



A **MAXCESS**® BRAND

RD AutoScore Installation and Operation Guide



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1 Overview

1.1 Operating Instructions Overview

All of the information herein is the exclusive proprietary property of Maxcess International and is disclosed with the understanding that it will be retained in confidence and will neither be duplicated nor copied in whole or in part, nor be used for any purpose other than for which disclosed.

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Periodically there will be updates to this manual. The latest version is available on our website or by calling your regional office listed on the back page of this publication.

The RD AutoScore was designed and manufactured to be installed as Partly Completed Machinery into a machine or partly completed machine.

The instructions must be read and used by all persons who have the responsibility of operating, installing, and maintaining the RD AutoScore.

These instructions must be retained and incorporated in the technical documentation for the machine or partly completed machinery into which the RD AutoScore is installed.

Conventions used in this manual.

All dimensions and specifications are shown in the format mm [inches] unless specified otherwise.

Language

These are the original instructions, written in English.

2 Safety

2.1 Instructions for Use

To ensure safe and problem free installation of the RD AutoScore, it must be properly transported and stored, professionally installed, and placed in operation. Proper operation and maintenance will ensure a long service life of the device. Only persons who are acquainted with the installation, commissioning, operation, and maintenance of the system and who possess the necessary qualifications, may work on the RD AutoScore.



WARNING/CAUTION/NOTE - General danger or important Safety/Hazard information.

Reference to general hazards that may result in bodily injuries or damage to device or material. Also used to provide additional information in the form of a NOTE.



WARNING/CAUTION - Danger due to crushing.
Reference to danger of injury caused by crushing.



WARNING/CAUTION - Danger due to cutting.
Reference to danger of injury caused by cutting.



WARNING/CAUTION - Danger due to voltage, electric shock
Reference to danger of injury caused by electric shock due to voltage.

Warning



- Knife blades are sharp.
 - Can cause serious injury to hands.
 - Do not put hands between knife blade and web material at any time during operation.
 - Use only recommended tools when handling knife blades.
-

SAFETY



IMPORTANT – The RD AutoScore requires a compressed air supply that is filtered, oil-free, and water-free.



CAUTION – Compressed air can be hazardous. Always wear eye protection.

- The RD AutoScore is used to produce a kiss-cut of web material fed between the score blades and an undriven anvil. There is no other intended purpose.
- Read and understand all instructions before operating the RD AutoScore. Failure to follow instructions may cause the unit to function incorrectly and could result in injury.
- The RD AutoScore contains spring-loaded components. While operating the RD AutoScore, follow all existing plant safety instructions and/or requirements.
- Always wear stainless steel protective gloves when changing or removing knife blades.
- Do not put hands in machines. Compliance with federal, state, and local safety regulations is your responsibility. Be familiar with them and always work safely.



WARNING – Pinch Point. Keep hands away from moving parts.



WARNING – Electrical installation must always be performed by qualified personnel



INFORMATION – Disconnect power while performing maintenance

2.2 RD AutoScore Specific Safety Information

To ensure safe and problem free installation of the RD AutoScore, please note the following

2.2.1 Proper use

The RD AutoScore is intended to be used on machines or systems as a back-score edge trim for a variety of web materials.

2.2.2 Improper use

- Operation outside the technical specifications.
- Operation in an intrinsically un-safe area.
- Outdoor operation.
- Any other use than the proper use shall be deemed inappropriate.

2.2.3 Installation and commissioning

- Any RD AutoScore that is damaged must not be installed.
- Only perform installation, maintenance, or repair tasks on the RD AutoScore when the machine into which it has been installed is stopped and is secured from starting and power is locked out.
- The RD AutoScore must be securely mounted before being placed in operation.
- Only replacement parts obtained from Maxcess may be used.
- No modifications may be made to the RD AutoScore .

2.2.4 Decommissioning

Note that oil and waste materials containing oil pose a high potential risk to the environment. The legal obligations with regard to waste prevention and proper use/removal must be complied with when carrying out installation, repair, or maintenance work on the RD AutoScore. When the RD AutoScore is finally decommissioned, the applicable state, local, and federal laws, and legal regulations with regard to recycling and disposal must be followed.

3 Product Overview

The RD AutoScore consists of three (3) modules:

- Carriage (side frames, beam, anvil, knife carriages, belts, and motor)
- Power/Control Cabinet
- HMI (Operator Interface)

3.1 Specifications

Definition	Specification
Blade Diameter	31.75 mm (1.25 in.)
Minimum Slit Width	38.1 mm (1.5 in)
Vertical Stroke (Max down stroke)	1.6 mm (0.063 in)
Input Voltage	US plug: Single Phase, 100 to 125V AC UK & EU plugs: Single-Phase 220 to 250VAC
Input Air Pressure	80 psi (Min) to 100 psi (Max) 5.5 bar (Min) to 6.9 bar (Max)

Table 1 – RD AutoScore Specifications

3.2 RD AutoScore Block Diagram

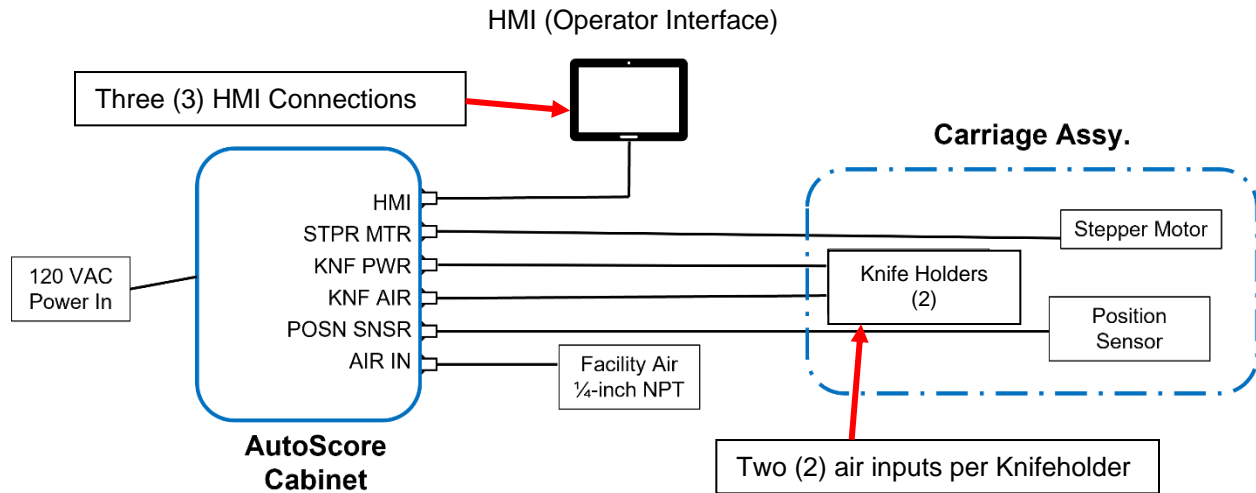


Figure 1 - RD AutoScore Block Diagram

3.3 RD Autoscore Major Sub-Assemblies

RD AutoScore major sub-assemblies are listed below.

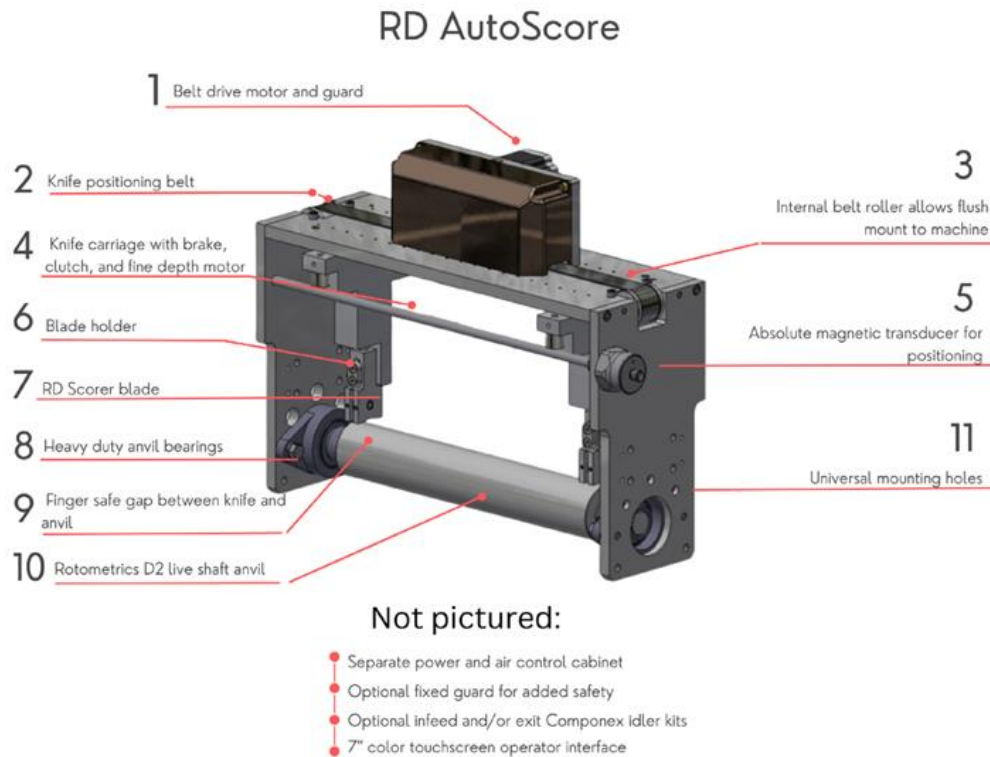
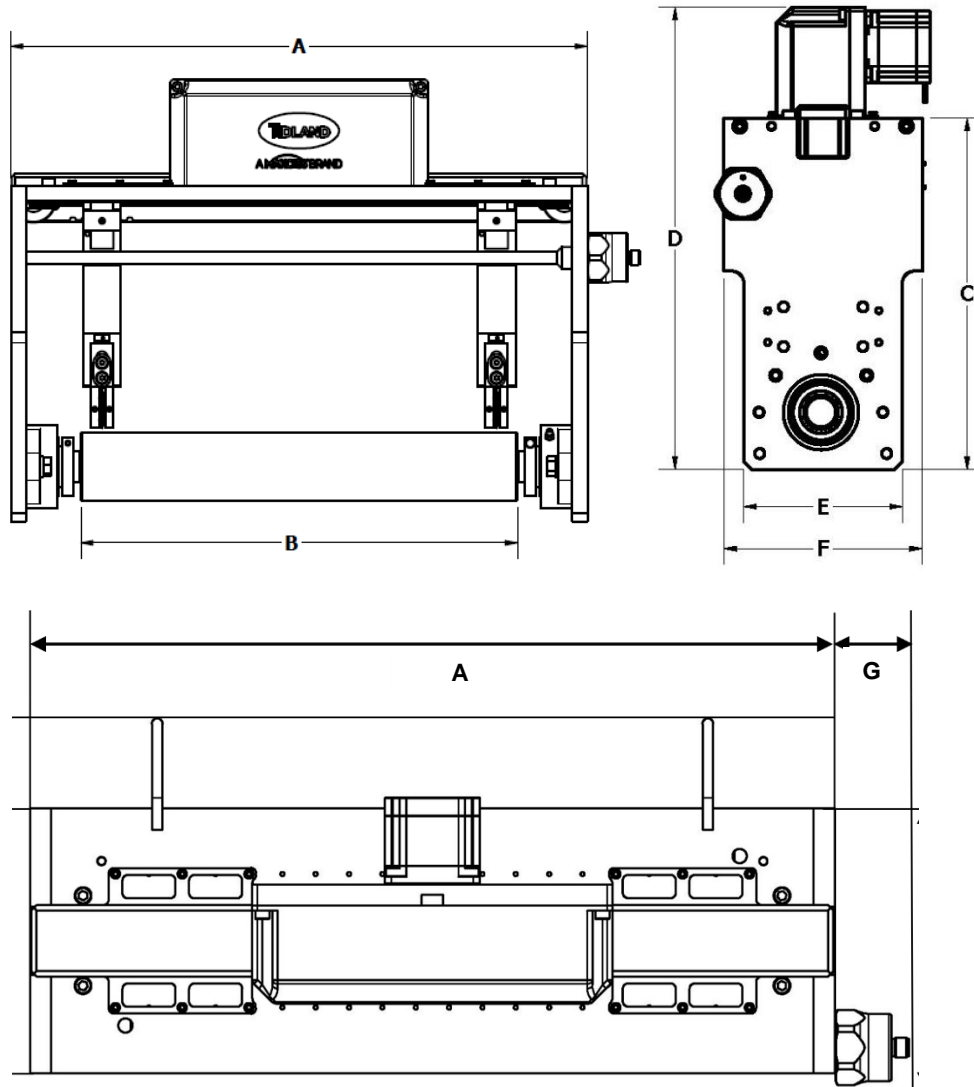


