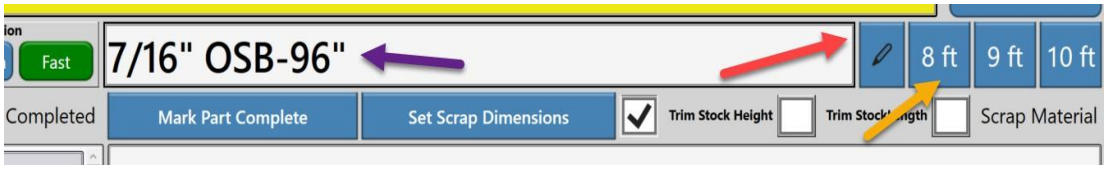
d. Selected cuts are also displayed in a list in the lower portion of the screen.



e. To deselect a piece, press the red **–** button next to the piece.
f. In some cases, an operator may choose to precut certain pieces, such as furring strips, from scrap material rather than from the loaded sheet.
g. If these pieces have already been precut, deselect them from the cut list.
h. Mark the precut furring pieces as ***Completed*** so that AutoFill will not select them during future cuts.
i. When the smaller pieces need to be cut from scrap material, use the ***Manual Cut*** function.

Choosing Material

a. In the Cut screen, select ***Material*** by pressing the ***Pencil*** button, as shown by the red arrow below.
b. A list of loaded materials will be displayed. Select the required material type and stock length.
c. The selected material is displayed in the material field indicated by the purple arrow.
d. Use the stock-length buttons indicated by the orange arrow to quickly switch between available stock lengths.



e. Select ***Set Scrap Dimensions*** to enter custom dimensions for a piece of scrap material based on the selected material type.
f. If the required material type is not displayed in the Materials list, navigate to the ***Materials*** page using the top toolbar.
g. After entering the machine password, authorized users can add materials to the list and adjust available stock lengths.

Processing the Cut

a. After the cuts and material have been selected, the machine is ready to process the sheet.
b. Load the sheet of sheathing onto the left side of the saw.
c. If necessary, press and hold the blue ***Gripper Home*** button to move the gripper to the left and provide clearance for the sheet.
d. Select ***Process Sheet*** on the touchscreen.
e. Press the illuminated green button on the machine to begin processing the cut. A green button is located on both sides of the saw.
f. The gripper may slow as it approaches the cutting zone. This is normal. The gripper cannot travel through the cutting zone, so the belt drive on the opposite side takes over movement of the sheet. The gripper and belt drive perform a controlled hand-off as the sheet moves back and forth through the saw.
g. During the cutting process, the saw may pause and prompt the operator to press the green button. Follow the on-screen prompts and press the green button as instructed while each piece is separated from the original sheet, whether the piece is a waste piece or a usable part.
h. If equipped with the optional printer, as each piece is cut, the printer will automatically print a label for the piece.

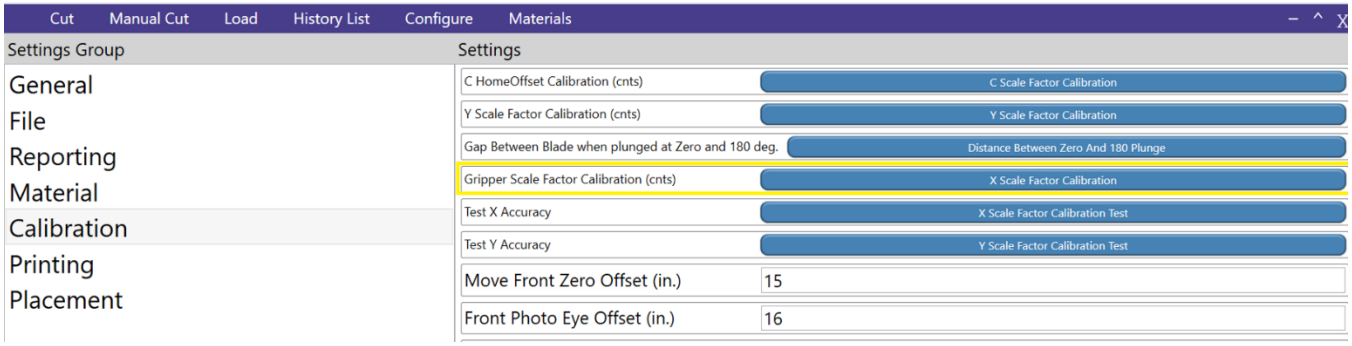
Calibration

The X- and Y-axis calibration establishes the dimensional accuracy of the cutting system. Initial calibration of the X and Y axes will be performed with assistance from SpeedWorx install technician during machine setup. The C-axis (rotation) is factory calibrated and should not require adjustment during or after installation.

Calibration should be verified periodically by checking the accuracy of rip and crosscuts. A full calibration procedure is generally required only when cutting accuracy is outside the expected range or after service, repair, component replacement, or mechanical adjustment.

NOTE: If the blade kerf changes, such as when installing a different saw blade, the new kerf value must be entered under Configure > General. The X- and Y-axis calibration procedures must be performed after the kerf value is updated.

X-Axis Calibration

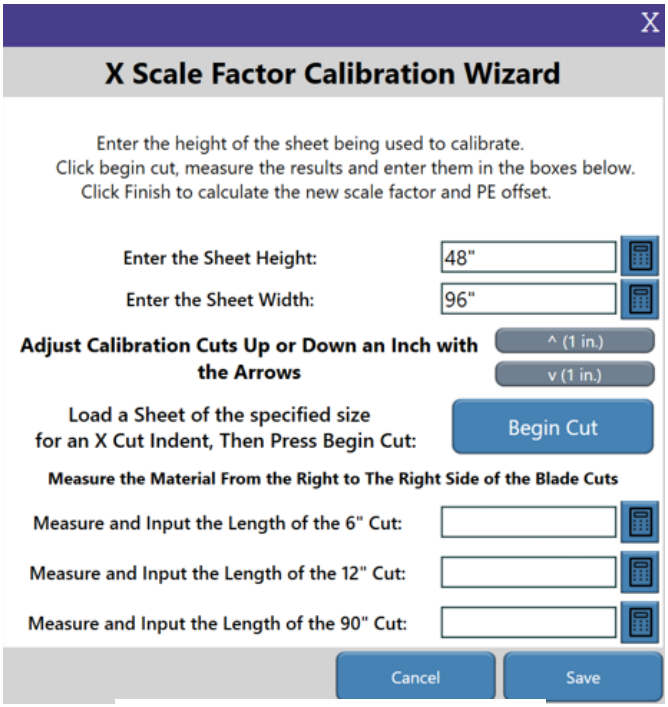


Calibration Menu – *X-Axis*

a. From the list of options, select ***Configure*** and enter the required password.
b. Select ***Calibration***.
c. Select ***X Scale Factor Calibration***.
d. Load a full 4 × 8 sheet in good condition onto the machine. Ensure the sheet has clean, straight edges and is free from warpage, damage, or other conditions that could prevent an accurate calibration.
e. Measure and enter the sheet height.
f. Measure and enter the sheet width. Accurate measurement is critical to ensuring accurate calibration.
g. Adjust the locations of the calibration test cuts using the up or down arrows, if desired.
h. Select ***Begin Cut*** on the screen to send the calibration cut instructions to the saw controller.
i. Press the green ***Cycle Start*** button. The machine will begin making three test cuts.
j. After completing the three test cuts, press the red ***Saw Stop*** button to turn off the saw motor.
k. Using a tape measure, measure the distance from the right edge of the sheet to the right edge of each width of the cut made by the blade (blade kerf).
l. Compare the measured dimensions to the requested dimensions displayed on the screen.
m. If the measured dimensions are accurate, select ***Cancel*** to exit the calibration procedure.
n. If the measured dimensions are inaccurate, enter the actual measured dimensions for each

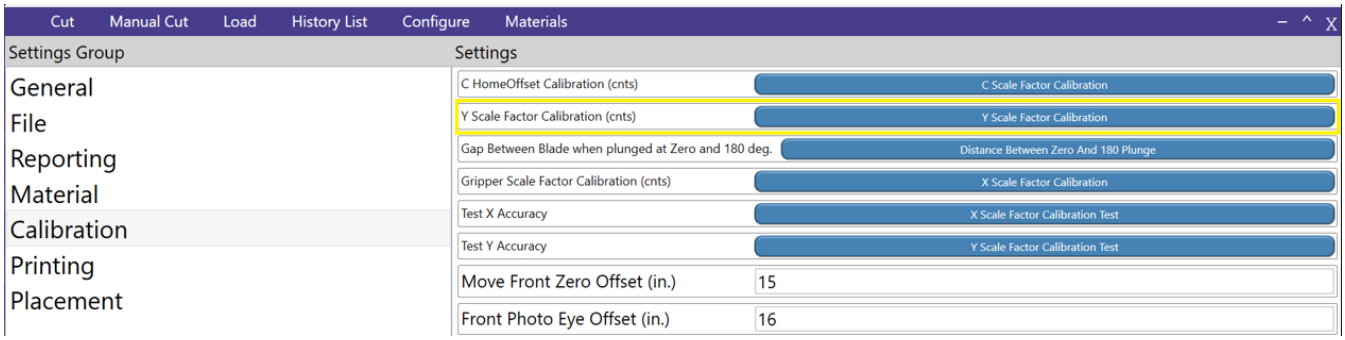
cut into the computer.

o. Select ***Save*** to apply the updated calibration values and complete the X-axis calibration.



Calibration Wizard – *X-Axis*

Y-Axis Calibration

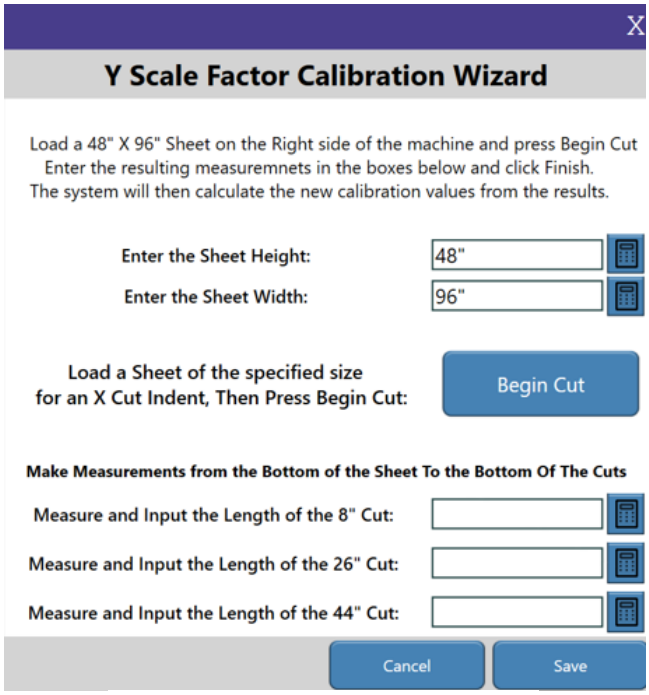


Calibration Menu – *Y-Axis*

a. From the list of options, select ***Configure*** and enter the required password.
b. Select ***Calibration***.
c. Select ***Y Scale Factor Calibration***.
d. Load a full 4 × 8 sheet in good condition onto the machine. Ensure the sheet has clean, straight edges and is free from warpage, damage, or other conditions that could prevent an accurate calibration.
e. If using a sheet other than 4 × 8, enter the actual sheet height and width dimensions.
f. The calibration wizard will determine the locations of the calibration cuts based on the entered

sheet height.

g. Select ***Begin Cut*** on the screen to send the calibration cut instructions to the saw controller.
h. Press the green ***Cycle Start*** button. The machine will begin the cutting operation.
i. After completing the three test cuts, press the red ***Saw Stop*** button to turn off the saw motor.
j. Using a tape measure, measure the distance from the bottom edge of the sheet to the bottom edge of each width of the cut made by the blade (blade kerf).
k. Compare the measured dimensions to the requested dimensions displayed on the screen.
l. If the measured dimensions are accurate, select ***Cancel*** to exit the calibration procedure.
m. If the measured dimensions are inaccurate, enter the actual measured dimensions for each cut into the computer.
n. Select ***Save*** to apply the updated calibration values and complete the Y-axis calibration.



Calibration Wizard – *Y-Axis*

Printer

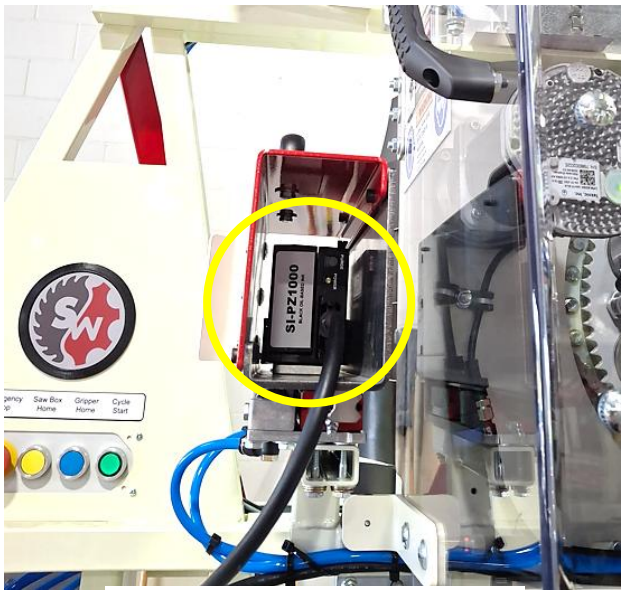
The SpeedWorx can be equipped with an optional inkjet printer that automatically prints identification information on each part as it is cut. This streamlines part identification by eliminating the need to manually mark each part as it comes off the saw. The printed information allows operators to quickly identify and organize parts and helps assembly personnel identify each part. By default, the printer prints the panel label and part ID, with options to include layer and/or bundle information.

Printer Operation

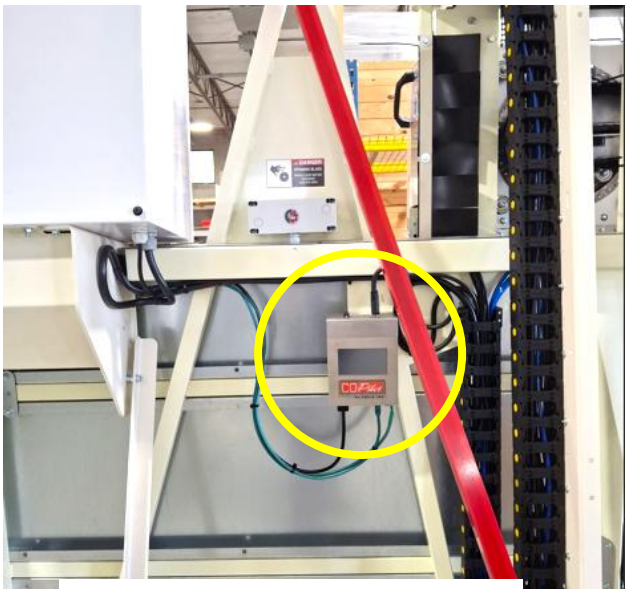
When the printer is enabled, the printer will automatically label cut pieces when the printer can access the piece during the cutting sequence.

Depending on the specific cutting sequence and the physical position of the printer, some cut pieces may not be accessible for printing. If a cut piece is not labeled, manually mark the piece with the required identification information. Previously cut piece information is displayed in the lower-right corner of the screen under ***Previously Cut Parts***.

The printer consists of four primary components: the printhead, printer controller, ink cartridge and printer cable. The printer head and removeable ink cartridge is located under a removable red cover on the left side of the saw motor area. The printer cable connects the printhead to the printer controller and provides power and data communication. The printer controller is mounted to the rear side of the main frame between the main control panel and the saw motor box.



Printer Head/Ink Cartridge



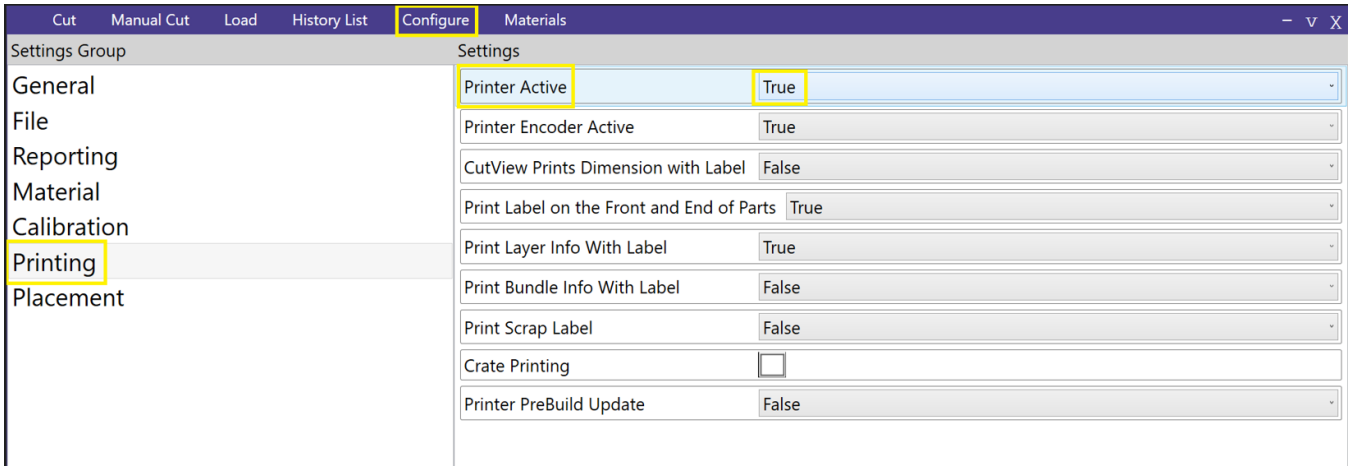
Printer Controller (*Rear Side*)

⚠WARNING

Do NOT disconnect the printer cable while the printer is ON. Disconnecting the printer cable while the printer is ON may cause an electrical arc across the connector pins. Power OFF the printer controller before disconnecting the printer cable. The controller power switch is located underneath the unit.

Enable/Disable Printer

Printer enable/disable control is accessed through the ***Configure*** option on the toolbar. Within the ***Configure*** menu, select ***Printing***. Toggle the printer setting to ***True*** to turn printing ON or ***False*** to turn printing OFF.



Printer Settings Menu

NOTE: When turning the printer ON through the Configure menu, the printer controller may take up to 10 minutes to complete the initialization process. Restarting the printer controller and/or SpeedWorx software may be required.

Printhead Purging

If the printed information is too light or distorted, the printhead may require purging. Purging pushes ink through the printhead face to clear accumulated sawdust or other debris that may be obstructing the printhead nozzles. The following steps describe the printhead purging procedure.

a. Remove the red cover from the printhead mount.
b. Remove the printhead from its mounting location (magnetic base).
c. Hold a clean paper towel or rag lightly beneath the face of the printhead.
d. Press and hold the ***PURGE*** button for at least 4 seconds to allow ink to wash out.
e. Lightly blot around the printhead opening to remove excess ink. The printhead contains a delicate membrane that should not be touched.

⚠CAUTION

DO NOT WIPE ACROSS THE PRINTHEAD FACE. Wiping the printhead face may damage the delicate membrane or force sawdust and other debris into the printhead. Lightly blot around the printhead opening to remove excess ink.

NOTE: Depending on the location of the debris, it may be necessary to reorient the printhead during purging to change the direction of ink flow and help wash out the debris.

f. Reinstall the printhead onto the magnetic base. Align the two locating pins on the magnetic base with the corresponding holes on the printhead mount.
g. Reinstall the red printer cover.
h. Repeat the purging procedure as needed until print quality is restored.

Printhead Purging Video

Scan the QR code below with a smartphone to view a step-by-step demonstration of the printhead purging procedure. Alternatively, use the link below to access the video.

Video: *How to Purge the Printer SpeedWorx*

Link: https://vimeo.com/1219025193/ebce5c07f1

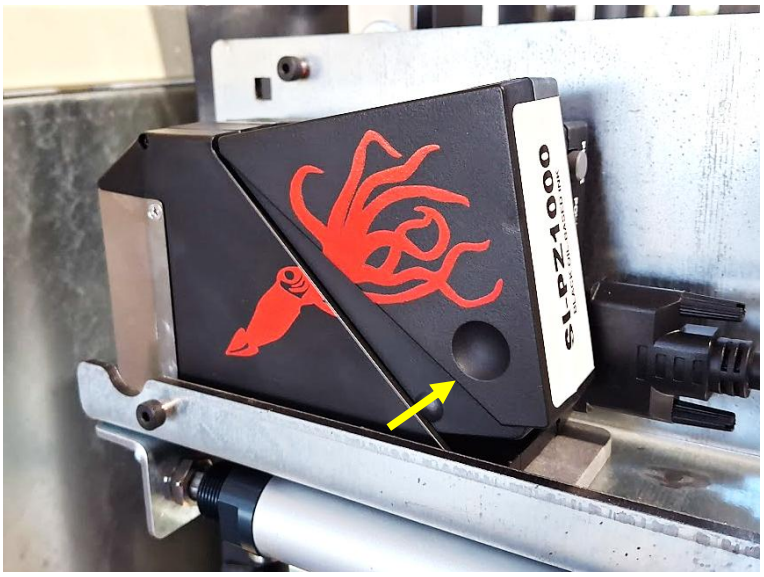
Printer Ink Cartridge

The ink cartridge supplies ink to the printhead and is designed to be removable for replacement. Use only the SI-PZ1000 ink cartridge specified for the printer. Using incompatible ink may result in poor print quality or damage to the printing system.

Replace the cartridge when the ink is depleted. When replacing the cartridge, keep the cartridge and printhead connection clean and prevent sawdust or other debris from entering the ink system. The following steps describe the ink cartridge replacement procedure.

a. Power OFF the printer controller to remove power from the printhead.
b. Remove the red cover from the printer mount.
c. Push upward on the accessible bottom corner of the ink cartridge while pushing the cartridge outward to remove it. No tools are required.
d. Install the new ink cartridge by reversing the removal procedure.
e. Reinstall the red cover.
f. Power ON the printer controller to restore power to the printhead.

NOTE: When turning the printer ON through the Configure menu, the printer controller may take up to 10 minutes to complete the initialization process. Restarting the printer controller and/or SpeedWorx software may be required.



Ink Cartridge Removal

⚠CAUTION

Handle the ink cartridge carefully to prevent ink from contacting the machine, surrounding surfaces, or clothing.

NOTE: Clean, dry sawdust is highly effective for cleaning up ink spills or residue. Apply sawdust to the affected area and gently rub it into the ink to absorb the spilled ink before collecting and removing the sawdust.

Maintenance

Regular maintenance is essential to keep the SWS410 operating safely, reliably, and accurately. Establish and follow a routine maintenance program to prevent excessive wear, maintain machine performance, and reduce the potential for unexpected downtime.
Refer to the maintenance schedule and procedures in this section for recommended inspection, cleaning, lubrication, and component replacement requirements.

NOTE: Before performing any maintenance, review and follow all applicable safety procedures provided in the safety section of this manual. Follow all applicable Lockout/Tagout procedures before servicing the machine.

Cleanliness

- Remove sawdust accumulation from the machine and surrounding work area.
- Remove sawdust accumulation from the saw motor box and cutting chamber.
- Remove any debris and sawdust accumulation from dust belt travel path. See ***Dust Belt Removal*** procedure below.

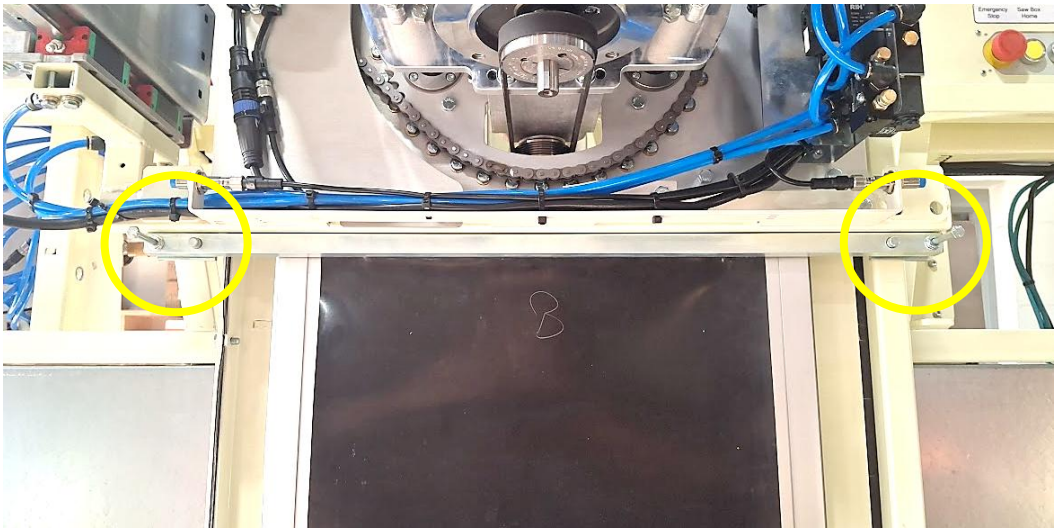
  NOTE: Excessive sawdust and/or debris accumulation along the path of the black dust curtain can interfere with Y-axis carriage movement and affect machine performance.
- Keep X-axis rails and red gripper wagon travel path clean.

  NOTE: Excessive sawdust and/or debris accumulation along the path of the red gripper wagon can interfere with X-axis movement and affect machine performance.
- Keep the photo-eye clean and unobstructed.
- Check and empty the dust collector as required.
- Inspect X-, Y-, Z-, and C-axis travel paths for obstructions that could impede movement.
- Inspect for loose, damaged or missing hardware, guards, or other components.

Dust Belt Removal

Removal of the dust belt is required to thoroughly remove debris and sawdust accumulation from the curtain and its travel path. Follow the procedure below:

a. Press the yellow ***Saw Box Home*** button. This moves the saw box to the home position, if not already there, releases tension on the dust curtain and opens the outfeed side skirt.
b. Remove the dust belt by pulling the horizontal bar from the two pins securing it at the top of the curtain.
c. Clean the area behind the dust belt and remove any debris or sawdust that could obstruct its travel path.
d. Reinstall the dust curtain by placing the horizontal bar onto the two securing pins.



Dust Belt Pins

e. Press the yellow ***Saw Box Home*** button. This tensions the dust curtain, closes the outfeed side skirt, and resets the saw for operation.

NOTE: Releasing the dust curtain tension disables saw functions to prevent operation while the dust curtain is being removed. Saw operation remains disabled until the dust curtain is re-tensioned.

Wear Parts

- Inspect the saw blade for dull, chipped, damaged, or missing teeth. Replace the blade when cutting quality, cutting performance, or blade condition indicates service is required. See ***Saw Blade Replacement*** procedure below.
- Inspect saw motor belt and pulley sheaves for wear, damage, proper alignment, and tension. Check for excessive vibration, noise, or belt slippage. See ***Saw Motor Belt Replacement*** procedure below.
- Inspect X-Track belt for wear, abnormal noise, debris obstructions, damage, proper tension and alignment.

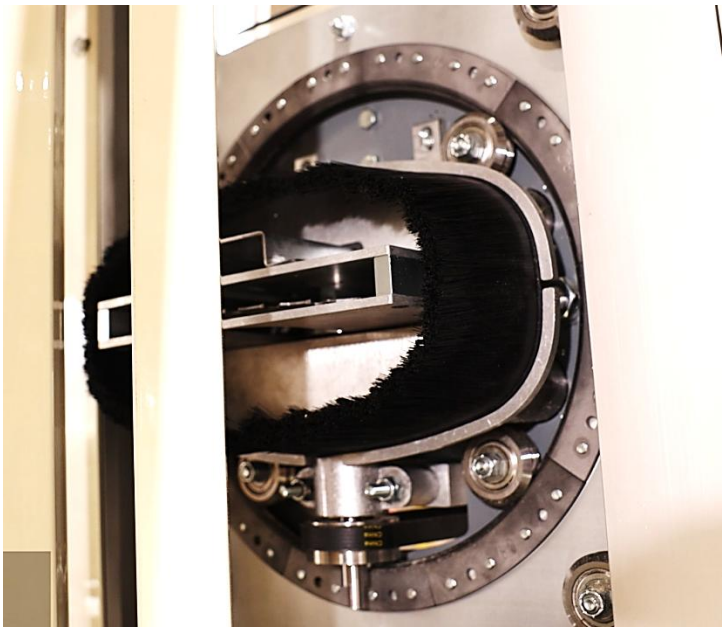
Saw Blade Replacement

Saw blade replacement instructions are provided in the procedure and QR code to video that follows. The replacement blade must be **8-in. diameter** with a **5/8-in. arbor**. A blade with **24 teeth** and a **0.091-in. kerf** is recommended.

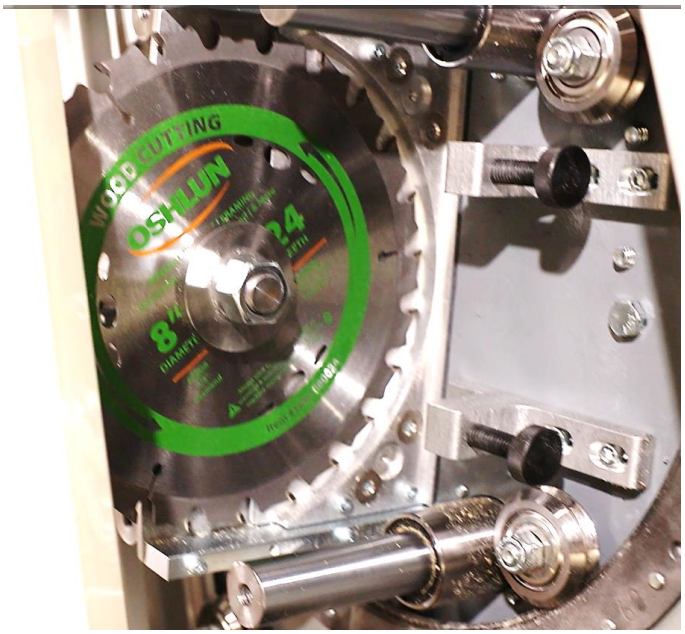
NOTE: For optimal machine performance, use the factory-supplied blade or a replacement blade with the same specifications. Changes to the blade tooth count or kerf may adversely affect machine performance.

⚠CAUTION

When a blade other than the supplied blade is installed, verify that the blade kerf corresponds to the **Kerf Value** configured in the software. If the blade has a **different kerf**, update the Kerf Value in the Configure toolbar under the General Settings tab and **recalibrate the X and Y axes** before operating the machine.



Saw Blade – *Guards Installed*



Saw Blade – *Guards Removed for Service*

Saw Blade Replacement Procedure

a. Press the ***Saw Box Home*** button to move the saw box to the home position.
b. Disconnect power to the machine and follow all applicable **Lockout/Tagout (LOTO)** procedures. Disconnect the air supply by removing the air line from the air supply regulator allowing the system to fully depressurize.
c. Remove the brush assembly by removing the four hex bolts using a 9/16-in. socket, extension, and ratchet.
d. Manually rotate the saw to the vertical position.

⚠CAUTION

The saw blade has sharp edges and teeth. Use appropriate hand protection and exercise caution when handling the blade to prevent cuts or other injury.

e. Pull the motor toward the frame. **Avoid contact with the saw blade.** Pulling on the saw arbor is typically the easiest method.
f. Fully loosen the two black thumbscrews.
g. Remove the cover plate.
h. Remove the magnetic plate to fully expose the saw blade.

⚠CAUTION

The magnetic plate is held in place by strong magnetic force. Use care when removing or handling the plate to avoid pinching fingers or hands.

i. Loosen the arbor nut using a 15/16-in. wrench or socket while holding the arbor shaft with an adjustable wrench.
j. Remove the arbor nut and arbor washer.
k. Remove the saw blade. Note the blade orientation before removal.
l. Clean the arbor, arbor nut, and arbor washer. Ensure all components are free of debris before reassembly.
m. Install the new saw blade in the same orientation as the removed blade. Ensure the blade is properly seated on the arbor.
n. Install the arbor washer and arbor nut.
o. Tighten the arbor nut securely using a 15/16-in. wrench or socket while holding the arbor shaft with an adjustable wrench.
p. Install the magnetic plate next to the saw blade.
q. Install the cover plate.
r. Hand tighten both thumbscrews.
s. Push the motor away from the frame toward the front of the machine. **Avoid contact with the saw blade.** Pushing on the saw arbor is typically the easiest method.
t. Reinstall the brush assembly.
u. Install the four hex bolts and tighten using a 9/16-in. socket and ratchet.
v. Remove all tools and other loose items from the machine area.
w. Restore the air and electrical power and remove Lockout/Tagout devices in accordance with applicable safety procedures.
x. Verify proper operation before returning the machine to service.

Saw Blade Replacement Video

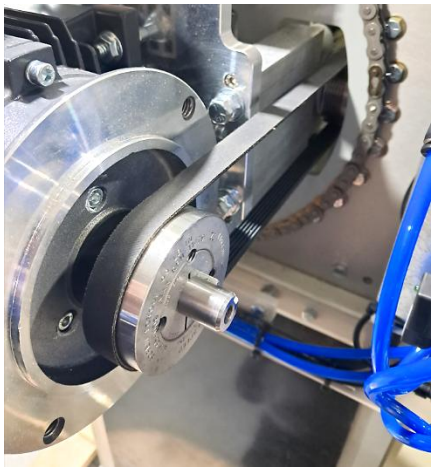
Scan the QR code below with a smartphone to view a step-by-step demonstration of the saw blade replacement procedure. Alternatively, use the link below to access the video.

Video: *How to Change Saw Blade SpeedWorx*

Link: https://vimeo.com/1219025192/aacc11d7ec

Saw Motor Belt Replacement

The saw motor belt transfers power from the motor to the saw arbor. Inspect the belt regularly for wear, damage, or improper tension, and replace it as needed. Saw motor belt replacement instructions are provided in the procedure that follows.