Figure 2 - RD AutoScore Sub-Assemblies

3.4 RD AutoScore Unit Dimensions

The actual dimensions for all six (6) RD AutoScore variants are provided below:



Designator	Width	A	B	C	D	E	F	G
RDAS10	10"	16	11.38	11.06	14.56	5	6.25	1.75
RDAS13	13"	19	14.38	11.06	14.56	5	6.25	1.75
RDAS17	17"	23	18.38	11.06	14.56	5	6.25	1.75
RDAS20	20"	26.5	21.88	11.06	14.56	5	6.25	1.75
RDAS22	22"	28.5	23.88	11.06	14.56	5	6.25	1.75
RDAS26	26"	32.5	27.88	11.06	14.56	5	6.25	1.75

Figure 3 – RD AutoScore Dimensions (inches)

PRODUCT OVERVIEW

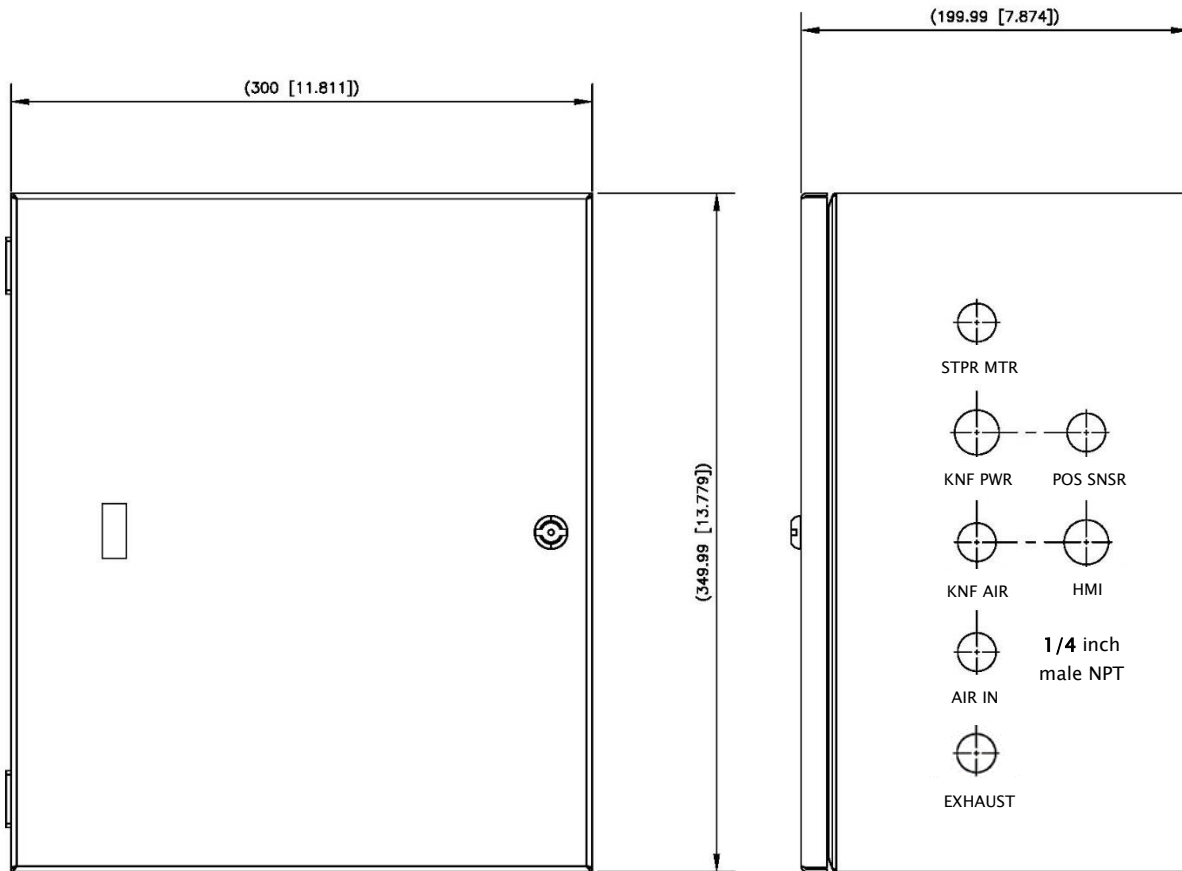


Figure 4 - RD AutoScore Cabinet Dimensions (Inches)

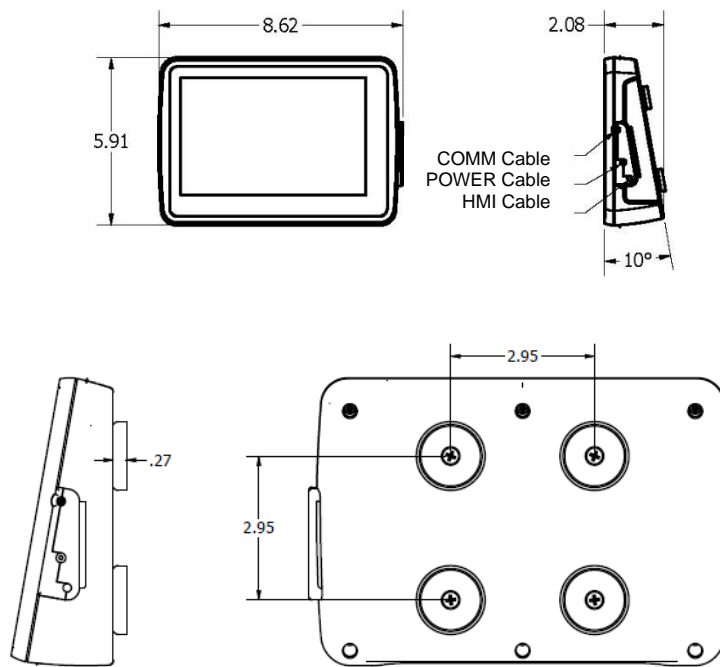


Figure 5 - RD AutoScore HMI (Operator Interface) Dimensions

4 Installation



CAUTION – Please be sure to wear protective goggles when you come into contact with compressed air and use air tools.



IMPORTANT – The RD AutoScore requires a compressed air supply with filtered, oil-free, and water-free air.

4.1 Special Tools Required

The following is a list of specialized tools that may be necessary for the installation/maintenance of the RD AutoScore. This list does not include common industry tools and equipment that may be required:

- Transducer calibration tool: PN 270051641
- Eye bolts for lifting M10 x 1.5
- Blade change and install requires 3/32" Allen wrench

4.2 RD AutoScore Installation

4.2.1 “DA” Mounting Considerations and Installation

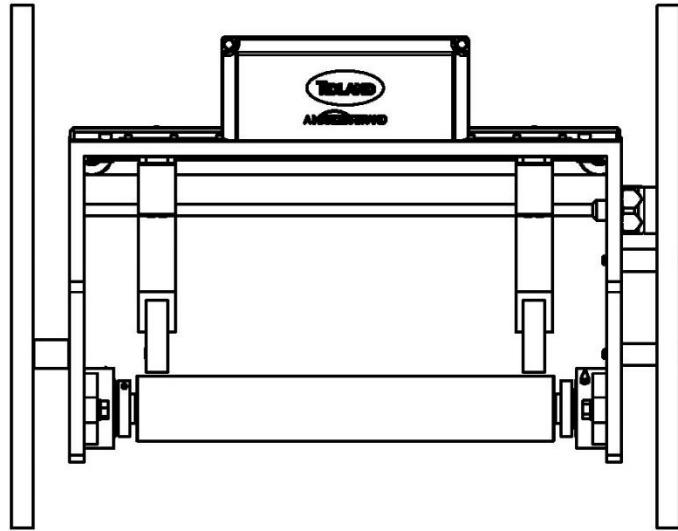


Figure 6 – DA Mounting Configuration Overview

The DA mounting convention sits down into the customer machine as shown above. The detailed instructions follow.



NOTE – Prior to installation, confirm available space in the machine, confirm mounting hardware required, and determine web path after installation. Contact Maxcess for Support, as necessary.

INSTALLATION

1) Determine mounting hole location for bolts and dowels:

- Determine if there is an empty idler location (or idler that can be removed) that accomodates the dimensions below.
- Install assembly and insert dowel pins and bolts to secure RD AutoScore assembly. Use existing frame holes or drill appropriate dowel and bolt holes necessary to secure assembly to frame.

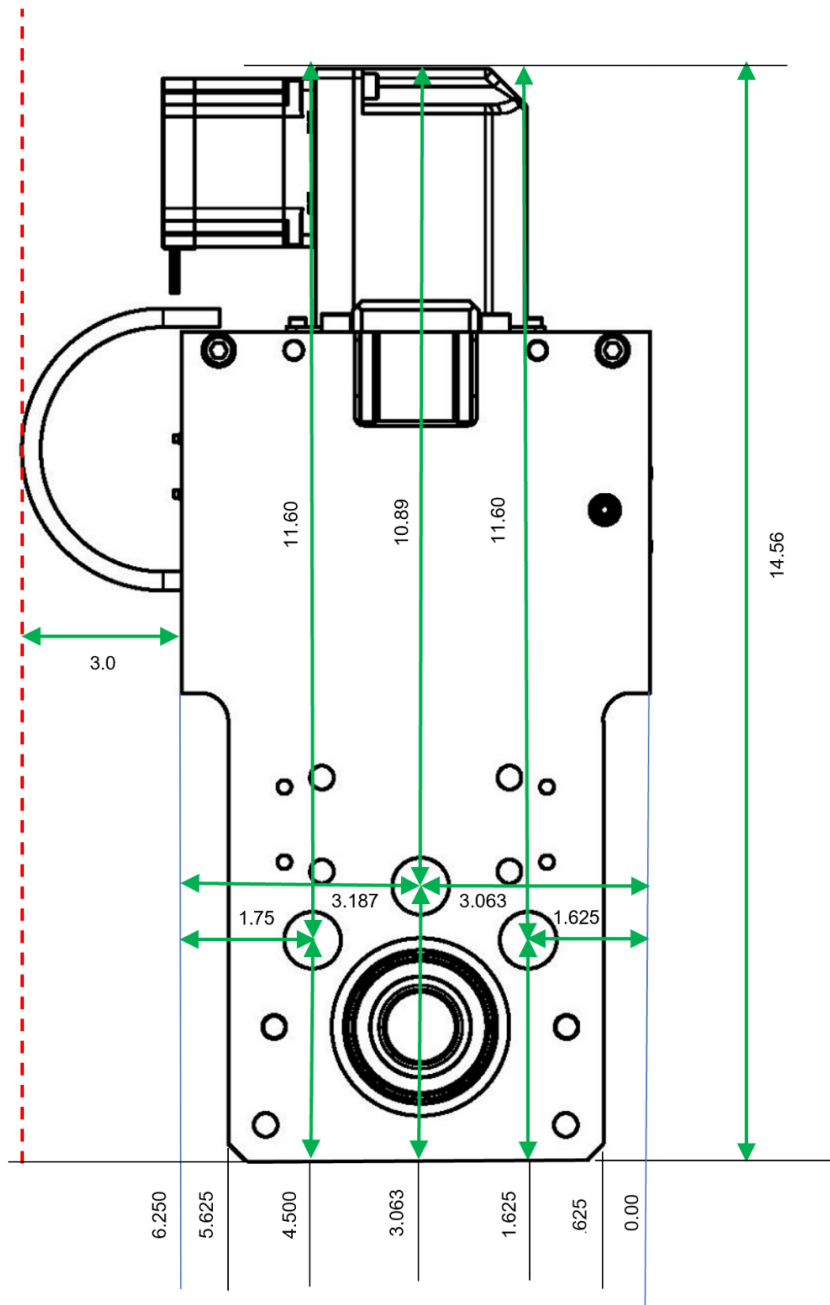


Figure 7 – Specifications Machine Side Frame (Inches)