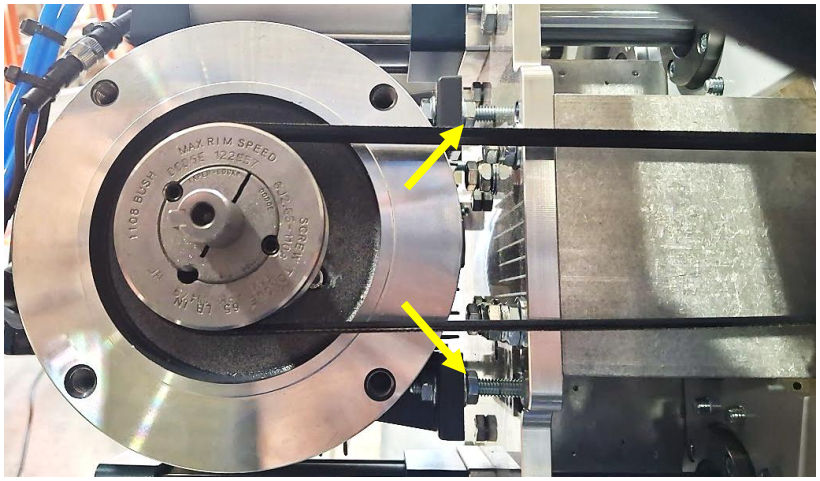


Saw Motor Belt

NOTE: Proper belt tension is critical to machine performance and arbor bearing life. An under-tensioned belt may slip and produce squealing; an over-tensioned belt can place excessive load on the arbor bearings and cause premature failure.

Saw Motor Belt Replacement Procedure

a. Disconnect power to the machine and follow all applicable **Lockout/Tagout (LOTO)** procedures. Disconnect the air supply by removing the air line from the air supply regulator allowing the system to fully depressurize.
b. Manually position the height of the saw motor area as needed to provide safe and comfortable access to the belt and motor.
c. Loosen the two lower motor nuts located behind the motor on the belt-drive side. **Do NOT adjust the four upper motor nuts on the front side of the motor.** The upper motor nuts establish the motor position and provide the reference for the existing belt tension.



Saw Motor Lower Nuts (*Side View*)

d. Push the motor toward the saw arbor drive wheel to release tension from the belt and remove the existing belt.
e. Install the replacement belt in reverse order of removal. Push the motor toward the saw arbor drive wheel as needed to bring the drive wheels closer together and allow the belt to be installed.
   NOTE: Ensure all belt ribs are properly seated in the corresponding grooves of pulleys.
f. Restore the Motor Position by securing the two lower motor nuts to their original positions.
g. Check belt tension using either of the following methods:
   - Twist Method: Twist the belt at its midpoint between the drive wheels. The belt should rotate approximately 90° but less than 180° before reaching firm resistance.
   - Deflection Method: Apply the specified force at the midpoint of the belt and verify the required deflection.

     NOTE: Target Tension: Maintain 2.0–3.1 lbf at 0.14 in. of belt deflection. This range applies to the current drive configuration and is intended to provide adequate tension while minimizing stress on the arbor bearings.
h. If the belt tension is outside the specified range, equally adjust the four upper motor nuts on the top side of the motor. Once the correct tension is achieved, re-tighten all four motor nuts to secure the motor in position.
   - **Tightening** upper motor nuts moves motor closer to arbor > **decreases tension**.
   - **Loosening** upper motor nuts moves motor away from arbor > **increases tension**.

     NOTE: Adjust all four upper motor nuts **equally** to keep the motor parallel to the arbor mounting plate. Unequal adjustment can misalign the motor and arbor, resulting in improper belt tracking and accelerated belt wear.
i. Once the belt tension is within specification, tighten the two lower motor nuts that were loosened previously.
j. Remove all tools and other loose items from the machine area.
k. Restore the air and electrical power and remove Lockout/Tagout devices in accordance with applicable safety procedures.
l. Verify proper operation before returning the machine to service.

NOTE: When adjusting belt tension, it is safer to start slightly loose than too tight. An under-tensioned belt may slip or squeal and can be readily corrected. Excessive belt tension can place excessive load on the arbor bearings and may cause rapid or premature arbor failure.

Lubrication

Regular lubrication of the linear slider blocks is required to maintain proper machine performance and prevent premature wear. Use only the specified lubricant and follow the procedures below for each axis and assembly.



- **Product:** Mobilith SHC™ PM 460
- **Manufacturer:** Mobil
- **NLGI Grade:** 1.5
- **Base Oil:** Synthetic
- **Thickener:** Lithium Complex
- **Base Oil Viscosity:** ISO VG 460
- **Color:** White
- **Operating Temperature Range:** -40°F to 302°F
- **Cartridge:** 13.4 oz grease-gun cartridge

Lubricate each linear rail slider block noted below with **one pump** of **Mobilith SHC™ PM 460 grease**. Move each axis back and forth several times to distribute the grease evenly.

- **X-axis** - Red Gripper Wagon (4 slider blocks)

  NOTE: After lubricating the **X-axis** slider blocks and before operation, enable ***Air Cut*** through ***IO Status*** > ***Maintenance Mode*** > ***Air Cut***. Load a sheet and perform **three** rip cut cycles in ***Air Cut*** mode to distribute the grease along the X-axis rail. Turn ***Air Cut*** OFF when complete.

- **Y-axis** – Counterweight (4 slider blocks)

  NOTE: After lubricating the **Y-axis** slider blocks and before operation, cycle the saw motor box up and down **three times** using the yellow pushbutton to distribute the grease along the Y-axis rail. Hold the pushbutton to move the motor box to the zero position and press the pushbutton to return it to the home position.

- **Printer** – If Equipped (2 slider blocks)

  NOTE: After lubricating the **printer assembly** slider blocks and before operation, manually cycle the printer assembly **three times** to distribute the grease along the rail. Use the solenoid located in the saw motor box, identified by its adjustable exhaust ports. Press the red button on the back of the solenoid to actuate one cycle of the printer air cylinder and move the printer assembly back and forth.

NOTE: The board loaded proximity sensor assembly on the red gripper wagon uses a short linear rail with less than 1 in. of travel. **Do NOT lubricate this slider block.** The limited travel can prevent the grease from being properly distributed and may cause the slider to bind or seize. No grease fitting is provided for this slider block by design.

⚠CAUTION

Use **Mobilith SHC™ PM 460 grease only** for the SWS410 linear slider blocks. Its synthetic, high-viscosity formulation provides the wear protection, load-carrying capacity, mechanical stability, and contamination resistance required for these linear bearing applications, including operation in environments where sawdust is present. Do not substitute, mix, or use an unspecified or incompatible grease. Improper lubrication may attract or retain sawdust and other contaminants, resulting in premature wear, bearing damage, or failure, and may void the manufacturer's warranty.

Frame Alignment

The SWS410 Series panel saws are factory aligned and calibrated during installation to a tolerance of ±1/32 in. Each roller section is factory calibrated. Alignment between adjoining frame sections is established and verified during initial machine installation.

Alignment should be checked if the machine is moved, mishandled, or subjected to impact, or if a material roller is replaced. Alignment should also be checked if material does not feed properly, binds during operation, or cut squareness falls outside the specified ±1/32-in. tolerance.

Frame Configuration

- Left Frame: 10 ft., consisting of two roller sections
- Main Frame: Two roller sections, including the saw housing
- Right Frame: 5 ft., consisting of one roller section

Tools Required

- Non-elastic string line
- Three identical spacers, such as hex nuts
- Ratchet with 9/16-in. socket
- Pallet jack

Alignment Procedure

a. Secure the string line at the starting end of the left frame and extend it across the full length of the machine to the end of the right frame.
b. Attach identical spacers to the string at both ends to position the string slightly above the roller surfaces. Ensure the string is taut and parallel to the roller path.
c. Use the third spacer as a feeler gauge to check the gap between the string and roller surfaces at the following frame transitions:
    i. Left Frame to Main Frame
    ii. Main Frame to Right Frame
d. Compare the transition-point measurements to the reference height established at the ends of the machine.
e. If a measurement differs from the reference height, locate the support foot beneath the affected frame section.
f. Position a pallet jack beneath the frame to support and adjust its height. Loosen the mounting bolts on the support foot.
g. Adjust the frame vertically with the pallet jack:
    i. **Raise** the frame to **decrease the gap.**
    ii. **Lower** the frame to **increase the gap**.
h. Retighten bolts and recheck the gap between the string and the rollers.
i. Repeat until all measured gaps match the reference height at the ends.
j. Remove the string line and spacers.
k. Operate the SWS410 and perform a test cut to verify proper material feeding, positioning, cutting, and overall machine function.
l. Alignment procedure is complete.

Service/Troubleshooting

For technical support or replacement parts, contact Safety Speed Manufacturing by phone or email, or visit our website:

Phone: (763) 755-1600

Email: sales@safetyspeed.com

Website: www.safetyspeed.com

Please have your serial number available when requesting service or ordering parts.

The serial tag is located in two places: on the back of the control panel enclosure and inside the control panel enclosure.

Refer to the separate replacement parts information for parts diagrams and ordering information.

For the latest SWS410 information, including machine specifications, operating instructions, trouble-shooting, supplies, and a digital copy of this manual, visit the SpeedWorx website using the URL or QR code below.

www.SpeedWorxSaw.com

Replacement Parts

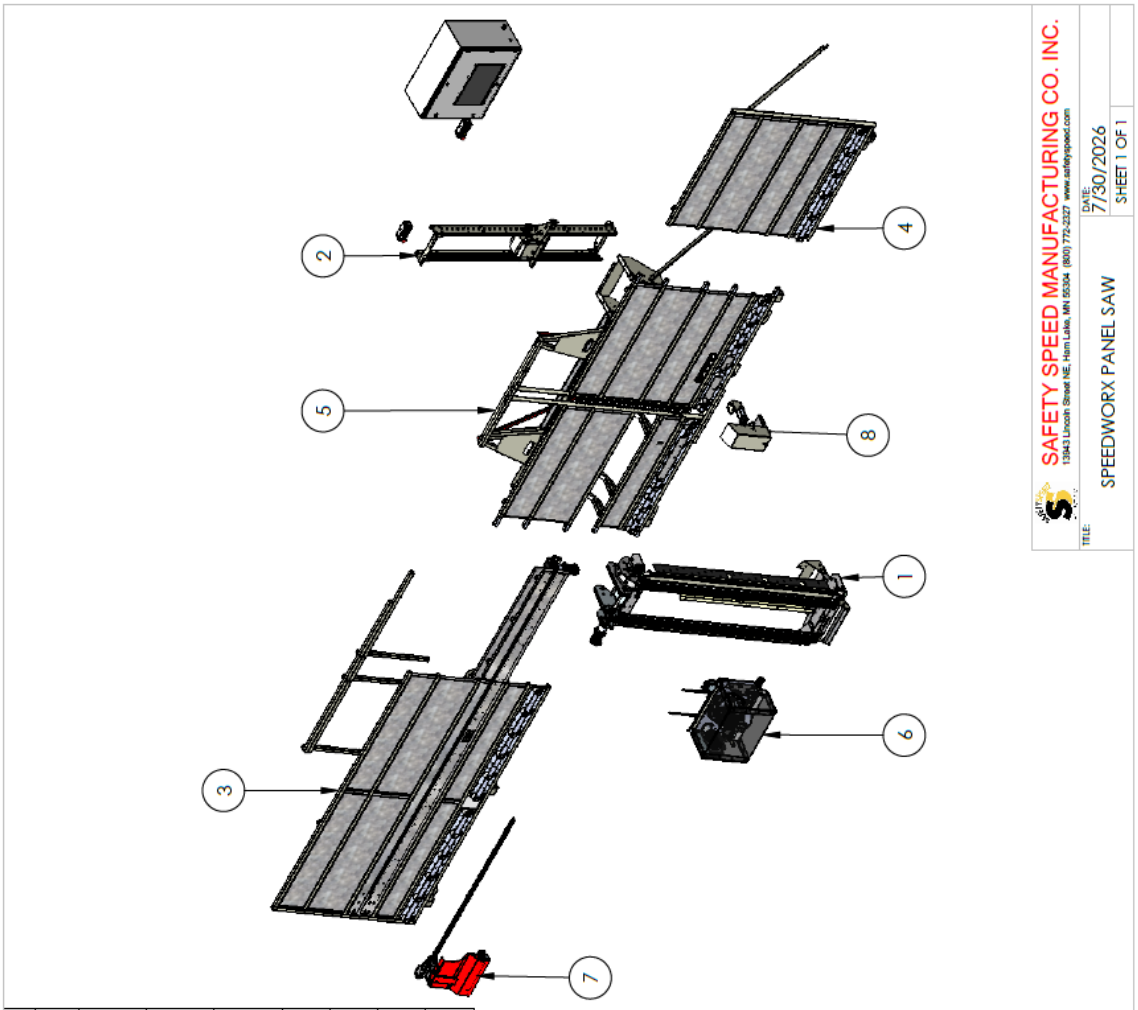
For proper fit, function, and safe operation, use only replacement parts supplied or approved by Safety Speed Manufacturing. Exploded views are provided below for each major section of the machine to help identify replacement parts and their corresponding part numbers. Use these illustrations as a reference when identifying parts or contact Safety Speed Manufacturing for assistance.

To order replacement parts, contact Safety Speed Manufacturing by phone, email, or through our web-site. Please have your machine model and serial number available when requesting parts.

The table below lists common replacement parts for your convenience.

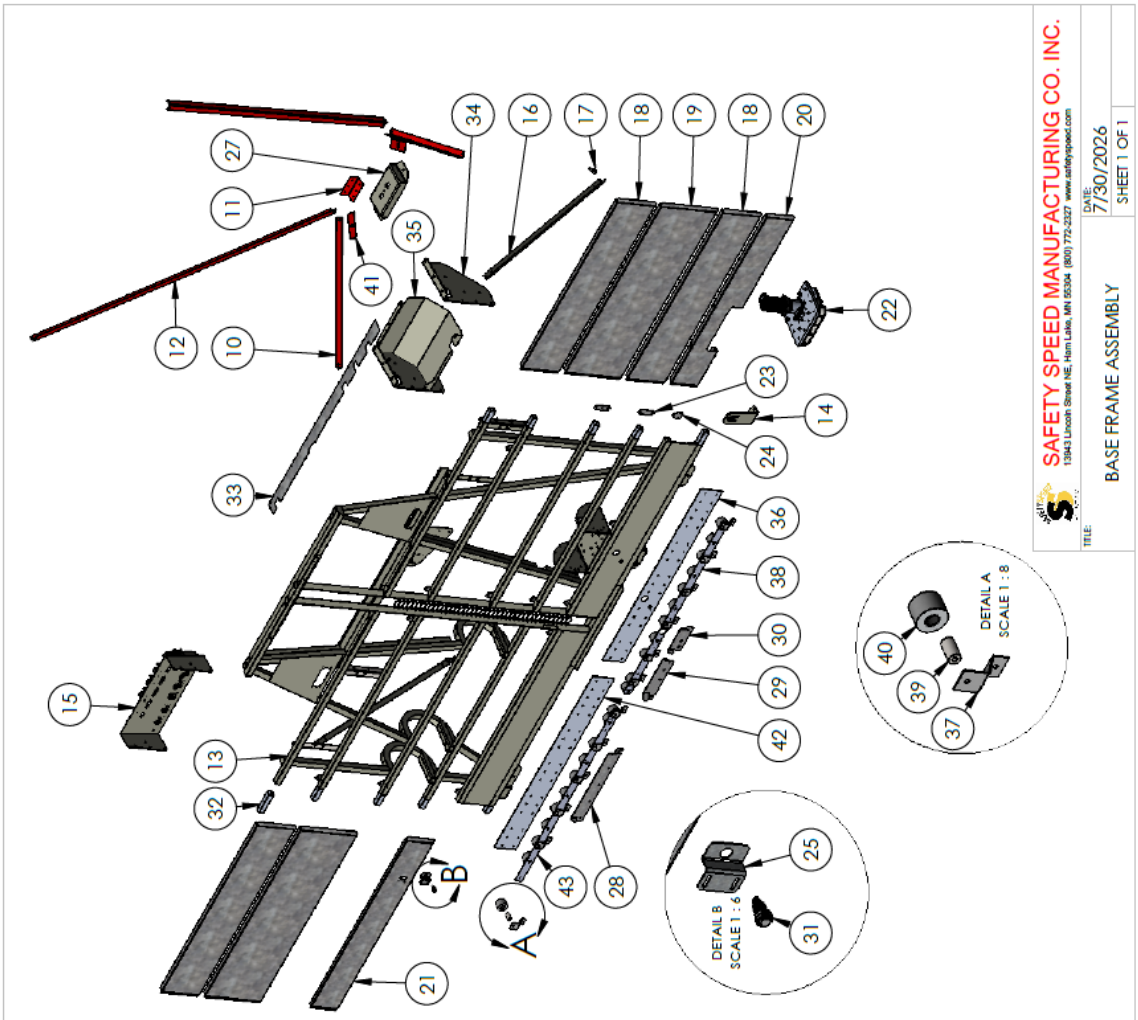
Description	Part No.		Description	Part No.
Ink Cartridge	SWP93-INK		Gripper Belt (White/Long)	SW342-0010
Saw Blade	SW691-0076		Solenoid Valve	SW362-0009
Saw Motor Belt	SW342-0008		Linear Slider Block	SW315-0005
X-Track Belt (White/Short)	SW342-0006		Photoelectric Sensor	SW446-0014

SpeedWorx Exploded View



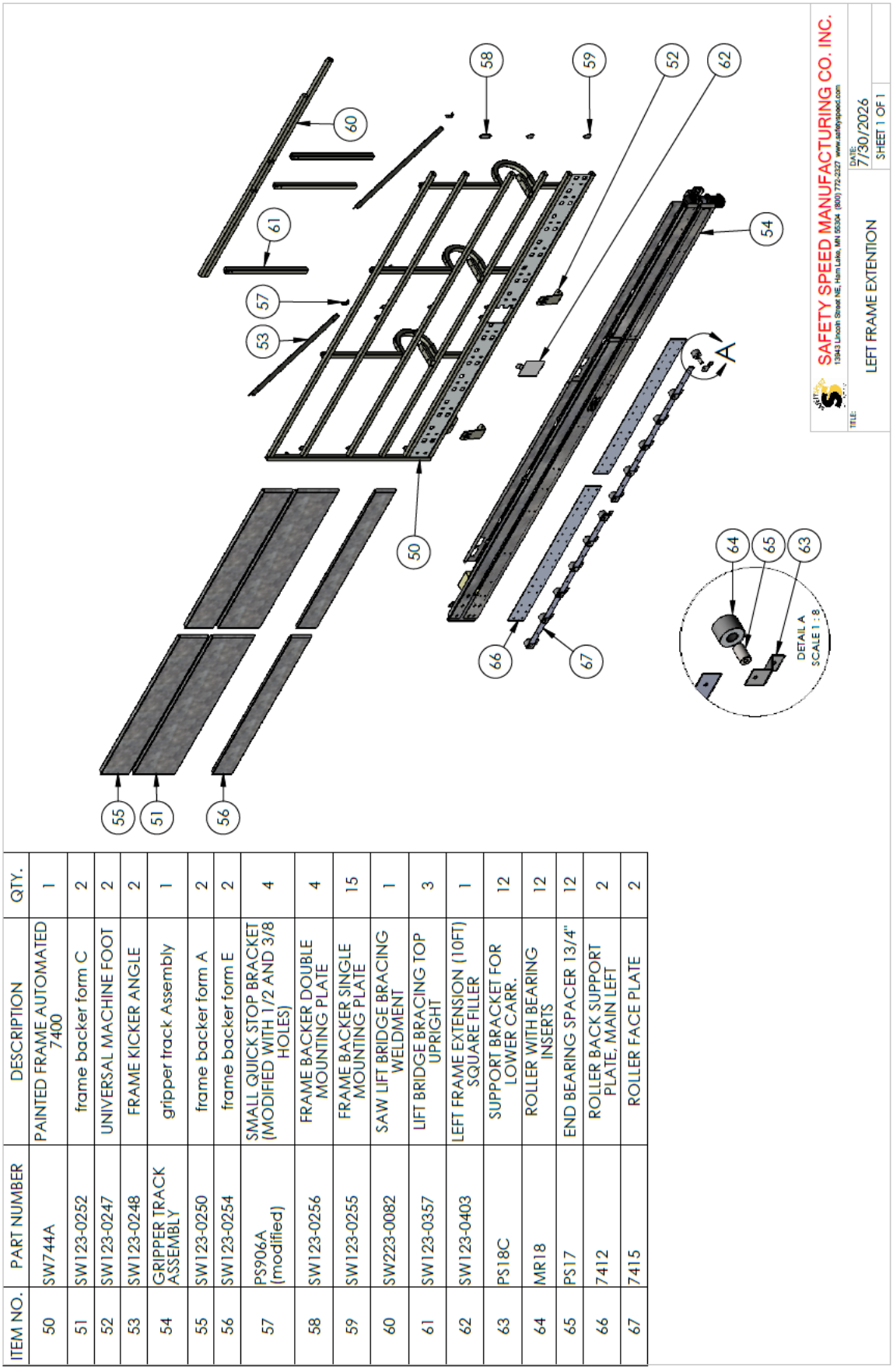
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Y-AXIS TRACK ASSEMBLY	Y-AXIS TRACK AND DUST PAN	1
2	GUIDED COUNTERWEIGHT ASSEMBLY	COUNTERWEIGHT TRACK	1
3	LEFT FRAME EXTENTION	LEFT FRAME EXTENTION	1
4	RIGHT FRAME EXTENSION	RIGHT FRAME EXTENTION	1
5	BASE FRAME ASSEMBLY	BASE FRAME ASSEMBLY	1
6	SAW CARRIAGE ASSEMBLY	FULL SAW CARRIAGE ASSEMBLY	1
7	GRIPPER WAGON ASSEMBLY	X-AXIS GRIPPER WAGON	1
8	PINCH WHEEL ASSEMBLY	PINCH WHEEL ASSEMBLY	1

Main Frame Assembly



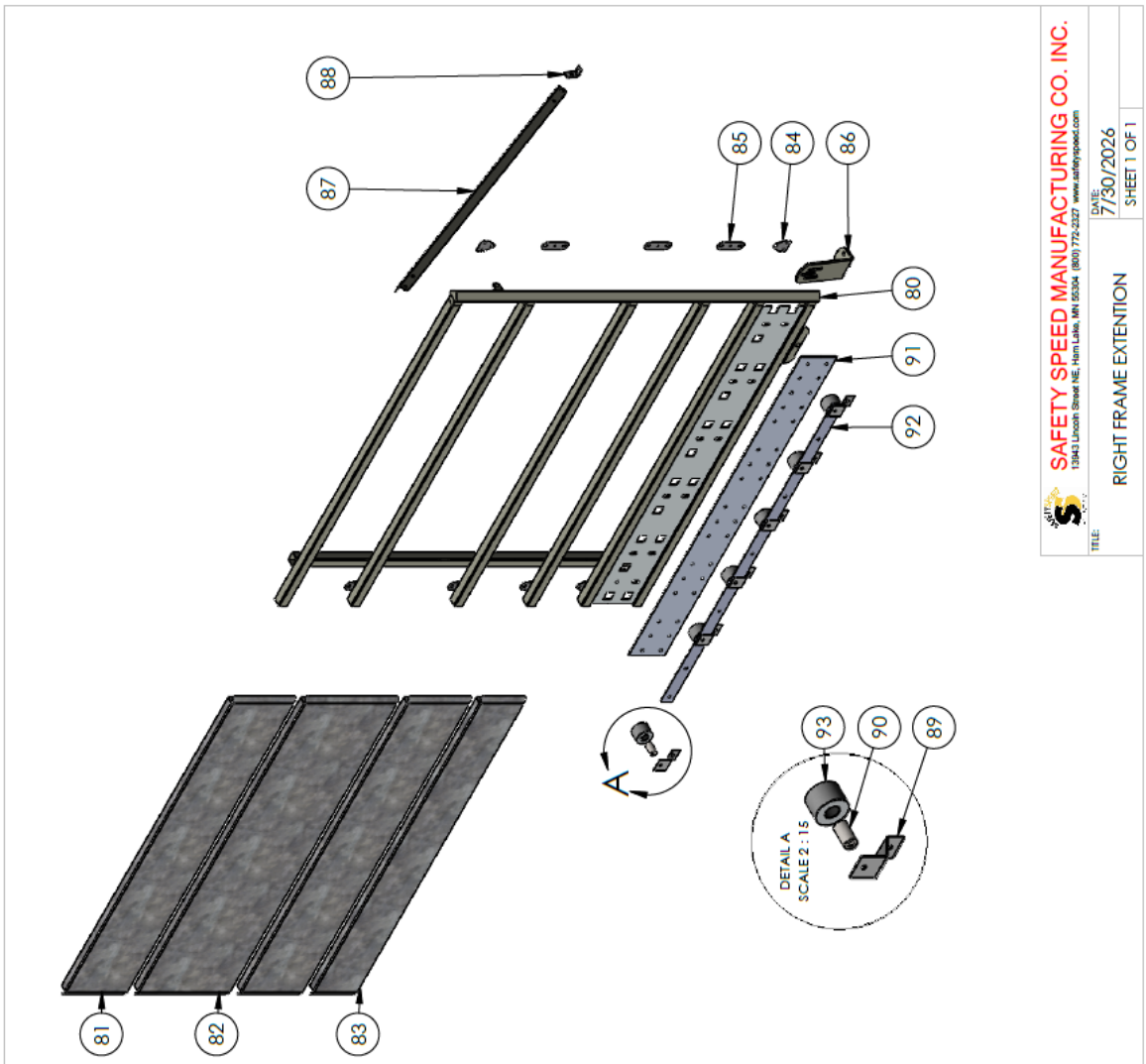
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
10	746	LOWER STAND SUPPORT ANGLE	2
11	745	6" STAND ANGLE BRACKET	1
12	743	DIAGONAL STAND ANGLE	2
13	SW744A	PAINTED FRAME AUTOMATED 7400	1
14	SW123-0247	UNIVERSAL MACHINE FOOT	4
15	VALVE NEST ASSEMBLY	VALVE NEST	1
16	SW123-0248	FRAME KICKER ANGLE	2
17	PS906A (modified)	SMALL QUICK STOP BRACKET (MODIFIED WITH 1/2" AND 3/8 HOLES)	2
18	SW123-0251	FRAME BACKER FORM B	3
19	SW123-0253	FRAME BACKER FORM D	2
20	SW123-0260	FRAME BACKER FORM G	1
21	SW123-0257	FRAME BACKER FORM F	1
22	X-TRACK BELT ASSEMBLY	X TRACK BELT ASSEMBLY	1
23	SW123-0256	FRAME BACKER DOUBLE MOUNTING PLATE	10
24	SW123-0255	FRAME BACKER SINGLE MOUNTING PLATE	10
25	SW123-0350	BACKER PHOTO EYE MOUNT ANGLE, 18MM STYLE	1
26	SW491-0011	R55 25MM X 67MM BLACK PLASTIC CABLE WIRE CARRIER	1
27	123-0325	SAW TAIL RAISE FORM	1
28	SW123-0345	ROLLER GUIDE RAIL (A)	1
29	SW123-0344	ROLLER GUIDE RAIL (B)	1
30	SW123-0343	ROLLER GUIDE RAIL (C)	1
31	SW446-0014	TUBULAR CONTRINEX PHOTOELECTRIC EYE	1
32	7496 (modified)	XL -ARM EXT. 1 11/32 SQ. X 24 (CUT TO 6")	10
33	SW123-0289	COVER FOR WIRE TROUGH	1
34	SW123-0323	HMI ENCLOSURE MOUNT FORM	2
35	SW123-0324	HMI WIRE COMPARTMENT SHELF	1
36	7412 (Speedworx RH Side)	ROLLER BACK SUPPORT PLATE, MAIN RIGHT	1
37	PS18C	SUPPORT BRACKET FOR LOWER CARR.	12
38	7415	ROLLER FACE PLATE	1
39	PS17	END BEARING SPACER 13/4"	22
40	MR18	ROLLER WITH BEARING INSERTS	22
41	747	LOWER STAND CANISTER BRACKET	2
42	7412	ROLLER BACK SUPPORT PLATE, MAIN LEFT	1
43	7415	ROLLER FACE PLATE	1

Left Frame Assembly



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
50	SW744A	PAINTED FRAME AUTOMATED 7400	1
51	SW123-0252	frame backer form C	2
52	SW123-0247	UNIVERSAL MACHINE FOOT	2
53	SW123-0248	FRAME KICKER ANGLE	2
54	GRIPPER TRACK ASSEMBLY	gripper track Assembly	1
55	SW123-0250	frame backer form A	2
56	SW123-0254	frame backer form E	2
57	PS906A (modified)	SMALL QUICK STOP BRACKET (MODIFIED WITH 1/2 AND 3/8 HOLES)	4
58	SW123-0256	FRAME BACKER DOUBLE MOUNTING PLATE	4
59	SW123-0255	FRAME BACKER SINGLE MOUNTING PLATE	15
60	SW223-0082	SAW LIFT BRIDGE BRACING WELDMENT	1
61	SW123-0357	LIFT BRIDGE BRACING TOP UPRIGHT	3
62	SW123-0403	LEFT FRAME EXTENSION (10FT) SQUARE FILLER	1
63	PS18C	SUPPORT BRACKET FOR LOWER CARR.	12
64	MR18	ROLLER WITH BEARING INSERTS	12
65	PS17	END BEARING SPACER 13/4"	12
66	7412	ROLLER BACK SUPPORT PLATE, MAIN LEFT	2
67	7415	ROLLER FACE PLATE	2

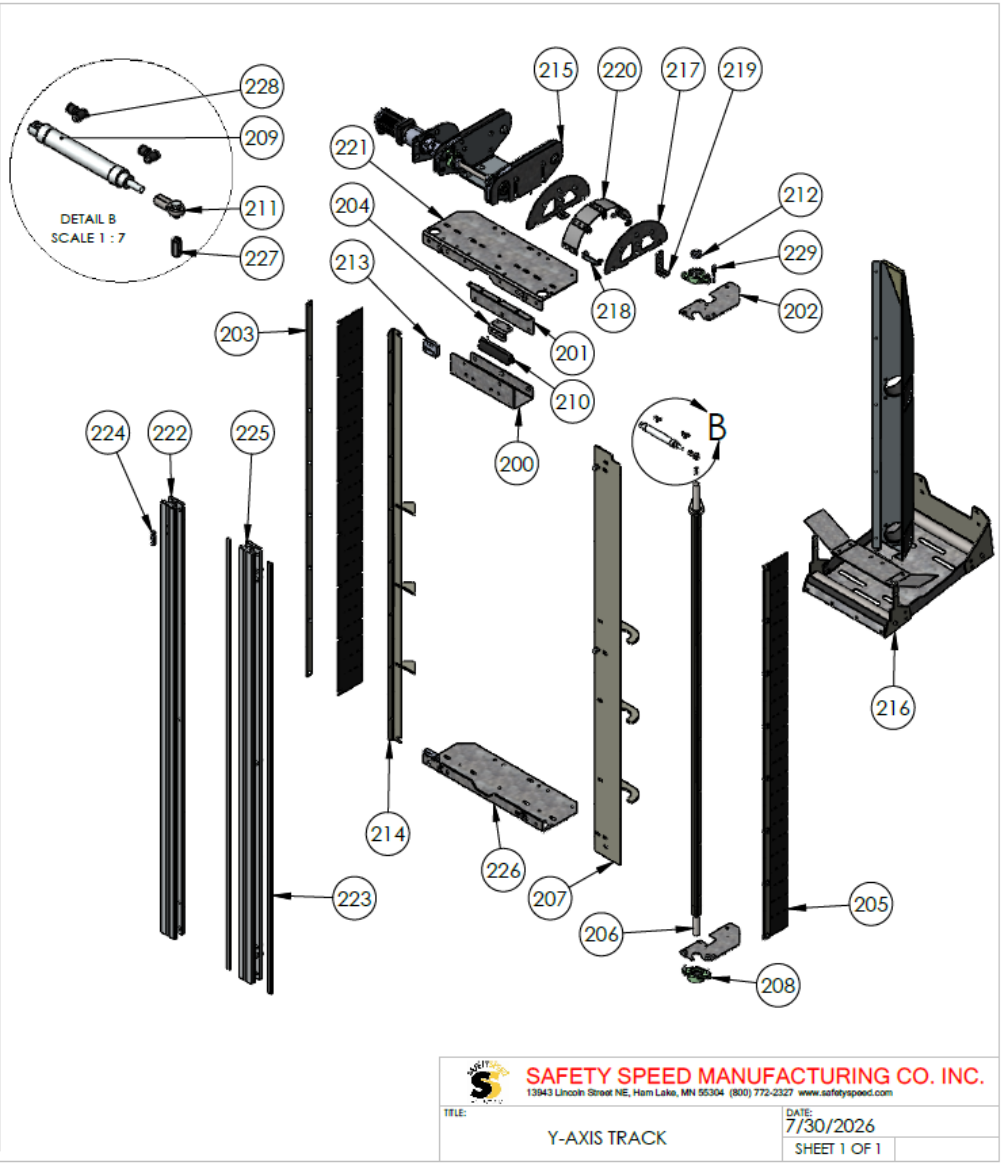
Right Frame Assembly



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
80	SW744A	PAINTED FRAME AUTOMATED 7400	1
81	SW123-0251	FRAME BACKER FORM B	2
82	SW123-0253	FRAME BACKER FORM D	1
83	SW123-0265	FRAME BACKER FORM H	1
84	SW123-0255	FRAME BACKER SINGLE MOUNTING PLATE	4
85	SW123-0256	FRAME BACKER DOUBLE MOUNTING PLATE	6
86	SW123-0247	UNIVERSAL MACHINE FOOT	1
87	SW123-0248	FRAME KICKER ANGLE	1
88	PS906A (modified)	SMALL QUICK STOP BRACKET (MODIFIED WITH 1/2 AND 3/8 HOLES)	1
89	PS18C	SUPPORT BRACKET FOR LOWER CARR.	6
90	PS17	END BEARING SPACER 13/4"	6
91	7412	ROLLER BACK SUPPORT PLATE, MAIN LEFT	1
92	7415	ROLLER FACE PLATE	1
93	MR18	ROLLER WITH BEARING INSERTS	6