INSTALLATION

NOTE - If necessary, drill an approximately 2" diameter hole in the machine frame to accommodate the transducer assembly

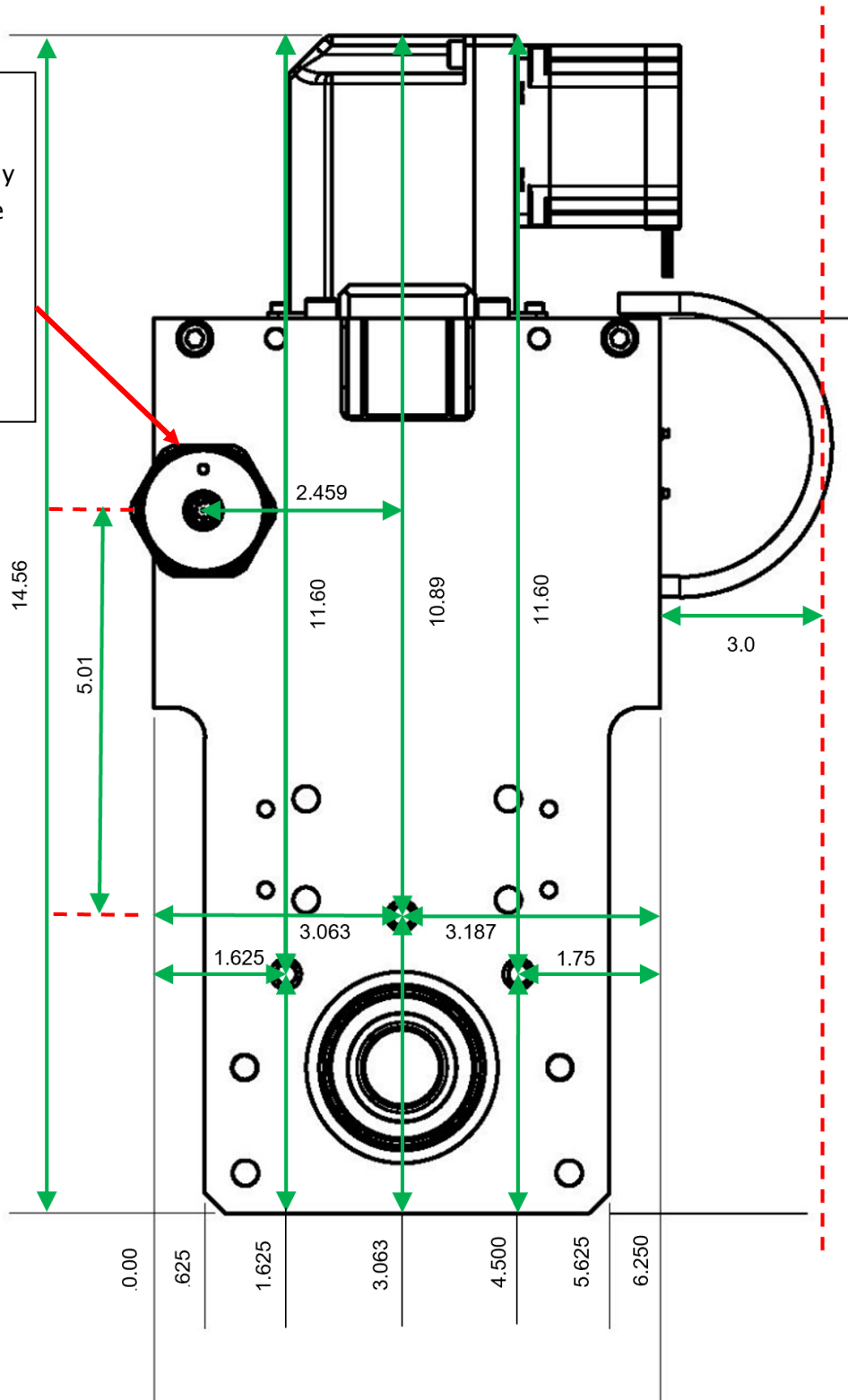


Figure 8 - Specifications Operator Side Frame (Inches)

INSTALLATION

- 2) Allow for a minimum 3 inches of cable bend radius and routing. See Figure below:

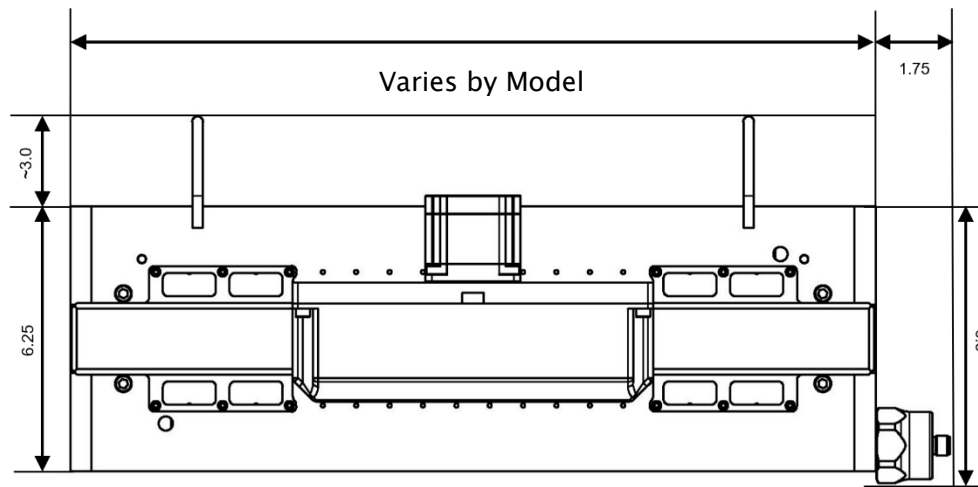


Figure 9 - RD AutoScore Top View and Cable Bend Radius

Part Number	QTY	Nomenclature
270048928	1	.75" Diameter Pin
270048942	2	DA 1.25" Lg Spacer
270048943	2	Shoulder Bolt (91259A486)

Table 2 - DA Mounting Hardware (Inches)

- 3) Place power & control cabinet in a convenient location behind or inside the press or machine and within 5 meters of the RD AutoScore location (see section 4.1.3 for additional information).
- 4) Ensure there is a pathway to route cables from the cabinet to the RD AutoScore and HMI (Operator Interface).
- 5) Place HMI (Operator Interface) in a convenient location accessible to the operator and within 5 meters of the cabinet location (see section 4.1.4 for additional information).
- 6) Mounting Considerations
 - Find existing unused idler holes in the mounting location, or an idler that can be removed.
 - Check position relative to idler hole where the transducer will be located. If needed, drill a 2" diameter clearance hole in the operator side frame.
- 7) Add eye bolts to the top of the frame to aid in positioning.
- 8) Remove the transducer and put in a safe place.

INSTALLATION

- 9) Use overhead crane or hoist to help lift the RD AutoScore and position in between the frames.
 - Install dowel pin in one of the open holes on the machine side frame, and slide into idler hole.
 - Align spacer with matching hole on the operator side frame, put spacer in between, and install shoulder bolt.
 - Find another existing hole on the operator side that can be used as a 3rd fixing point, or open space where a hole can be drilled in both the operator side frame, and the RD AutoScore frame.
- 10) Use level to align system and clamp in place.

NOTE - Instead of drilling a 3rd mounting hole, a fixed support point (such as a rigid bracket) may be used.
- 11) If necessary to drill the 3rd mounting hole, use the 2nd spacer as a guide to ensure hole is aligned through the operator side frame and the RD AutoScore frame.
- 12) Add 3rd bolt and tighten in place.
- 13) Remove clamps, overhead support, and eye bolts.

INSTALLATION

4.2.2 “CX” Mounting Considerations and Installation

Top mount installation involves installing a mounting bracket to the top of customer machine and then mounting the AutoScore to the mounting bracket. The hardware is provided below.

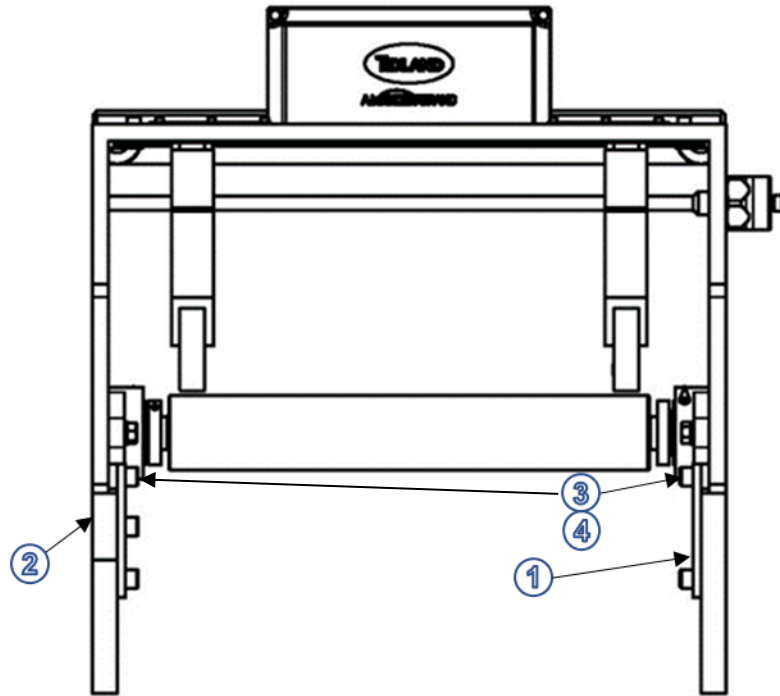


Figure 10 – RD AutoScore Top Mount Option

Reference	Part Number	QTY	Nomenclature
1	270048940	2	Bracket/plate for side mounts
2	270048947	1	2" Riser Block
3	27L897687	5	SOC HD CPSCR 3/8-16 x 1"
4	270048941	4	CX .25" Lg Spacer

Table 3 – CX Mounting Hardware

The customer will need to perform the following steps for installation:

- 1) Identify available holes for mounting bracket plates or match drill holes for mounting bracket plates.
- 2) Add eye bolts to the top of the frame to aid in positioning.
- 3) Remove the transducer and put in a safe place.
- 4) Use overhead crane or hoist to help lift the RD AutoScore and position above top of frames.
- 5) Place 2" riser block into position, lower frame, and attach mounting plates using five (5) cap screws and four (4) spacers.

INSTALLATION

- 6) Ensure there is a pathway to route the cables from the cabinet to the RD AutoScore and HMI (Operator Interface) and mount cabinet per next section.

4.2.3 RD AutoScore Power and Control Cabinet

Determine suitable location for cabinet. Ensure the location is within the 5 Meter cable distance of all interconnect cables from cabinet to AutoScore Assembly and to HMI (Operator Interface).

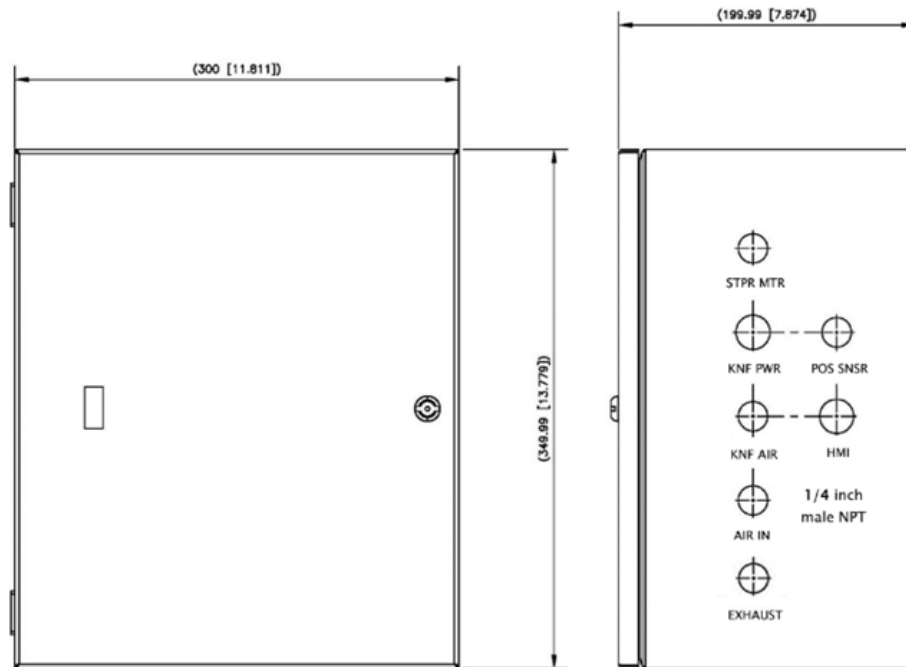


Figure 11 - Cabinet Labelling and Clearance

NOTE – Ensure ~6-8 inches of space around cabinet to allow space for cables coming in to cabinet to have proper bend radius.

INSTALLATION

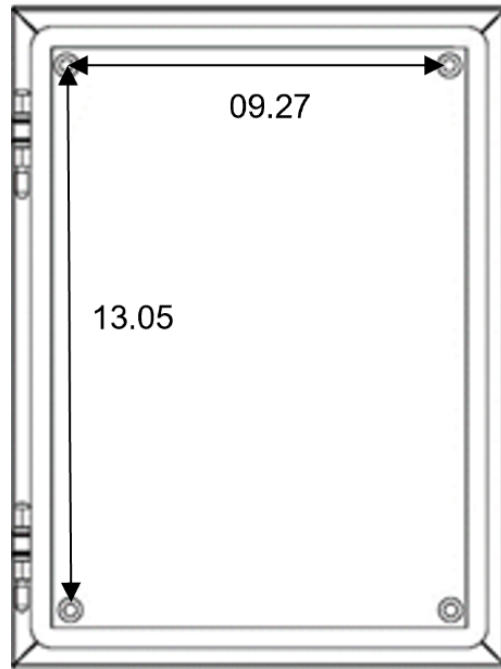


Figure 12 - Cabinet Mounting Hardware (Inches)

- 7) Determine mounting location (within 5 Meters of carriage), match drill holes to suitable mounting surface, and attach cabinet using M8 hardware (bolts, washers, and nuts - or concrete lag screws and washers).

INSTALLATION

4.2.4 RD AutoScore Touchscreen HMI Mounting Hardware

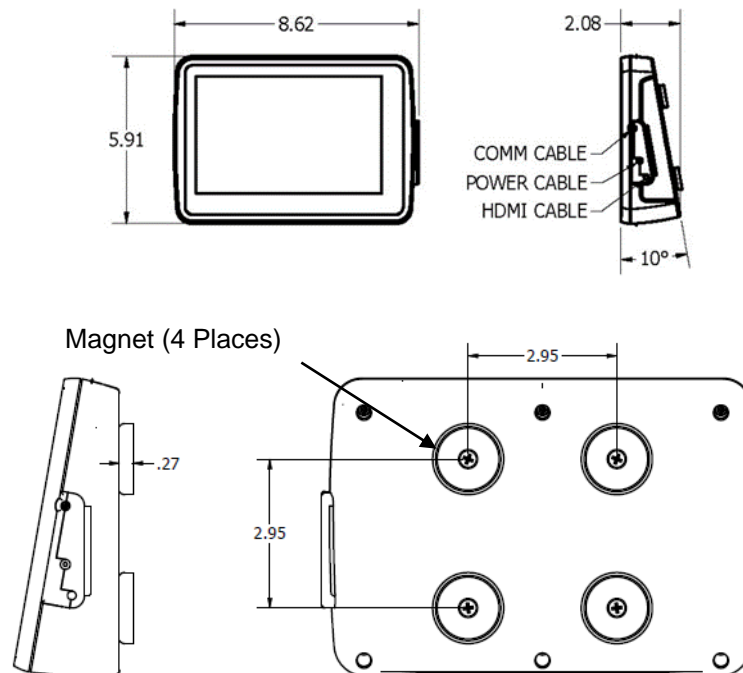


Figure 13 - HMI (Operator Interface) Installation (Inches)

NOTE - Determine suitable location for HMI, ensuring location is within the 5 Meter cable distance of three (3) interconnect cables from cabinet to HMI.

HMI (Operator Interface) comes with magnets for flexible mounting anywhere on a metallic machine frame. Locate the HMI in a suitable area for the operator and ensure that a clean metal surface is available for magnet adhesion. If direct attachment to a wall or support bracket is preferred, customers can remove the (4) magnets from the back of the HMI and re-use the VESA 75 mounting holes.

Order P/N 270050589 for a VESA 75 (75mm x 75mm) wall mount to directly attach to a flat surface. Kit comes with fasteners for mounting to a wall or other suitable surface. Customers may also utilize their own VESA 75 support arm or mounting kit as desired.

After installing the HMI, and routing the 3 cables (Power, HMI, and COMM), it will be necessary to open the HMI to install the cables (see figure 14). It may be easier to install the cables prior to finalizing the HMI mounting location.

INSTALLATION

4.3 Cable and Hose Connections

NOTE – Ensure Power and Air are turned off during the following step.

- 1) Power and Control Cabinet – All cable assemblies between cabinet and AutoScore carriage/HMI (Operator Interface) are disconnected at the carriage and secured to the cabinet. Customer will route and connect cables to knife holders as shown below in Figure 14.

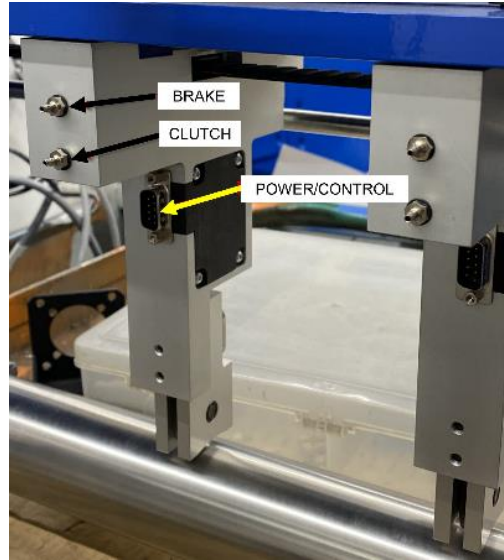


Figure 14 – AutoScore Knifeholder Cable Connections

- 2) After connections are complete, ensure knifeholders move smoothly along their mounting track and cables are not interfering with knifeholder movement.
- 3) Ensure that cables are routed and secured with a minimum 3 inches of bend radius between the carriage and AutoScore frame. Install cable tie every 12 inches (use kit-supplied stick-on cable mounts, as necessary). Air Input to cabinet is 1/4 inch male NPT, customer to provide suitable hose connection for Air Input.

Note: Ensure cable ties do not restrict air flow to carriages.

- 4) It may be necessary to drill a 2-inch hole in the customer machine, if customer wishes to route cable assemblies through their machine frames. Most installations can be done without performing this step.

INSTALLATION

- 5) Route the 3 cables (Power, HMI, and COMM) to the HMI location. Remove six (6) screws securing HMI cover, open the HMI and connect the cables (see figure 15 below). Install cover using six (6) screws and mount HMI in accordance with section 4.1.4. NOTE – It may be easier to install the cables prior to finalizing the HMI mounting location.

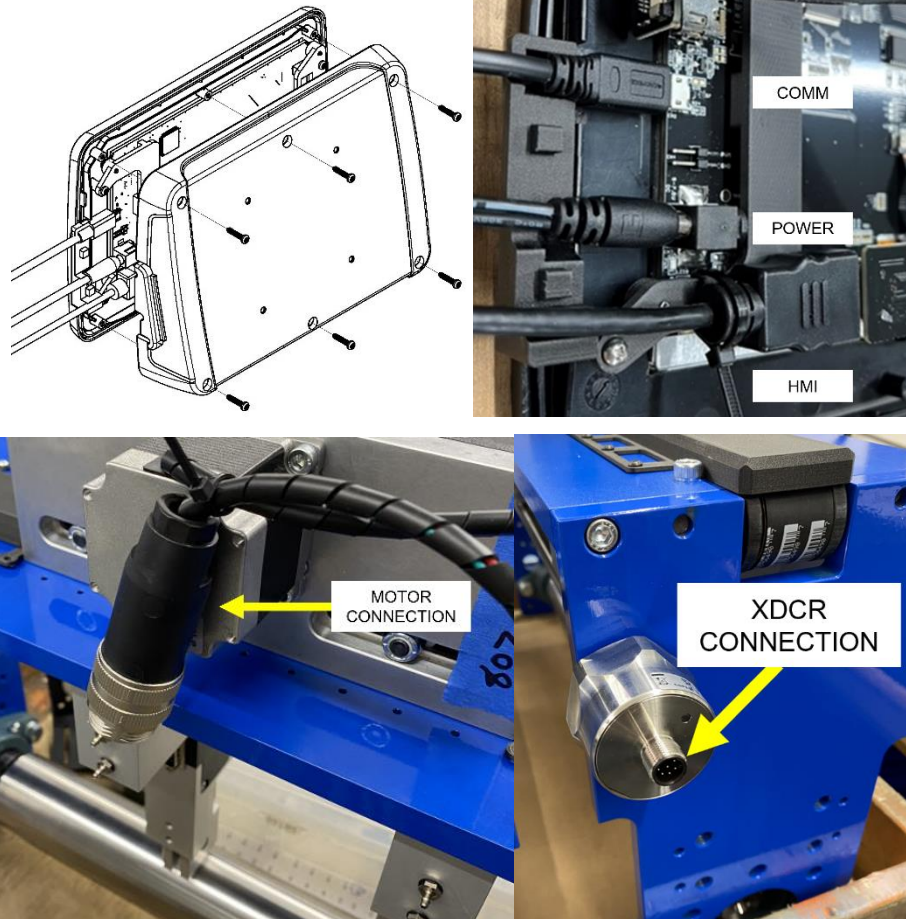


Figure 15 – Carriage Connections

- 6) Connect Motor and Transducer connectors as shown above and perform tasks in next section.

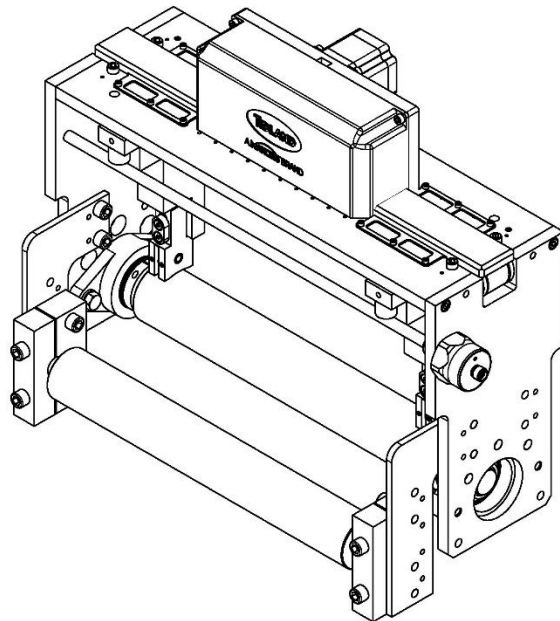
INSTALLATION

4.4 Determine System Justification Relative to RD AutoScore

After RD AutoScore installation, determine machine web justification (left, center, or right) relative to RD AutoScore. First, thread-up machine with proper justification (left, center, or right) web position. There are two ways to measure the machine center vs RD AutoScore center:

- Use tape measure to record the distance from the web justification (left, right, or center) to the inside edge of the RD AutoScore operator (transducer) side frame.
- Manually move one of the knife carriages along the track so that the score blade is located at desired web justification (left, right, or center). When the RD AutoScore is powered on, the position value of the carriage will be visible on the main screen.