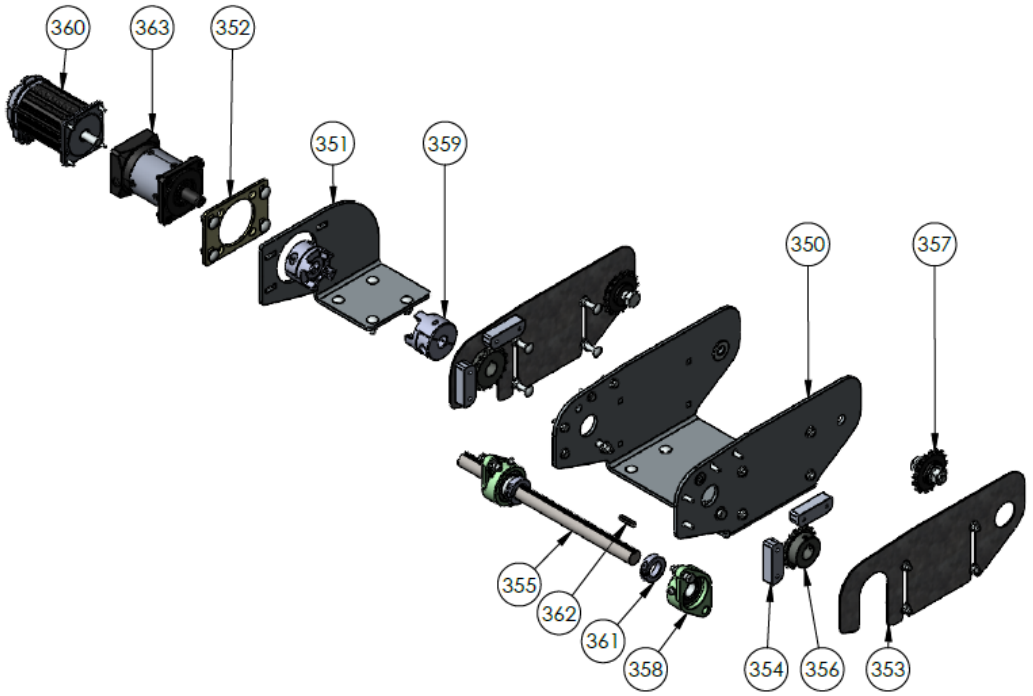
Y-Axis Track Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
200	SW123-0318	SIDE SKIRT CYLINDER FRONT COVER	1
201	SW123-0319	SIDE SKIRT CYLINDER REAR COVER	1
202	SW123-0311	SIDE SKIRT BEARING PLATE	2
203	SW123-0069	SIDE SKIRT HOLD DOWN STRIP	2
204	SW123-0317	SIDE SKIRT CYLINDER ANGLE	1
205	SW123-0089	NEPRENE RUBBER SIDE SKIRT, 6" X 6", 1/8" THICK	2
206	SW223-0077	SIDE SKIRT SWING WELDMENT	1
207	SW223-0076	OUTBOUND SIDE DIVERTER WELDMENT	1
208	SW315-0017	1", 2 BOLT FLANGE BEARING, CASING	2
209	SW363-0035	MAL 25 X 100, 25MM BORE 100MM	1
210	SW491-0024	TRUE MODS 2PC 7" ULTRA-SLIM SI	1
211	SW363-0033	BALL JOINT ROD END, FM-M10*1.2	1
212	0403739	CLAMPING SHAFT COLLAR. 1" ID, 1-3/4" OD	1
213	SW123-0132	SIDE SKIRT BLOCK	2
214	SW223-0075	INBOUND SIDE DIVERTER WELDMENT	1
215	DUAL CHAIN Y-AXIS ASSEMBLY	Y-AXIS DUAL CHAIN ASSEMBLY	1
216	DUST COLLECTON ASSEMBLY	DUST COLLECTION AND ROLLERS	1
217	SW123-0259	SIDE PLATE FOR CABLE ARCH	2
218	123-0263	ANCHOR CHANNEL - UHMW SLIDE FOR CABLE CARRIER	5
219	123-0288	ANGLE MOUNT FOR CABLE CARRIER	2
220	123-0264	UHMW SLIDE FOR TOP CABLE CARRIER	1
221	7427	TOP CARRIAGE END BRACKET	1
222	7437-B	7400 H BEAM FINISHED	1
223	PS524	BEARING TRACK	4
224	SW123-0358	Y-AXIS HOMING STOP BLOCK	1
225	7437	7400 H BEAM FINISHED	1
226	7435	BOTTOM CARRIAGE END BRACKET	1
227	90264A113	3/8-16 x L1-1/8 x W5/8 COUPLING NUT, ZINK PLATED	1
228	SW361-0069	RPH08-01G AIR FITTING ELBOW	2
229	446-0003	PROX SENSOR 12MM QD SHORT BODY 4MM FLUSH SENSING DISTANCE	1



Y-Axis Chain Assembly

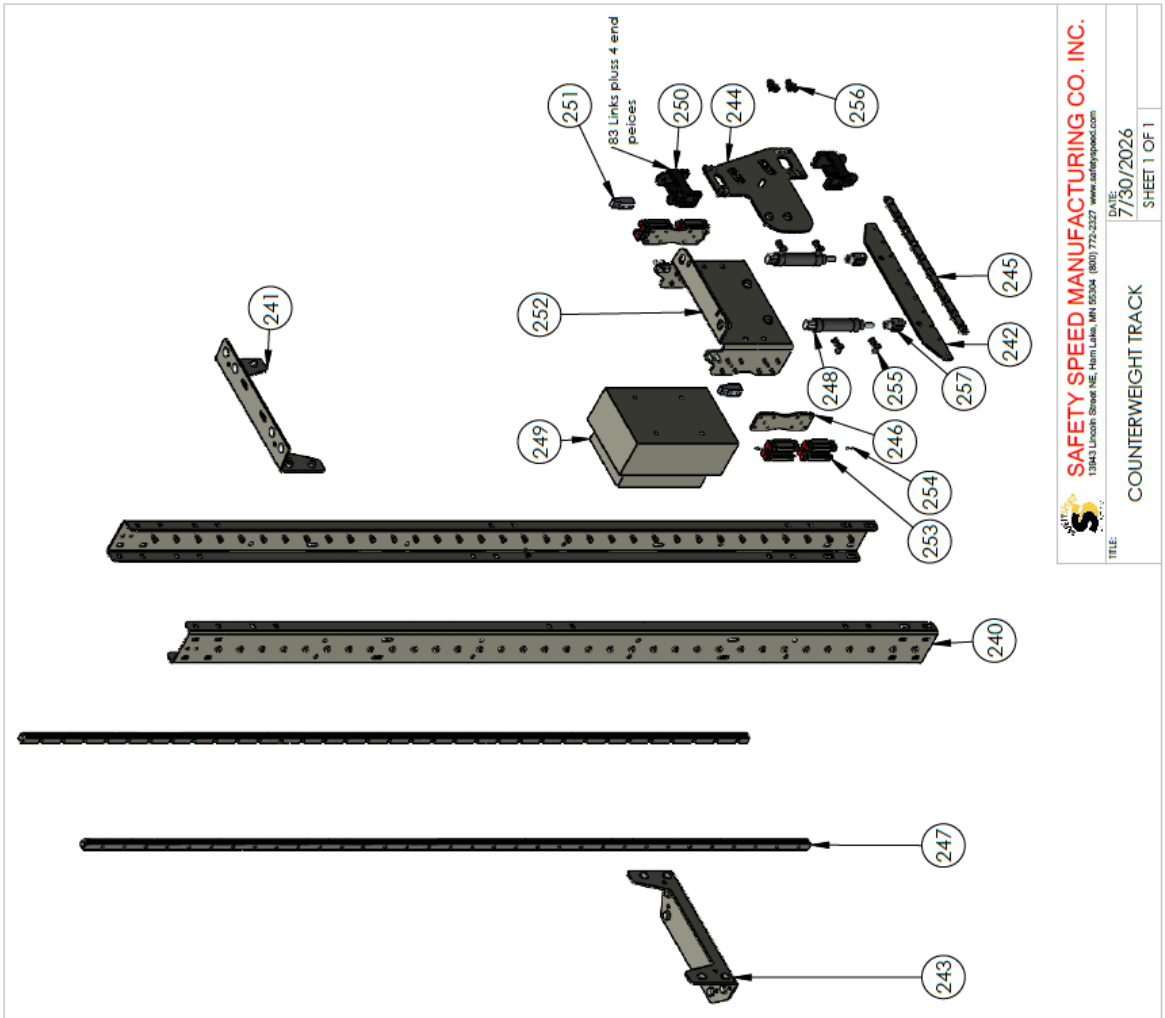
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
350	SW123-0172	Y-AXIS DUAL CHAIN MAIN CHANNEL	1
351	SW123-0174	Y-AXIS SERVO MOUNT ANGLE	1
352	SW123-0173	Y-AXIS SERVO MOUNT ANGLE	1
353	SW123-0300	Guard plate for Y-axis chains over top of machine	2
354	SW123-0176 revB	CHAIN JUMP GUARD	4
355	SW391-0001	1 IN X 6 FT KEYED ROTARY SHAFT	1
356	SW321-0018	ROLLER CHAIN SPROCKET (40B17F1"DIAMETER)	2
357	WB52	FLAT IDLER SPROCKET FOR ANSI 40 CHAIN, 17 TEETH, FOR 5/8" DIAMETER	2
358	SW315-0017	1", 2 BOLT FLANGE BEARING, CASING	2
359	SW312-0007	COUPLING FOR Y-AXIS GEARBOX	1
360	SW421-0007	CLEARPATH INTEGRATED SERVO MOTOR, SDSK	1
361	0403739	CLAMPING SHAFT COLLAR. 1" ID, 1-3/4" OD	2
362	0989886 (modified)	1/4" Square Key Stock 12" Length cut to 3"	2
363	SW311-0003	PLANETARY GEARBOX REDUCER, 7:1 (NO KEY)	1



SAFETY SPEED MANUFACTURING CO. INC.
13943 Lincoln Street NE, Ham Lake, MN 55304 (800) 772-2327 www.safetyspeed.com

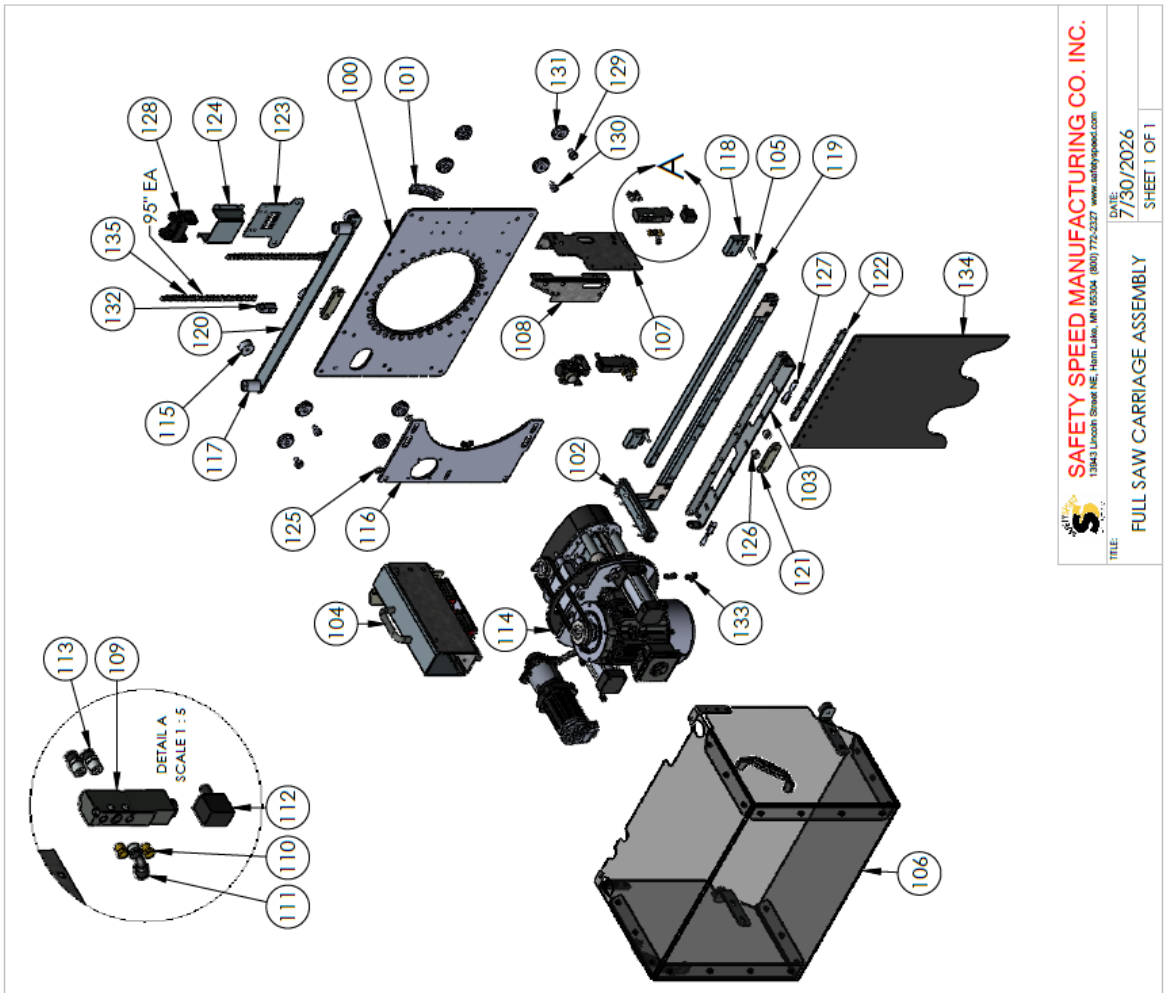
TITLE:	DATE:
DUAL CHAIN Y-AXIS ASSEMBLY	7/30/2026
	SHEET 1 OF 1

Guided Counterweight



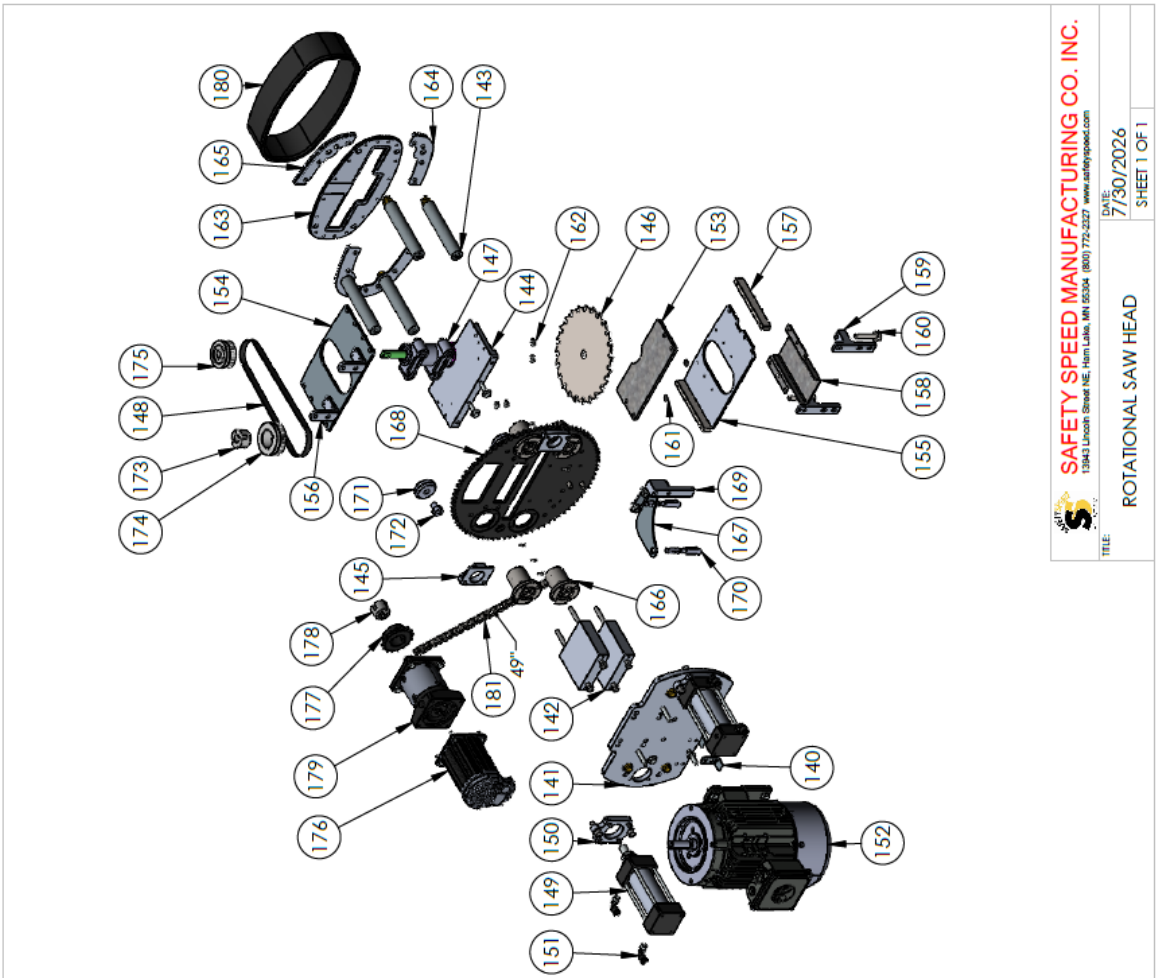
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
240	SW123-0160	CW LINEAR GUIDE CHANNEL	2
241	SW123-0161	LINEAR GUIDE CHANNELS UPPER PLATE	1
242	SW123-0004	BELT END PLATE	1
243	SW123-0163	LINEAR GUIDE CHANNELS LOWER MOUNTING ANGLE	1
244	SW123-0169	CARRIAGE CABLE CARRIER MOUNTING PLATE	1
245	SW123-0005	COUNTERWEIGHT BELT PINCH PATE	1
246	SW123-0326	CW HIWIN SPACER PLATE	2
247	SW123-0007	HIWIN LINEAR GUIDE RAIL-[20mm] x [2M]	2
248	SW363-0013	TAILONZ PNEUMATIC 25mm BORE 50MM STROKE AIR CYLINDER	2
249	SW74102	7400 COUNTERWEIGHT (127 LBS)	1
250	SW491-0011	R55 25MM X 57MM BLACK PLASTIC CABLE WIRE CARRIER	2
251	SW123-0170-B	COUNTERWEIGHT CHAIN ANCHOR BLOCK	2
252	SW223-0051	CW WONDER FORM WELDMENT	1
253	SW315-0005	HIWIN [20MM] GUIDE BLOCK NARROW	4
254	GFT/6/0.75 Fitting	GREASE FITTING STRAIGHT, M6 x 0.75MM THREAD	4
255	SW361-0069	RPH08-01G AIR FITTING ELBOW	4
256	SW361-0055	DUAL OUTLET PARALLEL Y (RPY-8)	2
257	SW363-0013	CLEVIS END FOR MALE 25 CYLINDER	2

Saw Carriage Assembly



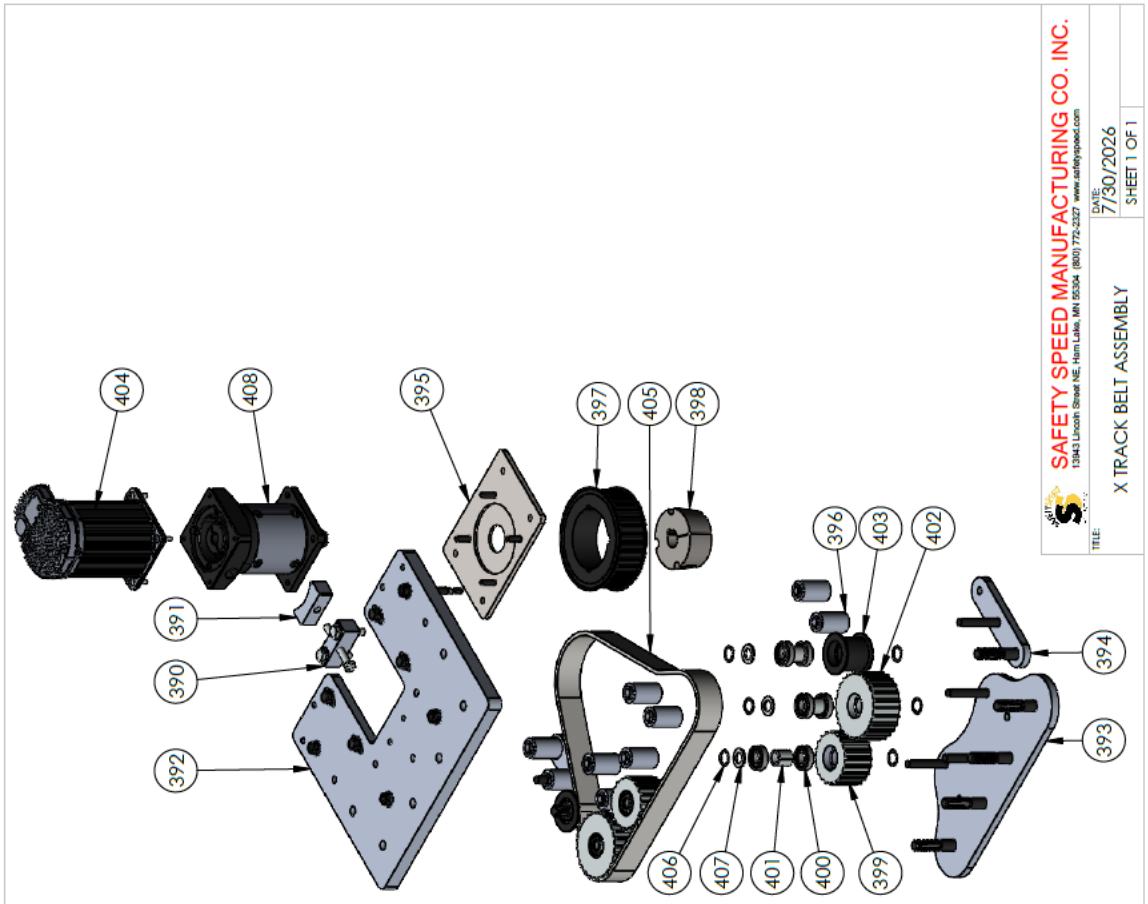
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
100	SW123-0043	CARRIAGE BASE PLATE	1
101	SW123-0222	V INSERT, FOR C-AXIS GUIDEWAY	9
102	SW223-0050	Squid Printer Speedworx Full Assembly	1
103	SW123-0220	WIRE ROUTING ANGLE FOR CARRIAGE	1
104	SWA-P93	PRINTER ADD-ON ASSEMBLY	1
105	98381A628	Dowel Pin Alloy Steel, 3/8" Diameter, 1-1/2" Long	2
106	DOG HOUSE ASSEMBLY	CARRIAGE DOG HOUSE ASSEMBLY	1
107	123-0224	WIRE MANAGEMENT BASE ANGLE - CARRIAGE	1
108	123-0225	WIRE MANAGEMENT BOX MOUNT ANGLE	1
109	SW362-0009	PART-valve_4V21008bg-DESC	1
110	SW361-0039	EXHAUST BREATHER PSV-1/8	2
111	SW361-0051	1/4G O-RING TO 8MM ELBOW	1
112	SW441-0080	Valve cable, DIN B1 to M12 A-Code Axial Male cable, 24vac, NPN, 300mm cable length	1
113	SW361-0044	1/4G O-RING - 8MM STRAIGHT	2
114	SAW HEAD ASSEMBLY	Rotational full assembly (C & Z Axis base)	1
115	7466	SUPPORT SPACER	3
116	SW123-0045	CARRIAGE SERVO PLATE	1
117	SW121-0901	1.25 X 1.75" SPACER BUSHING	2
118	SW123-0216	DOWEL WELD PLATE FOR DUST BELT	2
119	SW123-0152	DUST BELT HANGER BAR	1
120	SW123-0046	CARRIAGE CAGE MOUNTING ANGLE	1
121	SW123-0051	C-AXIS STOP	2
122	SW123-0006	COUNTERWEIGHT BELT PINCH PLATE	1
123	SW123-0261	CABLE CARRIER ANCHOR PLATE AT CARRIAGE	1
124	SW123-0337	GUARD COVER CABLE CARRIER TO CARRIAGE	1
125	SW123-0048	SERVO PLATE SPACER SMALLER	2
126	SW123-0050	C-AXIS STOP SPACER (92510A801)	4
127	446-0003	PROX SENSOR 12MM QD SHORT BODY 4MM FLUSH SENSING DISTANCE	2
128	SW491-0011	R55 25MM X 57MM BLACK PLASTIC CABLE WIRE CARRIER	1
129	7460	OFF CENTER BUSHING (BX3SS)	4
130	7461	ON CENTER BUSHING (B3SS)	4
131	7462	BALL BEARING (W3X)	8
132	SW123-0170-F	COUNTERWEIGHT CHAIN ANCHOR BLOCK	2
133	SW361-0055	DUAL OUTLET PARALLEL Y (RPY-8)	2
134	123-0088(section)	DUST BOX MAIN BELT	1
135	SW322-0010	#40R-SL (Peer SL series) Roller Chain	2

Saw Head Assembly



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
140	SW123-0031	ANGLE TAB SENSOR FLAG BRACKET	2
141	SW123-0026	Z-AXIS TOOLING PLATE, MOTOR MOUNT PLATE	1
142	SW123-0028	ARBOR SPACER BLOCK - Z-AXIS STYLE	2
143	SW123-0027	Linear shaft Z-axis motion 25mm hardened chrome	4
144	SW123-0230	BLADE SHROUD BASE	1
145	SW123-0240	STOP BLOCK - Z AXIS PLUNGE DEPTH	2
146	SW691-0076	SW SAW BLADE, 8" DIAMETER, 5/8" OPENING, 24 TEETH	1
147	7459	SAW ARBOR	1
148	SW342-0008	270J6 AMETRIC ANSI POLY-V BELT	1
149	SW363-0006	SC50 X 75 TIE ROD AIR CYLINDER	2
150	SW123-0029	MOUNT PLATE FOR SC50 AIR CYLINDER	2
151	SW361-0051	1/4G O-RING TO 8MM ELBOW	4
152	SW421-0009	3HP TECHTOP COBRA 56 FRAME MOTOR	1
153	SW123-0231	BLADE INSIDE STOP SHROUD	1
154	SW123-0232	OUTER BLADE SHROUD - FIXED BOTTUM MOUNT	1
155	SW123-0235	OUTER BLADE SHROUD - REMOVABLE FOR BLADE CHANGE	1
156	SW123-0233	MOUNT ANGLE FOR OUTER SHROUD PLATES - UNIVERSAL	2
157	SW123-0234	OUTER SHROUD SIDE CLOSURE BAR	2
158	SW123-0239	SHROUD CHANNEL - ARBOR NUT COVER	1
159	SW123-0332	SHROUD CAPTURE BRACKET	2
160	902000A629	Steel Knurled-Head Thumb Screw	2
161	SW591-0046	ADHESIVE-BACK BUMPERS (8771K81)	2
162	SW591-0047	NEODYMIUM MAGNET COUNTERSUNK	4
163	SW123-0333	FOOTBALL BASE PLATE	1
164	SW123-0334(L)	BRUSH RETENTION CLIP (LH)	2
165	SW123-0334(R)	BRUSH RETENTION CLIP (RH)	2
166	SW332-0006	25MM FLANGE-MOUNTED LINEAR BALL BEARING	4
167	SW123-0030	PROX BRACKET FOR Z-AXIS EXTEND	1
168	Sw123-0024-revC	40A80 A PLATE SPROCKET	1
169	SW123-0023	HOMING STOP BLOCK FOR C-AXIS	1
170	446-0003	PROX SENSOR 12MM QD SHORT BODY 4MM FLUSH SENSING DISTANCE	2
171	7462	BALL BEARING (W3X)	4
172	7460	OFF CENTER BUSHING (BX3SS)	4
173	7446	BUSHING 5/8" (DODGE BEARING)	2
174	7447B	V PULLEY MOTOR SHEAVE (6) NEW	1
175	7455B	V ARBOR SHEAVE 5/8" (6) NEW	1
176	SW421-0007	CLEARPATH INTEGRATED SERVO MOTOR, SDSK	1
177	SW321-0011	TAPER-LOCK BUSHING-BORE SPROCKET	1
178	SW321-0016	TAPER LOCK BUSHING 1008 X 20MM	1
179	SW311-0005	PLANETARY GEARBOX REDUCER , 7:1	1
180	SW691-0042	EASY CUT 3" BRUSH MATERIAL, CUT TO 30"	1
181	SW322-0010	#40R-SL (Peer SL series) Roller Chain	1

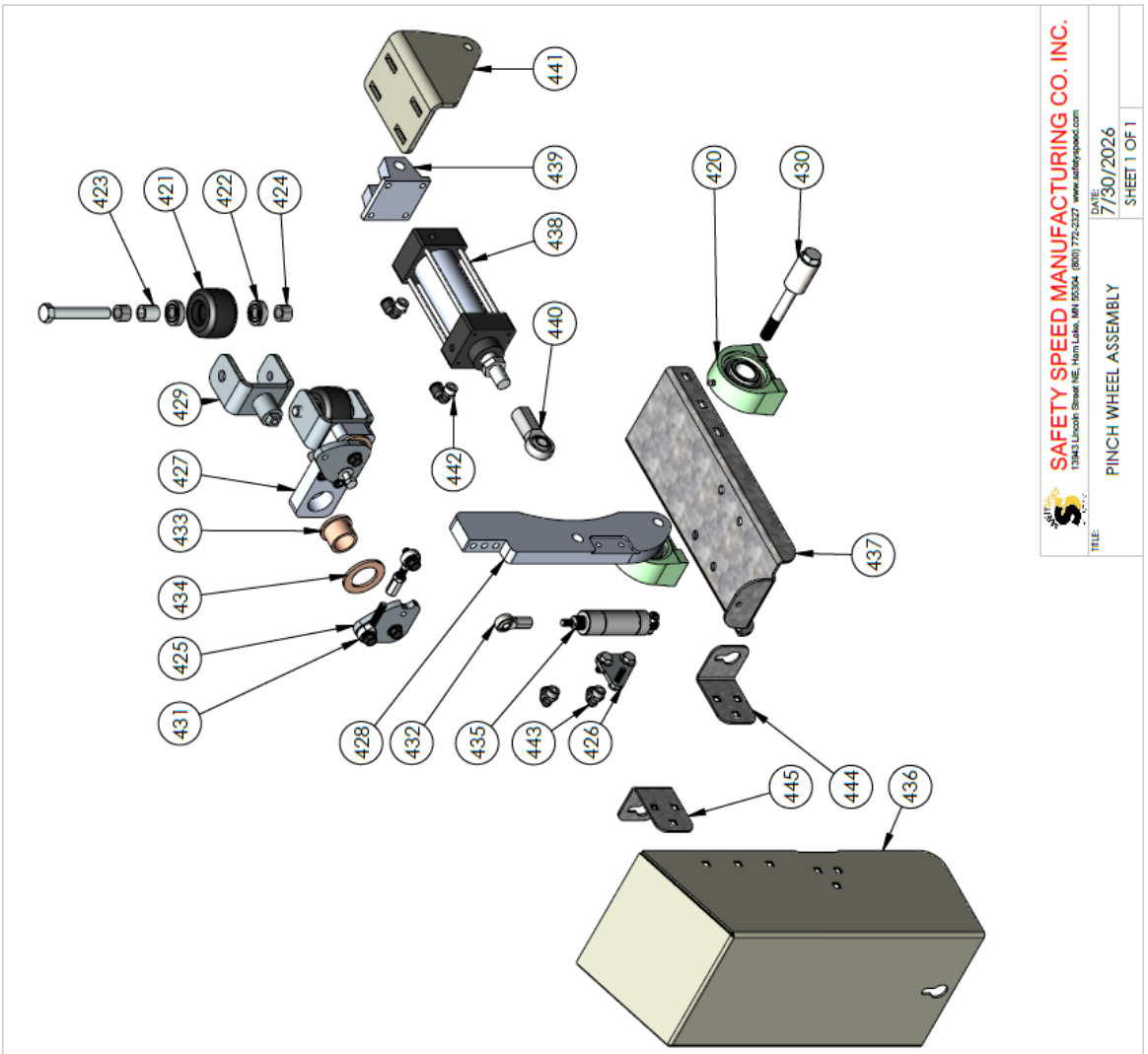
X-Track Assembly



SAFETY SPEED MANUFACTURING CO. INC.
13943 Lincoln Street NE, Ham Lake, MN 55304 (800) 772-2327 www.safetyspeed.com
TITLE: X TRACK BELT ASSEMBLY
DATE: 7/30/2026
SHEET 1 OF 1