4.5 RD AutoScore Idler Kits

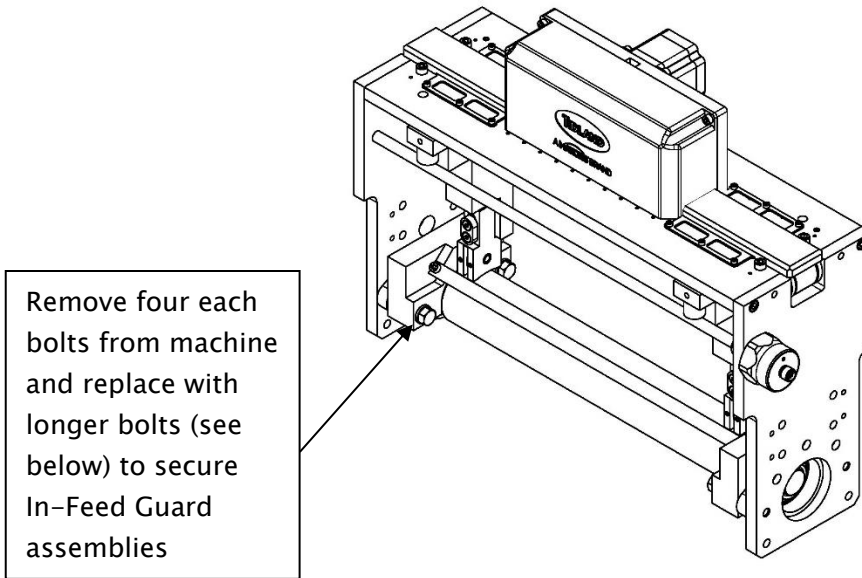


Size	Description	Part Number
10"	2" diameter idlers	270050606
13"	2" diameter idlers	270048998
17"	2" diameter idlers	270048999
20"	2" diameter idlers	270050607
22"	2" diameter idlers	270050608
26"	2" diameter idlers	270050609

Figure 16 – RD AutoScore Idler Assemblies (13 inch shown)

INSTALLATION

4.6 In-Feed Guard Kits



Size	Part Number
10"	270049763
13"	270049764
17"	270049765
20"	270049766
22"	270049767
26"	270049768

Figure 17 - RD AutoScore In-Feed Guard Assemblies (13 inch shown)

The bolts come in the idler kit supplied by Maxcess. To install the kits, remove the old hex bolts that secure the bearings, install the guard kit and use the kit-supplied bolts to secure the guard and bearings to the frame.

5 RD AutoScore Initial Setup and Calibration

5.1 Prior to Power-Up

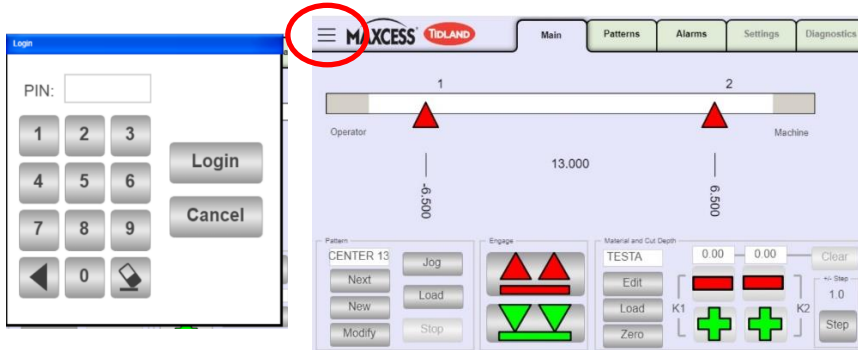
Before powering on RD AutoScore, check that the following steps are complete:

- Input air line is connected to cabinet and is receiving 80–100 psi (5.5 to 6.9 bar) to brakes.
- Cabinet is placed in a suitable location for ongoing operation
- Cabinet door is securely closed.
- Cabinet power cord is plugged into an AC outlet.
- All interconnect cables and hoses are connected to allow free movement of knife carriages and secured to reduce risk of inadvertent contact with the web, machine or operator.
- HMI (operator interface) is installed and accessible to operators.
- RD AutoScore anvil is level with adjacent idlers and web path.
- RD AutoScore is secured to the machine.

Note: if the RD AutoScore anvil is not level with the machine, check attachment points on the operator and machine side frames, remove, and repeat steps in section 4 as needed.

5.2 Initial Setup and Calibration

Turn power switch to ON at Power/Control Cabinet, and wait approximately 60 seconds for the system to boot-up.



Log in as Level 2 System Administrator (Press highlighted icon to launch login screen.)

- Level 2 (System Administrator) – Enter 22 to login.

Touch the “Settings” tab, then the “General” tab.

In the “Unit” Section select inch or mm for all pattern references

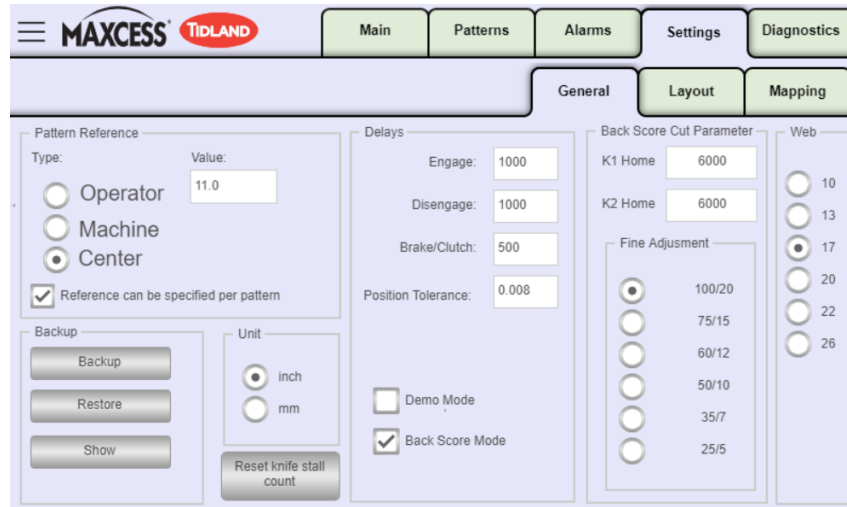
Note: The in/mm selection MUST be done before saving any patterns. If this value is changed, any patterns saved will NOT automatically convert to the new measurement system.

In the “Reference Pattern” section on the left of the screen, the option (Center) should be selected. The (Value) is factory set to the physical center of the RD AutoScore. If the system center as installed on the machine does not align with the web centerline, this value will need to be updated.

Check this value against the number as measured according to instructions in section 4.3, and if different, update to the measured value.

When finished, touch the "Main" tab to return to the home screen.

HMI (Operator Interface) SCREENS



For initial setup, run the Mapping function. See section 6.15 for detailed instructions.

6 RD AutoScore HMI (Operator Interface) Screens

6.1 Home Screen

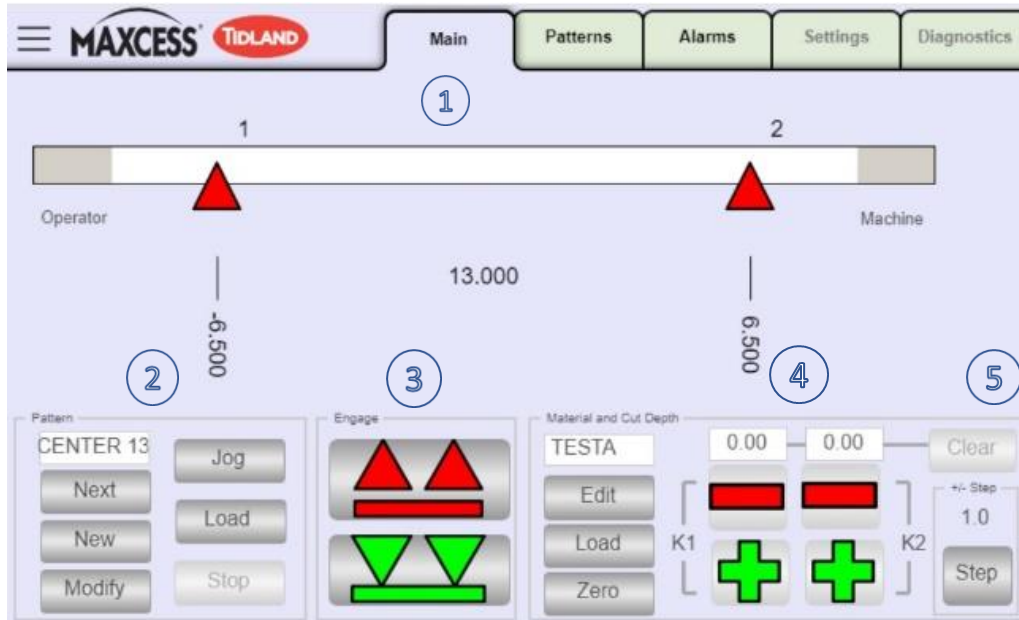


Figure 18 – HMI Main Screen

- 1) Main Screen – Visual representation of Operator and Machine Knife carriages.
- 2) Pattern Menu Section – Allows user to setup new jobs, modify existing jobs, Jog, and Load jobs.
- 3) Engage Menu Section – Allows user to Engage and Dis-Engage Blades.
- 4) Material and Cut Depth Section – Allows user to edit and load material as well as Zero Blades and make fine adjustments to the blades to compensate for changes such as blade wear.
- 5) Step – Allows user to change the amount the blade fine adjust buttons move the blades up or down. The standard movement is 1.0 steps, by pressing the step button the standard movement changes to 0.2 steps. This change is helpful for making fine blade cut depth adjustments to difficult to score materials.

6.2 Login

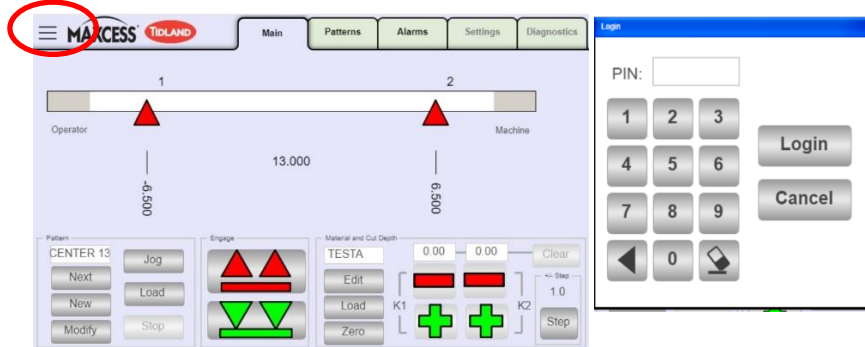


Figure 19 – Login Screen

The Login screen is only for:

- Level 1 (Trusted Operator/Technician) – 11
- Level 2 (System Administrator) – 22
- Level 3 (Maxcess Support) This will only be used by Maxcess remote support. Customer will NOT have access to Level 3.

Enter appropriate PIN numbers for level of access.

Operators do not need to be logged in to perform day-to-day tasks. Login level 1 or 2 is necessary to access functions on the Settings and Diagnostics tabs.

6.3 Zeroing Knife Blade Position

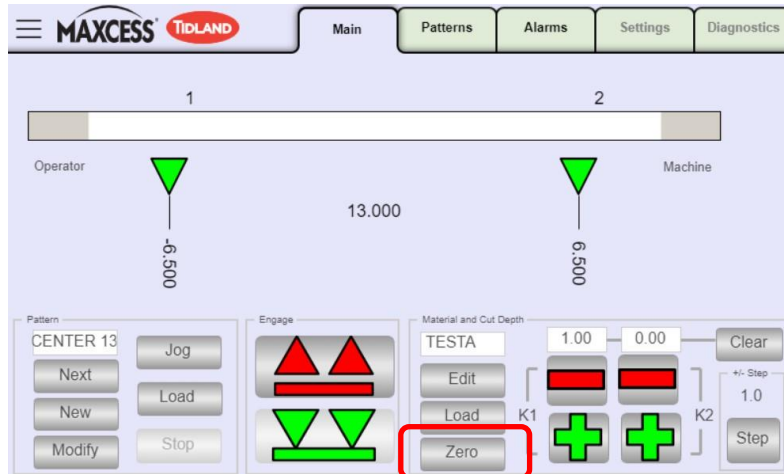


Figure 20 – Zeroing Knife Blade

Use this function to locate the blade position relative to the anvil.

- In the Material and Cut Depth section of the main screen, press the Zero button to start the sequence.
- While the system is performing the Zero sequence, the buttons in the Engage section are disabled. The knives will move to the outside edges of the anvil, engage to check the relative blade to anvil clearance, retract, then return to the previous pattern position. The software automatically adjusts for any variations found from the prior setup.
- When the Zero process is complete, the buttons in the Engage section will re-enable and the system is ready to run.

NOTE – Zero function does not account for blade wear. If blades are worn, use the + buttons to increase impression. For sensitive materials, some fine tuning may be needed after Zero function.

Perform the Zero function in the following cases:

- Immediately after Power-Up
- Immediately after blade change
- Periodically to account for large thermal variations

6.4 New Pattern Setup

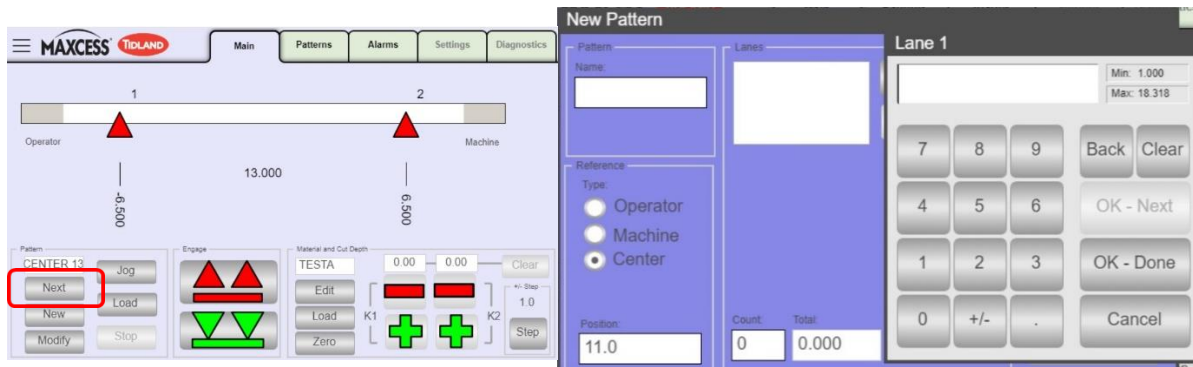


Figure 21 – New Pattern Screen

There are two separate libraries on the RD AutoScore, a “Pattern” library for saving lateral knife positions, and a “Material” library for saving the score blade cut depth.

RD AutoScore is designed as an edge trim system, where the operator inputs the width of the trim, or Lane, and the trim position using a reference starting point (value) and reference type.

To create a new lateral position Pattern, press “New” in the Pattern section of the main screen.

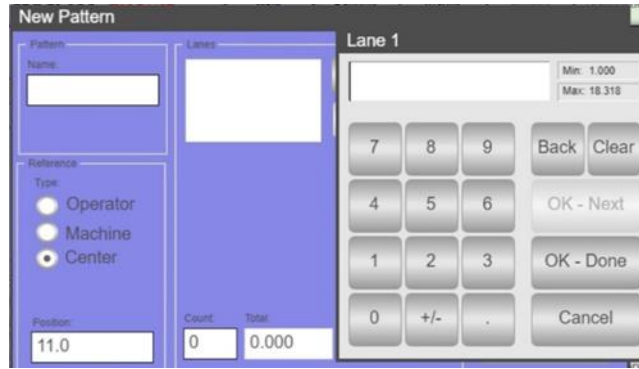
Note: instructions assume web material is setup in Center orientation on the machine

The New Pattern dialog box will open.

Touch the name field and enter a new unique name for the Pattern.

The Reference section of the dialog box defines the pattern position and type. New patterns will automatically populate with the default values as configured on the Settings screen.

HMI (Operator Interface) SCREENS



The Position value is the pattern's starting point as measured from the inside edge of RD AutoScore's machine-side frame. There are three types of patterns:

- Center – The trim knives are positioned equal distances on either side of the reference position
- Operator – One trim knife is located at the reference position, and the other is located a defined distance (Lane width) toward the machine direction
- Machine – One trim knife is located at the reference position, and the other is located a defined distance (Lane width) toward the operator direction

Center type is most common, but for off-center jobs it may be easier to use an operator or machine side reference point.

The Lane width is the trim width measured between blades.

Use the radio buttons to select the reference type, and touch the position value to change the reference position.

- Touch Lane 1 and Edit to open the keypad and enter the trim width.
- Touch the Save button to save the new Pattern into the library.

6.5 Modify Pattern

To edit the active Pattern for lateral knife positions, press the Modify Pattern button

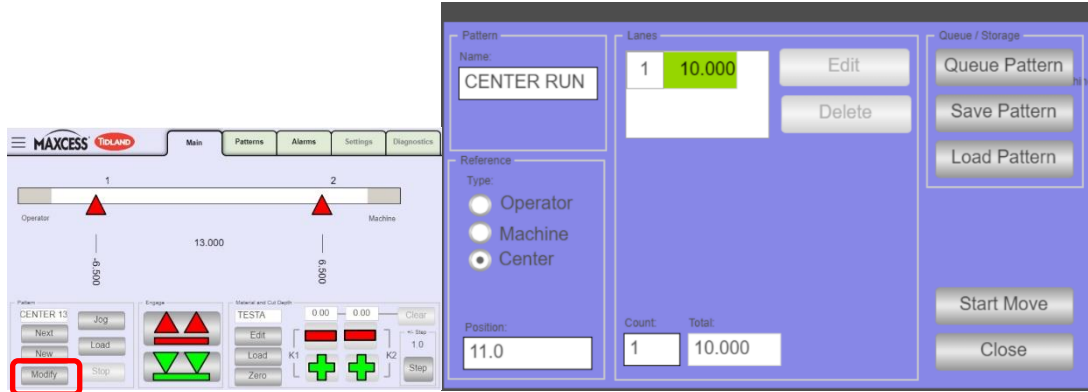


Figure 22 – Modify Pattern Screen

The Pattern dialog box will open as shown above and display settings for the material that was selected.

To use the active pattern as a template to create a new pattern, touch the “Name” box on the screen to Edit the Pattern’s name. Enter a unique name for the new pattern.

Under the Lanes section, touch the trim width number to highlight it. To change the trim width, touch “Edit” and enter the new width.

To save the Pattern to the library touch “Save Pattern” to save the changes into the Library. To add the Pattern to the queue, touch “Queue Pattern”.

To directly move to the pattern, touch “Start Move”

6.6 Load Material

The Material Library is used to save score blade cut depths separately for each specific material type.

Use the "Load" button in the Material and Cut Depth section to open the Material Library.

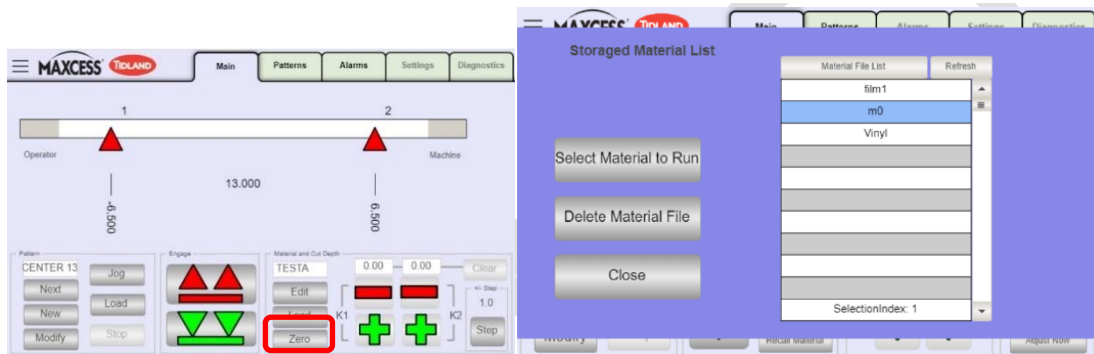


Figure 23 – Load Material

Touch the "Refresh" button to confirm the list shows recently created Materials. Use the scroll bar as needed, and touch the name of the Material to select.

Touch "Select Material to Run" to activate the selected material and return to the main screen.

6.7 New Material Setup

Install new blades (in accordance with section 6.12) in all carriages and perform the “Zero” operation to Zero the new blades.

Note: New blades should ALWAYS be used when creating or modifying a material in the library to ensure the most accurate results.

Touch "Edit" in the Material and Cut Depth section to edit the active material. A popup will appear that asks if you would like to tune the active material. Select "Yes" to open the material dialog box.

Touch the Material Name, and use the keypad to create a unique name for the material.

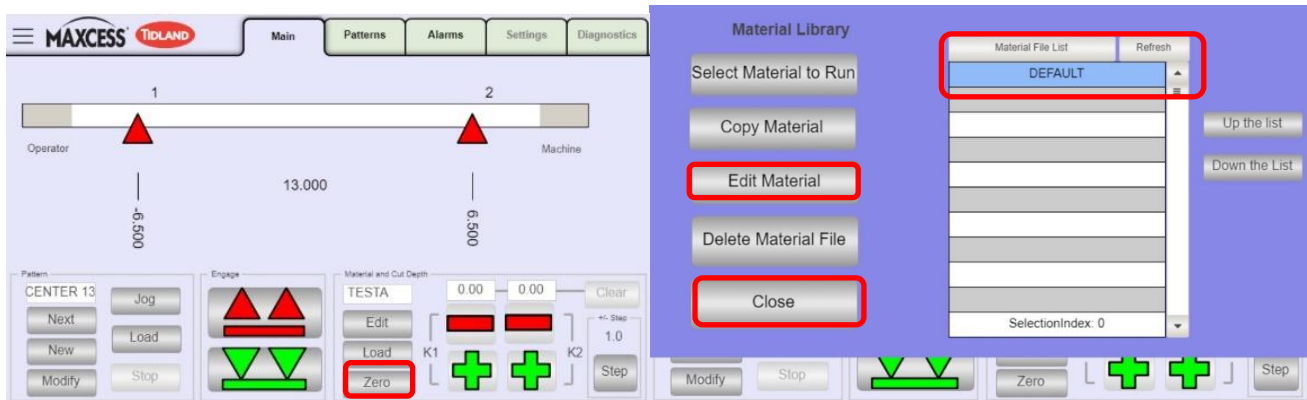


Figure 24 – New Material Setup

There are two options for finalizing setup of the new material:

6.7.1 Fastest Method

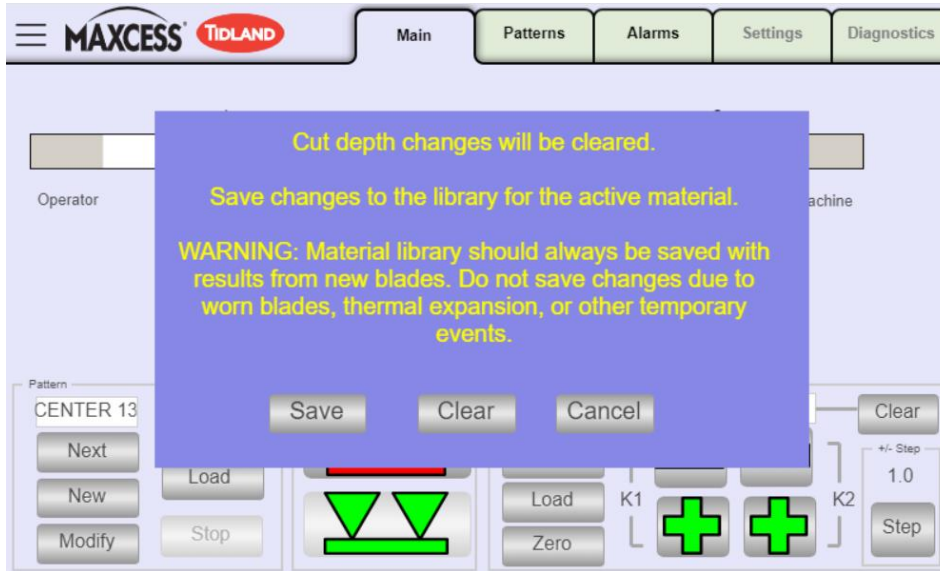
For materials that always run the same trim width, or are “easier” to get a good score result and do not require a high degree of cut–depth precision

- 1) Install new blades (see section 6.12) in all carriages and perform the “Zero” operation to Zero the new blades.