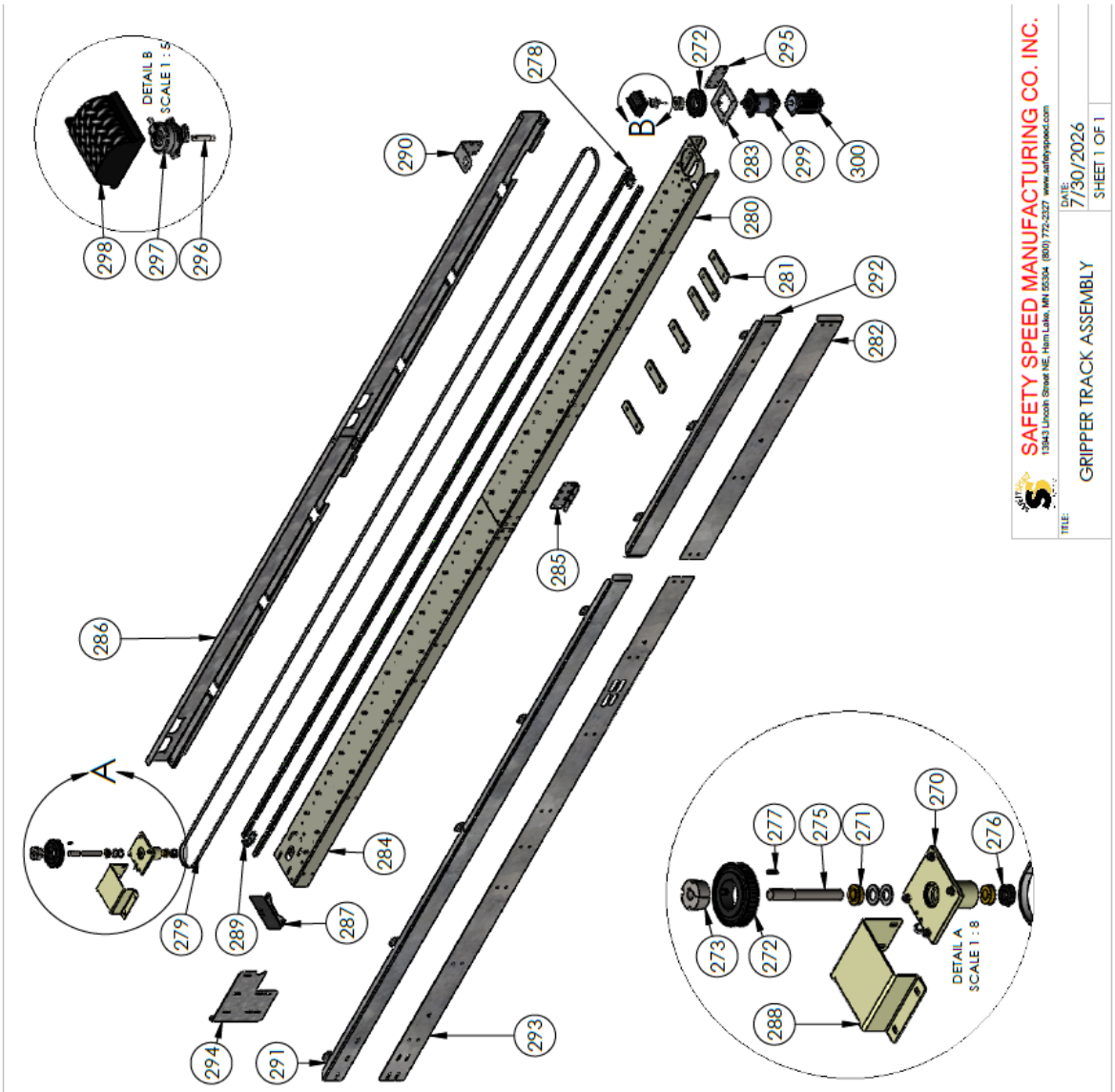
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
390	SW123-0101	TENSION BLOCK FOR X TRACK	1
391	SW123-0331	TENSION PAD FOR GEARBOX (X-TRACK)	1
392	SW123-0104	X TRACK MAIN CHASSIS BASE PLATE	1
393	SW123-0106	X track tie support for main pulleys	1
394	SW123-0099	GUIDE ROLLER CAPTURE PLATE	2
395	SW123-0105	GEARBOX SUB-PLATE FOR X TRACK	1
396	SW123-0107	SPACER BUSHING FOR X TRACK CHASSIS	9
397	SW321-0015	MÄDLER TIMING BELT PULLEY FROM STEEL AT10 BELT	1
398	SW321-0017	TAPER-LOCK BUSHING, STYLE 2012	1
399	SW321-0009	PULLEY AT10 X 20 TOOTH, 37MM OVERALL WIDTH, BORED FOR R8 BEARINGS, NO FLANGES	2
400	SW315-0011	R8-2RS C3 EMQ PREMIUM RUBBER SEALED BALL BEARNG 1/2ID x 1-1/8"OD	12
401	SW691-0027	STEAL SLOTTED UNTHREADED SPACERS	6
402	SW321-0010	AT10 PULLEY, 25 TOOTH 37MM WIDTH	2
403	SW123-0109	CROWED GUIDE ROLLER FOR X TRACK	2
404	SW421-0007	CLEARPATH INTEGRATED SERVO MOTOR, SDSK	1
405	SW342-0006	SPEEDWORKS AT10 BELT, 32MM x 890MM	1
406	SW525-0025	SPRING STEEL SHIMS FOR SCREW SHOULDER, 0.032" THICK	12
407	SW391-0012	SHIM WASHER, 1/2 ID, 7/8 OD	6
408	SW311-0005	PLANETARY GEARBOX REDUCER ,7:1	1

Pinch Wheel Assembly



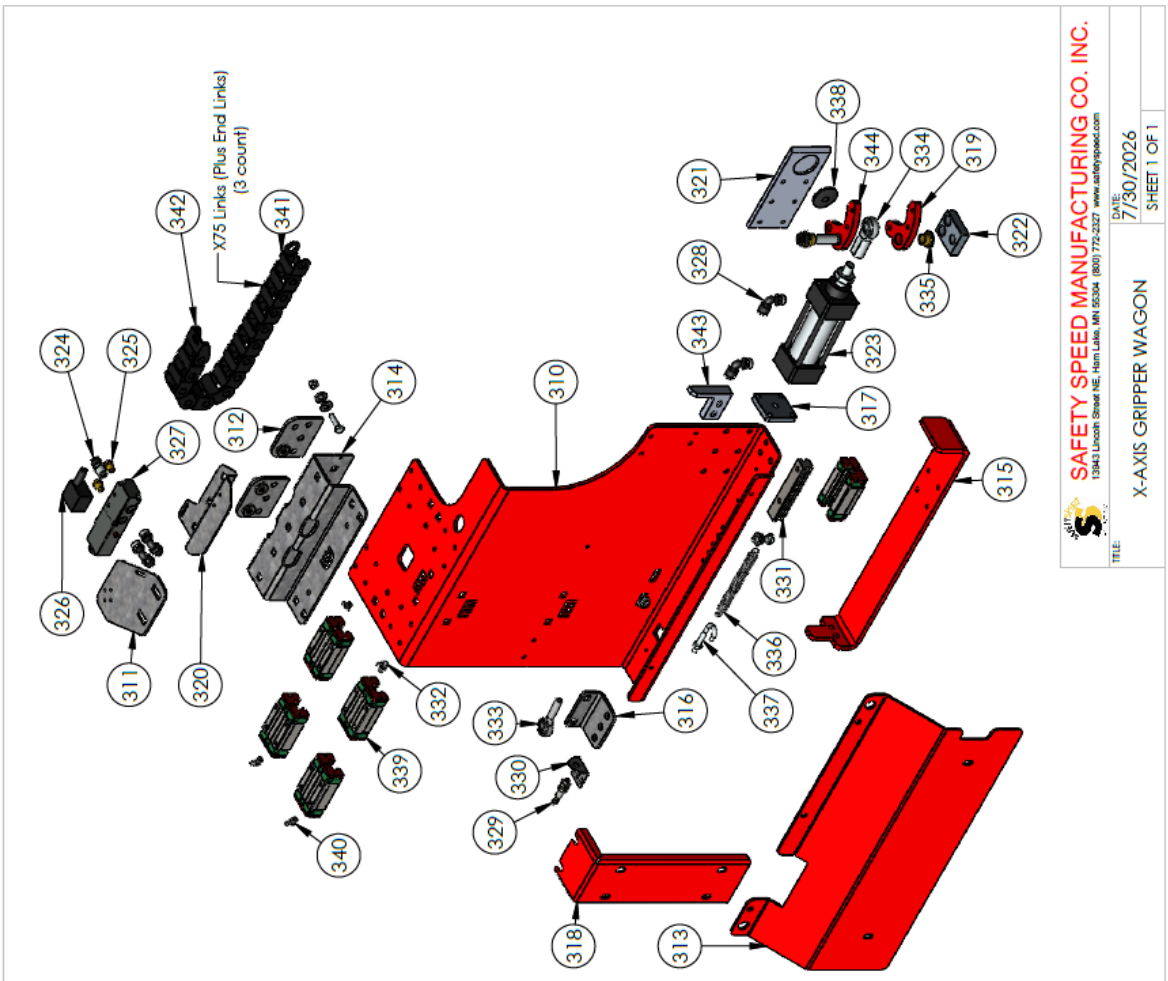
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
420	SW315-0009	1" TAPPED BASE PILLOW BLOCK B	2
421	SW123-0098	PINCH WHEEL	2
422	SW315-0011	R8-2RS C3 EMQ PREMIUM RUBBER SEALED BALL BEARNG 1/2ID x 1-1/8"OD	4
423	SW691-0027	STEAL SLOTTED UNTHREADED SPACERS	2
424	93441A473	STEEL ZINCH SLOTTED UNTHREADED	4
425	SW123-0095	ROTATING RING FOR ARTICULATING	2
426	SW123-0272B*	CANT CYLINDER MOUNT PLATE	1
427	SW123-0097	PINCH WHEEL BUSHING PLATE	1
428	SW123-0093	PINCH WHEEL TOMAHAWK	1
429	SW123-0400	PINCH WHEEL ARTICULATION BRACK	2
430	SW123-0157	PINCH WHEEL PIVOT SHAFT, 1"	2
431	SW391-0022	BALL JOINT ROD END, 5/16"-24 THREAD	2
432	SW391-0011	5/16-24 BALL JOINT ROD END FEMALE	1
433	SW315-0010	1" BORE BRONZE BUSHING. 1" ID, 1-1/4"OD	2
434	SW315-0014	Oil-Embedded Thrust Bronze Bearing	2
435	SW363-0012	ROUND BODY AIR CYLINDER (6498K651)	1
436	SW123-0113	PINCH WHEELS GUARD BOX	1
437	SW123-0158	PINCH BEARING MOUNT FORM	1
438	SW363-0006	SC50 X 75 TIE ROD AIR CYLINDER	1
439	SW363-0018	REAR PIVOT MOUNT FOR SC50 AIR CYLINDER	1
440	SW363-0037	16MM FEMALE ROD END (FOR SC-50 AIR CYLINDER)	1
441	SW123-0283	CYLINDER MOUNT ANGLE FOR PINCH WHEEL CYLINDER SC50x75	1
442	SW361-0051	1/4G O-RING TO 8MM ELBOW	2
443	SW361-0080	8MM ELBOW (1/8 NPT)	2
444	sw123-0114	pinch wheel cover angle	1
445	SW123-0114A	pinch wheel cover angle (reverse)	1

X-Axis Track Assembly



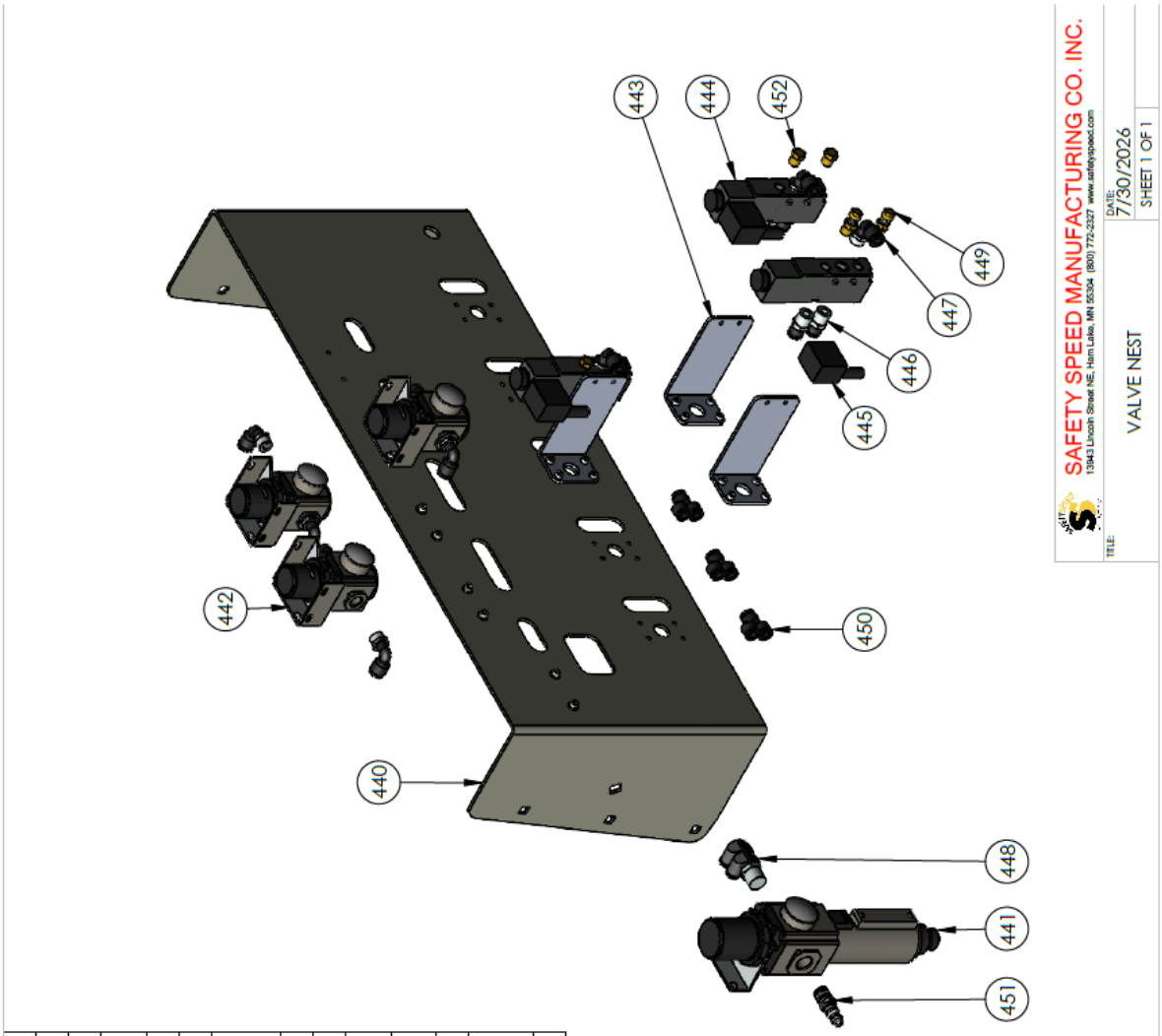
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
270	SW223-0062	WELDMENT STYLE IDLER BEARING	1
271	315-0031	XIKE FLANGED BALL BEARINGS ID 3/4" X OD 1-3/8	2
272	SW321-0022	TIMING BELT PULLEY FROM STEEL AT10 BELT	2
273	SW321-0024	TAPER-LOCK BUSHING, STYLE 1610, FOR 20MM SHAFT DIAMETER	2
274	121-0955	TENSION TAB	1
275	123-0293	IDLER SHAFT, 20MM UPPER, 3/4"	1
276	34308	Clamping Two-Piece Shaft Collar for 3/4" Diameter, Black-Oxide 1215 Carbon Steel	1
277	Gear Box Key		1
278	SW332-0013	HIWIN LINEAR GUIDE RAIL - [20MM] x [4M]	2
279	SW342-0010	AT10 BELT (16MM WIDTH) FOR GRIPPER SYSTEM	1
280	SW123-0184	GRIPPER BASE CHANNEL (R)	1
281	SW123-0188	GRIPPER CHANNEL PINCH PLATE	6
282	SW123-0190	GRIPPER LOWER DRESS COVER, 5'	1
283	SW123-0193	GRIPPER GEARBOX MOUNTING PLATE	1
284	SW123-0185	GRIPPER BASE CHANNEL (L)	1
285	SW123-0210	GRIPPER MAIN CHANNEL SPLICE ANGLE	2
286	SW123-0186	CABLE CARRIER TROUGH	2
287	SW123-0294	IDLER TENSION ANGLE	1
288	SW123-0346	X-RAIL IDLER PULLEY COVER	1
289	SW123-0295	ANGLE STOP (X-RAIL)	2
290	SW123-0298	ENCODER MOUNT FORM	1
291	SW123-0341	UPPER X-RAIL DRESS GUARD (10')	1
292	SW123-0297	UPPER X-RAIL DRESS GUARD (5')	1
293	SW123-0342	LOWER X-RAIL DRESS GUARD (10')	1
294	SW123-0044	X-RAIL DRESS GUARD TIE ANGLE	1
295	SW123-0002	ENCODER MOUNT TAP PLATE	1
296	11511080	THREADED ON ONE SIDE STUD	1
297	SW97497T511	ENCODER	1
298	SW123-0340	gripper encoder slip-on cover (3D printed)	1
299	SW311-0005	PLANETARY GEARBOX REDUCER , 7:1	1
300	SW421-0022	CLEARPATH INTEGRATED SERVO MOTOR, SDHP	1