Note: New blades should ALWAYS be used when creating or modifying a material in the library to ensure the most accurate results.

- 2) Touch "Save" to save the new material to the library, then touch "Close" to exit the material dialog box and return to the main screen.
- 3) Set the desired trim Pattern and Engage the knives.
- 4) Run several feet of material through RD AutoScore (enough to check the cut quality), then stop the web motion as per the machine manufacturer’s instructions.
- 5) Check the cut quality of K1 and K2 by manually peeling the liner of the web after it exits the blades and anvil.
- 6) For K1, if the cut is too deep, use the red Minus (-) in the K1 section to decrease the knife impression. Each push raises the knife by 1.0 or 0.2 units. Use the 1.0 for large adjustments and 0.2 for fine adjustments.
- 7) If the cut is too shallow, use the green Plus (+) in the K1 section to increase the knife impression.
- 8) Make adjustments to the depth of K2 in the same way, using the Plus (+) and Minus (-) in the K2 section.
- 9) After both K1 and K2 are adjusted, run additional material through the machine. Re-check the resulting cut quality on the web after it exits the blades and anvil.
- 10) Repeat as necessary until a good cut is achieved for both knives.

11) When a good cut result is achieved, touch the “Clear” button on the Main screen to open the Cut Depth Change prompt, and touch “Save” (see figure below) to save the fine-tune results to the active material.



6.7.2 Most Precise Method

Used for all materials, and recommended whenever the material requires a high degree of cut-depth precision and will be used at multiple slitting pattern widths.

Every material has the ability to define a Narrow and Wide trim position, fine tune the cut depth result at each location, and save to the library. This method gives the best and most consistent results when Loading a material from the Library.

HMI (Operator Interface) SCREENS

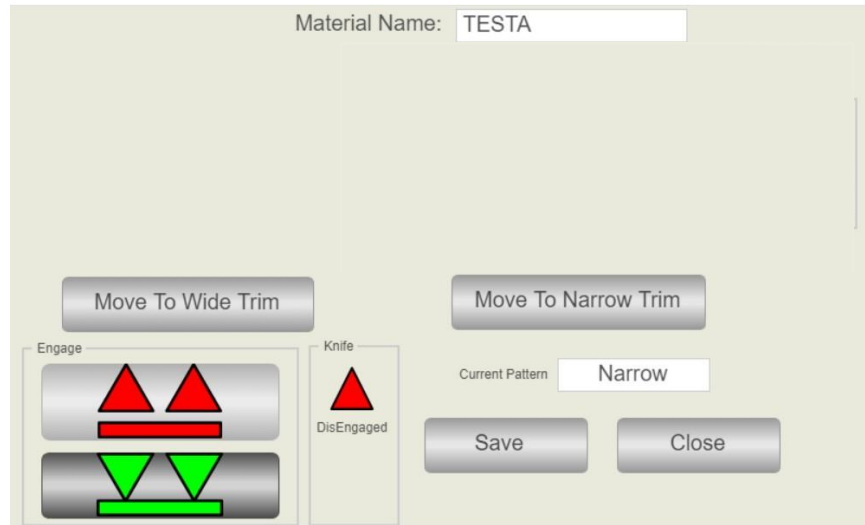
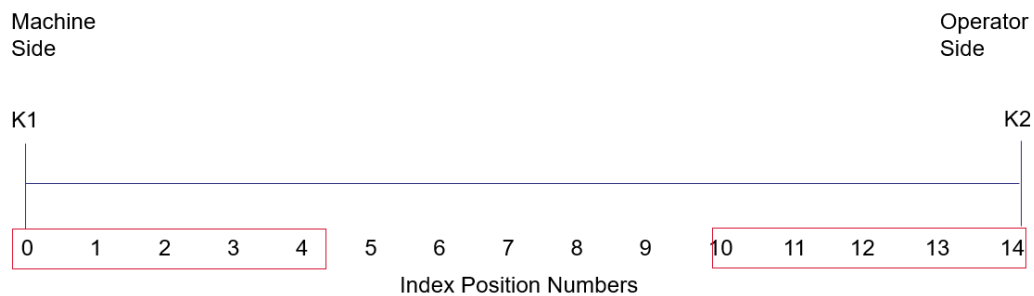


Figure 25 – Wide and Narrow Trim Screen

The Narrow and Wide trim position for each material is defined by an Index location, and a unique cut-depth tuning for Knife 1 (K1) and Knife 2 (K2) at those positions.

IMPORTANT – the Narrow and Wide trim positions are used for the material setup and do not need to match exact positions that will be used while running. The system will allow for running patterns with trim widths outside the Wide or inside the Narrow.

The material Index positions are spaced around 1 inch apart across the anvil and are numbered sequentially from 0 to 14 (zero on the machine side, 14 on the operator side).

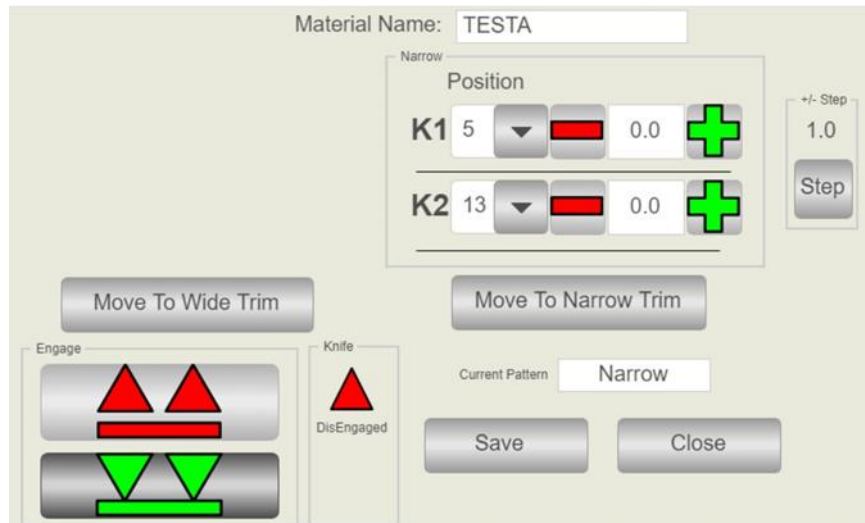


Knife 1 (K1) uses Index positions 0–4 and knife 2 (K2) uses index positions 10–14.

Note: Index numbers may vary for different web widths

HMI (Operator Interface) SCREENS

The Narrow and Wide trim positions must be Tuned at positions where web material is between the blades and the anvil.



For best results, choose a Wide position that is close to the outside edges of the material and a Narrow position that is close to the narrowest trim width that might be used for that material.

- 1) Touch “Move to Wide Trim”, and the knives will move to the Index positions as selected with the dropdown menus.
- 2) Using the dropdown menus, pick the desired Narrow and Wide trim positions for both K1 and K2.
- 3) With the web in place, use the green arrow button engage the knives.

Note: knives must be engaged to perform the fine-tuning

- 4) With the knives engaged, begin running material through the RD AutoScore. Run enough material to allow the cut quality to be checked on the exit side of the unit.
- 5) Stop the web motion – see the machine instructions from the manufacturer on how to do this.
- 6) With the web stopped, check the cut quality of K1 and K2 by manually peeling the liner of the web after it exits the blades and anvil.
- 7) For K1, if the cut is too deep, use the red Minus (–) in the K1 section to decrease the knife impression. Each push raises the knife by 1.0 or 0.2 units. Use the 1.0 for large adjustments and 0.2 for fine adjustments.

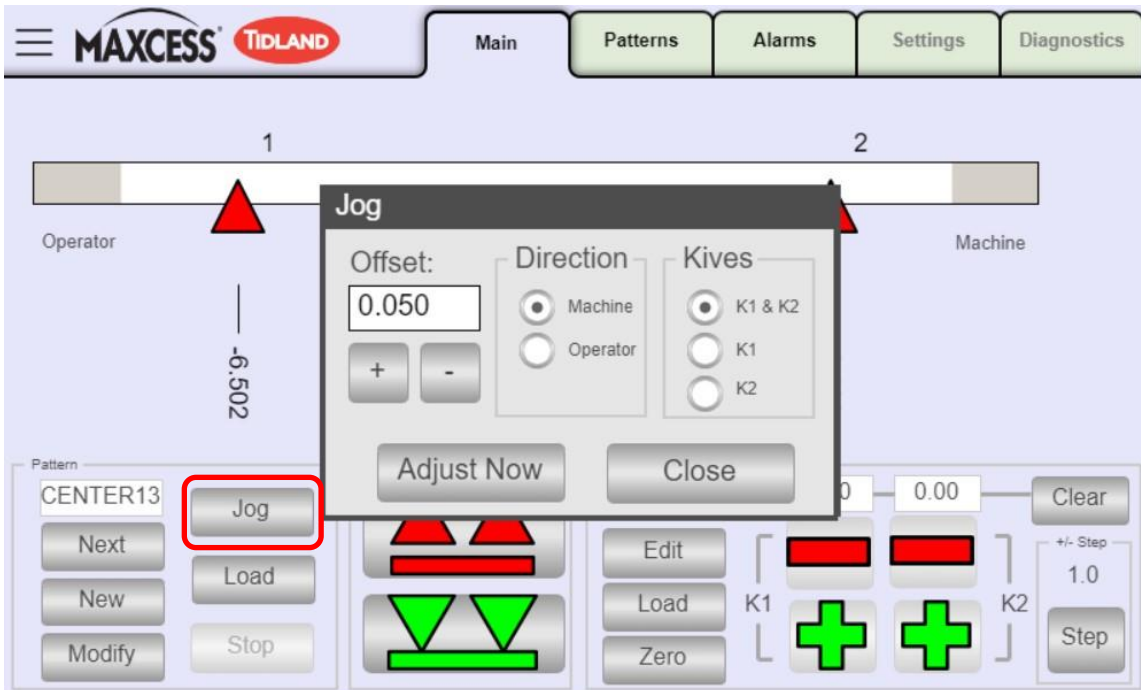
HMI (Operator Interface) SCREENS

- 8) If the cut is too shallow, use the green Plus (+) in the K1 section to increase the knife impression.
- 9) Adjust the depth of K2 in the same way, using the Plus (+) and Minus (-) in the K2 section.
- 10) After both K1 and K2 are adjusted, run additional material through the machine. Re-check the resulting cut quality on the web after it exits the blades and anvil.
- 11) Press the Move to Narrow Trim button, this moves the blades to the index position as selected with the dropdown menus in the Narrow section. Follow the steps above to set the K1 and K2 knives to the proper cutting depths.
- 12) Adjustments are automatically saved to the material name for future use at the same knife positions.
- 13) When finished, push “Save” on the Material dialog box, then Close.

6.8 Jog Screen

On the Main screen, the bottom left corner contains the Jog section. Use this section for laterally adjusting the knife positions in the operator or machine directions. Click both knives to keep the trim width the same, or individually adjust a knife in the operator or machine direction, this will change the trim width.

IMPORTANT – Blades automatically disengage before performing a Jog movement, then engage after the movement is complete.



Jog Screens

Touch the Jog button in the Pattern section. This will open a dialog box for entering the Offset amount, direction, and selecting the knives.

Enter the desired dimension Offset, select the direction, choose whether to apply the offset to K1 & K2, only K1, or only K2, and then touch Adjust Now.

To close without jogging, touch Close to return to the main screen.