Gripper Wagon Assembly



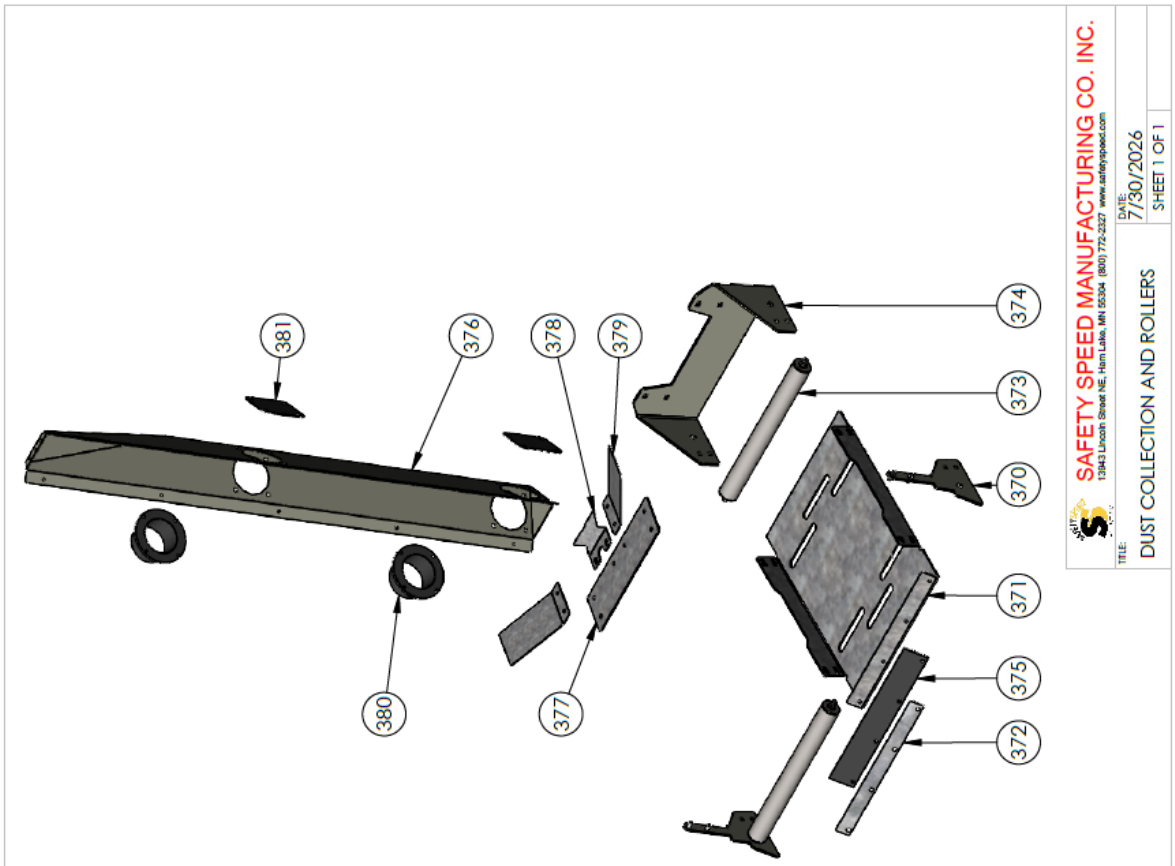
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
310	SW123-0199	GRIPPER WAGON MAIN FORM	1
311	SW123-0201	CABLE CARRIER WAGON MOUNT	1
312	SW123-0202	BELT CLAMP AT10 X 16	2
313	SW123-0296	GUARD FOR GRIPPER WAGON PINCH WORKS	1
314	SW123-0200	BELT ATTACH FORM - TIMING BELT	1
315	SW123-0204	BUMP BAR - GRIPPER WAGON	1
316	SW123-0205	CYLINDER MOUNT ANGLE	1
317	SW363-0022	ROD END ADAPTER PLATE, SC40 CYLINDER, 3/8-24 THREAD	1
318	SW123-0299	WIRE GUARD FOR GRIPPER WAGON	1
319	SW123-0206	TALON GRIP, TAPPED 5/16-18	1
320	SW123-0282	VALVE MOUNT PLATE FOR GRIPPER	1
321	SW123-0207	TALON BACKER PLATE	1
322	SW123-0209	GRIP PIVOT BASE PLATE	1
323	SW363-0032	SC40 x 50MM STROKE AIR CYLINDER. SC40x50	1
324	SW361-0044	1/4G O-RING - 8MM STRAIGHT	1
325	SW361-0039	EXHAUST BREATHER PSV-1/8	2
326	SW441-0080	Valve cable, DIN B1 to M12 A-Code Axial Male cable, 24vac, NPN, 300mm cable length	1
327	SW362-0009	PART-valve_4v21008bg-DESC	1
328	SW361-0051	1/4G O-RING TO 8MM ELBOW	4
329	446-0006	CONTRINEX INDUCTIVE PROXIMITY SENSOR 8MM DIAMETER X 35MM BODY	1
330	SW446-0008	MICRO DETECTORS MOUNTING BRACKET	1
331	SW332-0018	HGR20 HIWIN LINEAR RAIL 115MM	1
332	M6x .75 90[deg] Ftg	GREASE FITTING, 90 DEGREE ELBOW, M6 x 0.75MM THREAD	1
333	60645K141	ROD END, MALE THREAD, 3/8-24 (60645K141)	1
334	363-0052	BALL JOINT ROD END, FM-M12*1.2	1
335	SW315-0022	HIGH-LOAD FLANGED SLEEVE BEARING (OIL EMBEDDED)	2
336	SW691-0049	STEEL EXT SPRING WITH LOOP END	1
337	42112	WALL AND UNDER MOUNT, 0.21"WIRE DIAMETER, 13/16" PROJECTION	1
338	HR55 (Modified)	RUBBER CLAMP PAD [TAPERED EDGE)]	1
339	SW315-0005	HIWIN [20MM] GUIDE BLOCK NARROW	5
340	M6x .75 45[deg] Ftg	M6X .75 45 DEGREE FITTING	3
341	SW442-0014	R38 CABLE CARRIER	61
342	55835K941	Snap-Together Open Cable and Hose Carrier	2
343	SW123-0402	GRIPPER MATERIAL STOP	1
344	SW123-0206	TALON GRIP, 5/16 CLEARENCE	1

Pneumatic Valve Nest



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
440	SW123-0329	VALVE NEST MAIN FORM	1
441	SW361-0022	NITRA PNEUMATIC REGULATOR	1
442	SW361-0036	PRIMEFIT R1401G PNEUMATIC MINI	3
443	SW123-0330	VALVE STAND ANGLE	3
444	SW362-0009	PART-valve_4v21008bg-DESC	3
445	SW441-0080	Valve cable, DIN B1 to M12 A-Code Axial Male cable, 24vac, NPN, 300mm cable length	3
446	SW361-0044	1/4G O-RING - 8MM STRAIGHT	6
447	SW361-0051	1/4G O-RING TO 8MM ELBOW	9
448	SW361-0060	1/4G-8MM QUAD OUTLETS 90 DEG	1
449	SW361-0037	1/8 FLOW CONTROLL MUFFLER-SPR	2
450	SW361-0055	DUAL OUTLET PARALLEL Y (RPY-8)	3
451	WB105	INDUSTRIAL 1/4" QUICK CONNECT AIR COUPER, 1/4"-18, (P341)	1
452	SW361-0039	EXHAUST BREATHER PSV-1/8	4

Dust Collection Assembly



SAFETY SPEED MANUFACTURING CO. INC.
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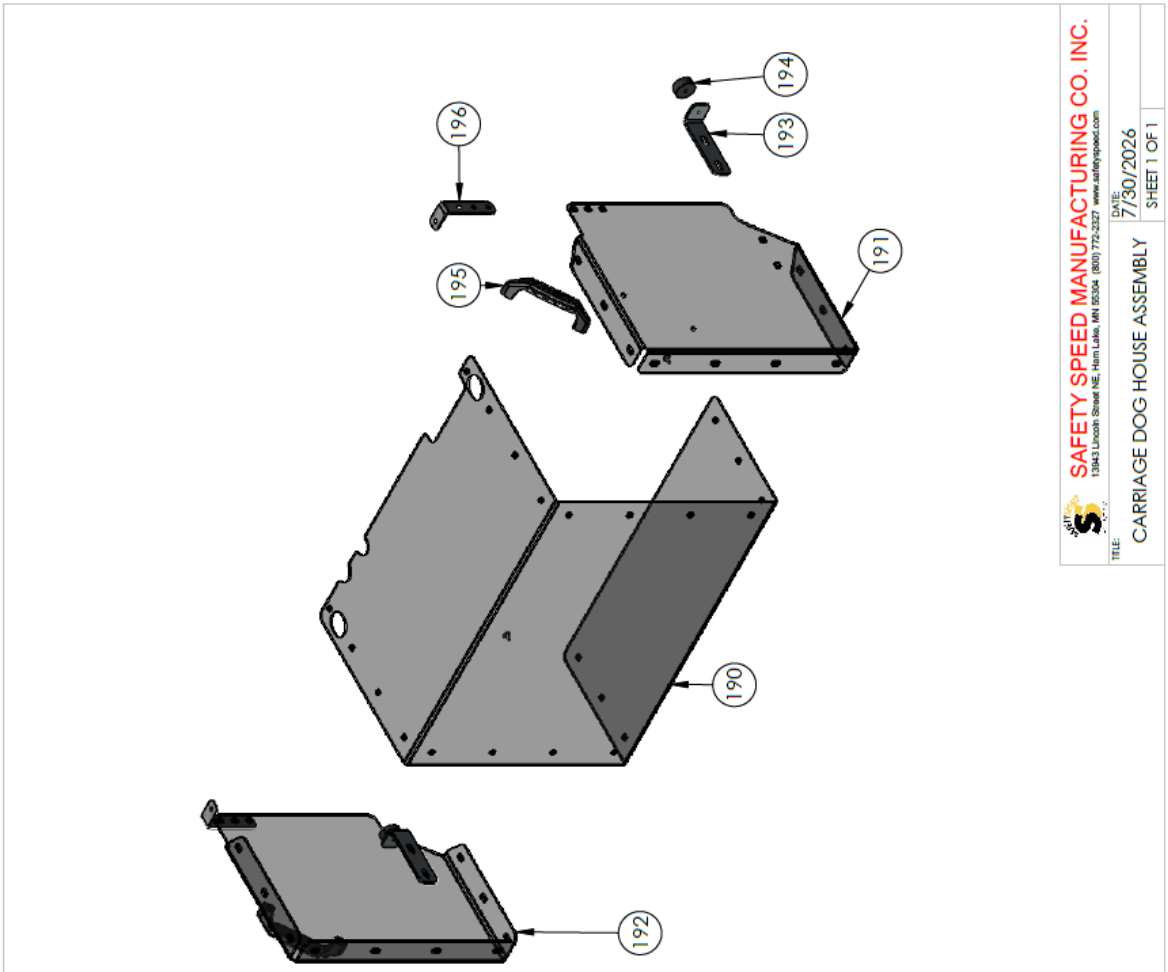
TITLE: DUST COLLECTION AND ROLLERS

DATE: 7/30/2026

SHEET 1 OF 1

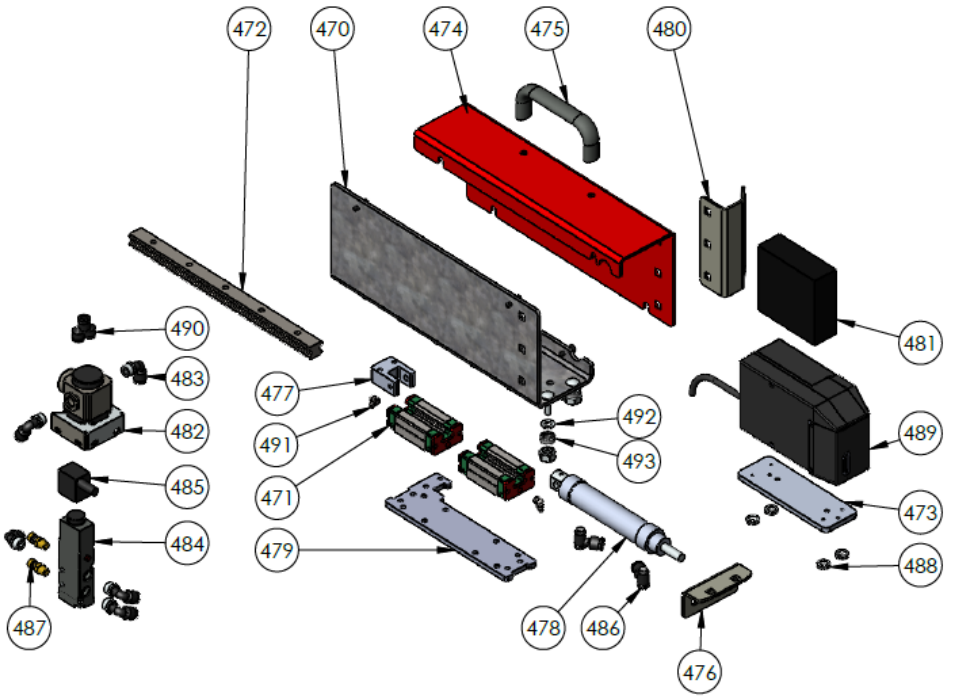
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
370	SW123-0125	FRONT ROLLER MOUNT PLATE	2
371	SW123-0127	BOTTOM SLIDE PAN	1
372	SW123-0229	FRONT BELT SWEEP CLAMPING STRIP	1
373	SW331-0009	1.9" DIAMETER CONVEYOR ROLLER	2
374	SW123-0338	REAR CW ROLLER FORM	1
375	SW123-0348	DUST BELT RUBBER SWEEP	1
376	SW223-0059	V-FORM WELDMENT	1
377	SW123-0138	LOWER DUST TROUGH BASE PLATE	1
378	SW123-0139	LOWER DUST TROUGH EXIT RAMP	1
379	SW123-0140	LOWER DUST TROUGH SIDE RAMP	2
380	SW691-0084	POWERTEC 70126 INLET FLANGE, 4"	2
381	SW123-0273	COVER PLATE FOR DUST PORT	2

Saw Motor Box (Doghouse)



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
190	SW123-0245	CARRIAGE DOGHOUSE MAIN CHANNEL	1
191	SW123-0246	CARRIAGE DOGHOUSE SIDE FORM	1
192	SW123-0346R	CARRIAGE DOGHOUSE SIDE FORM - REVERSE BEND	1
193	SW123-0218	ANGLE FOOT FOR DOG HOUSE	2
194	SW691-0003	UNTHREADED BUMPER HEAVY DUTY, SBR RUBBER	2
195	SW691-0043	UNTHREADED-HOLE PULL HANDLE, 5-1/2" CENTER-TO-CENTER DISTANCE	2
196	SW123-0302	ANGLE FOR DOGHOUSE TOP CORNER	2

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
470	SW123-0177	Printhead cradle channel	1
471	SW315-0005	HIWIN [20MM] GUIDE BLOCK NARROW	2
472	SW332-0012	HIWIN Linear Rail HGR20 x 300mm	1
473	SW123-0178	Printer mount plate, aluminum	1
474	SW123-0212	Printer Cover	1
475	SW691-0029	Oval Pull Handle, Threaded Hole, Black Aluminum, 4-7/16" Center-to-Center Width	1
476	SW123-0211	Wheel mount angle	1
477	SW123-0321	Cylinder mount for printer actuate. MAL25 style	1
478	SW363-0034	MAL25 x 75 cylinder	1
479	SW123-0217LH	Printer mount base plate - LH cylinder position	1
480	SW123-0116	Pinch shroud mount	1
481	SWP93-INK	SW Ink Cartrige	1
482	SW361-0036	PRIMEFIT R1401G PNEUMATIC MINI	1
483	SW361-0051	1/4G O-RING TO 8MM ELBOW	5
484	SW362-0009	PART-valve_4v21008bg-DESC	1
485	SW441-0080	Valve cable. DIN B1 to M12 A-Code Axial Male cable. 24vac, NPN, 300mm cable length	1
486	SW361-0069	RPH08-01G AIR FITTING ELBOW	2
487	SW361-0037	1/8 FLOW CONTROLL MUFFLER-SPR	2
488	SW591-0047	NEODYMIUM MAGNET COUNTERSUNK	4
489	SW223-0093	SW Printer (Squid CoPilot Print Head 2003900)	1
490	SW361-0055	DUAL OUTLET PARALLEL Y (RPY-8)	1
491	M6x .75 45(deg) Ftg	M6X .75 45 DEGREE FITTING	2
492	90126A029	1/4" SAE Flat Washer, Zinc Plated	1
493	6383K12	UXCELL 1603-2RS GROOVE BEARING	2



SAFETY SPEED MANUFACTURING CO. INC.
13943 Lincoln Street NE, Ham Lake, MN 55304 (800) 772-2327 www.safetyspeed.com

TITLE: PRINTER ADD-ON ASSEMBLY

DATE: 7/30/2026

SHEET 1 OF 1

Specifications

SWS410 Automated Vertical Panel Saw

Saw Model	Machine Dimensions				Max. Cross-cut	Min. Cross-cut	Max. Length	Min. Length	Cut Thick-ness	Volts AC 3 Phase	Horse Power
	Length	Height	Depth	Weight							
SWS410	320” 8128mm	96” 2440mm	46”1170 mm	3100 lbs. 1406 kg.	50”1270 mm	5-1/2” 140mm	120” 3050mm	24” 610mm	2” 50mm	208-230	3.00



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