6.9 Fixing Cut Quality Issues while Running

Many variables can contribute to cut depth changes while running a job. Those variables include:

- Blade wear
- Thermal expansion/contraction
- Material caliper variation from roll start to finish
- Tension changes
- Web speed changes

If cut quality issues are observed while running, take the steps in the following order to fix the issue:

- 1) On the Main screen, use the Material and Cut Depth section to individually increase (+) or decrease (-) the blade impression for K1 or K2 until a good cut quality is achieved. If blade is not cutting deep enough, operator can press the (+) button while the web is running. If blade is cutting too deep and the impression needs to be decreased, press the (-). Note that the web needs to be stopped while adjusting the (-) as the motor travels further than the desired location then increases back to the desired location to minimize motor backlash.
- 2) If the 1.0 step size is unsuccessful finding a good cut result between either too deep or too shallow, change to the 0.2 by pressing the “Step” button and try again.
- 3) If good cut quality is not maintained, replace blades with new or re-sharpened blades, perform a Zero, and repeat step 1 to adjust to the proper cut depth.

NOTE - If issues persist, contact Maxcess Tidland for support to check system function and/or update calibration mapping of the system.

NOTE – If a material needs to be adjusted the same amount each time it is loaded it may be beneficial to save the material changes as shown in Section 6.7.1

6.10 Patterns Screen



Figure 26 Patterns Screen

The patterns screen allows user to:

- Retrieve existing patterns
- Set new patterns
- Edit existing patterns

The left side of the screen allows user to change the order the patterns are queued

6.11 Alarms screen

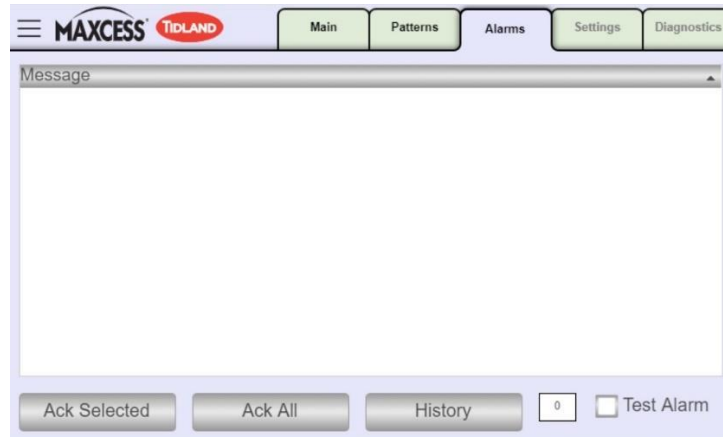


Figure 27 - Alarms Screen

The alarms screen allows user to:

- Acknowledge Selected or All error codes. The user can also view the History of saved alarms

Please see Table 5 for a complete list of error codes and information on how or why the error has occurred.

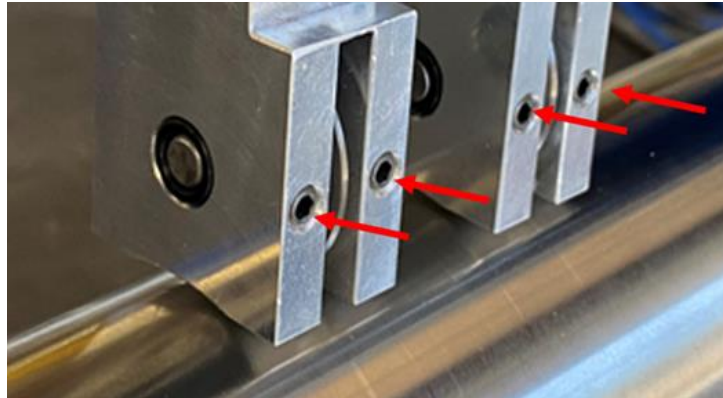
6.12 Blade Change

The RD AutoScore uses standard RD Score blades from Rotometrics

NOTE - Contact Rotometrics for part numbers to order new blades.

Blade changes are done without removing the knife carriages from the RD AutoScore system.

First, press the red disengage button to retract the blades. Then loosen the set screws in 2 places on each knife carriage.



Remove the pin from the side of the holder, and remove the blade

Place a new blade in the knife carriage, and reinstall the pin

Tighten the four (4) set screws to 30 inch-lbs.

NOTE – After changing blades, perform the Zero function prior to running material or making adjustments to the cut depth or material settings

NOTE: On sensitive materials, some fine-tuning may still be required after performing the Zero function

6.13 General Information Screen (Administrator & Maxcess Login Only)

Use this screen to define the system Units of measure, update the default pattern reference values, reset knife cycle counts (only if a new knife carriage is installed), and to set the Fine Adjustment 1.0/0.2 step sizes.

Other settings are setup at the factory per the system’s specifications. Consult Maxcess Service before making changes.

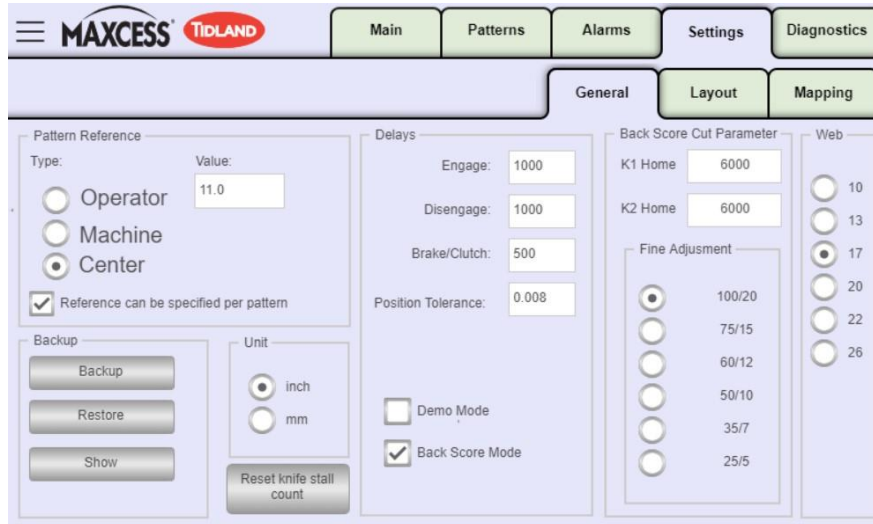


Figure 28 – General Screen

NOTE: Changing Units will not automatically update the Pattern Library. Patterns saved in one unit of measure WILL NOT WORK if the system is changed to other units.

6.14 Layout Screen (Administrator & Maxcess Login Only)

Use this screen to setup the display screen and define if the operator or machine side is on the Right or Left of the screen.

The Beam start/stop, Knife count, and Nominal Tolerance are setup at the factory per the system's specifications. **Consult Maxcess Service before making changes.**

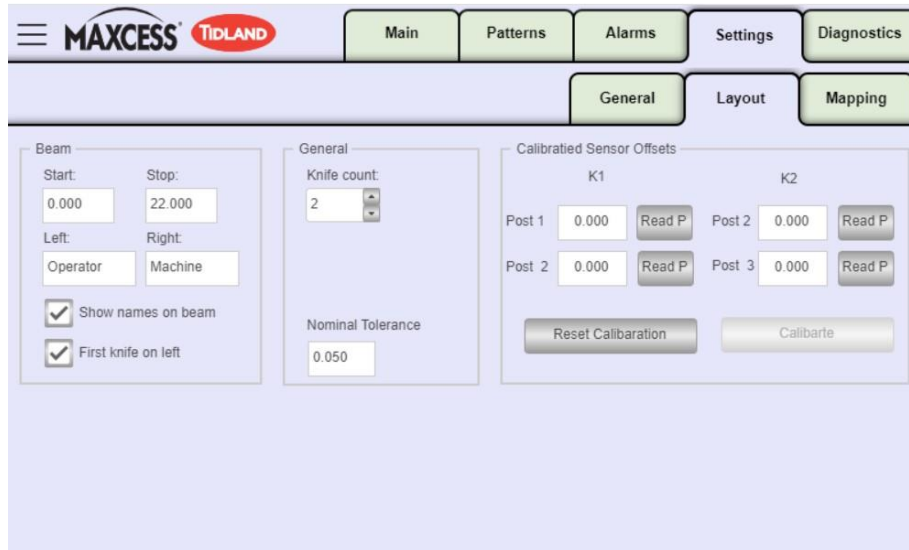


Figure 29 – Layout Screen

6.15 Mapping Screen (Administrator & Maxcess Login Only)

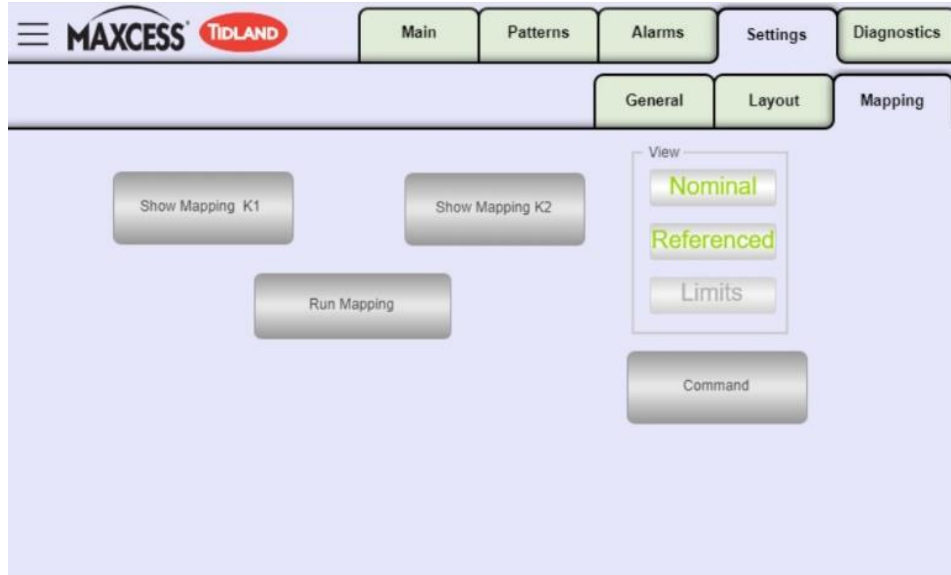


Figure 30 – Mapping Screen

Use this screen to setup zero position across the length of the anvil. This should ONLY be completed during unit installation, or in the event the anvil has been damaged or removed. Press “Run Mapping” Button to start the anvil mapping process. This process takes approximately 1 hour to complete. Once started, the process should not be interrupted. **Consult Maxcess Service before making changes.**

6.16 Valves Screen (Administrator & Maxcess Login Only)

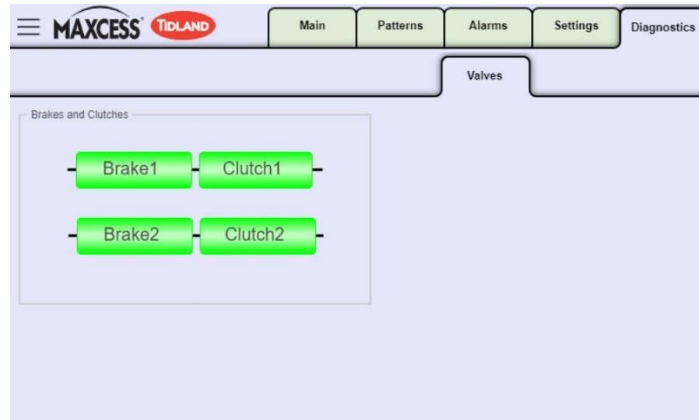


Figure 31 – Valves Screen

The Valves page can be used to manually cycle on/off the air valves for Knife 1 brake and clutch, and Knife 2 brake and clutch.

Touch the name of the brake or clutch to cycle on (green) or off (grey).

7 RD AutoScore Troubleshooting

Problem	Possible Cause	Recommended Solution
Knifeholder scoring blade does NOT appear to be moving	Material Cut Depth is not deep enough to cut material	Zero blades, select Default Material, engage the blades and check if the blades engaged with the material
	Binding inside control body carriage	Clean vertical slide key and bushings
	Motor cable is disconnected or damaged	Check motor cable is properly plugged in and there is no damage to the cable
	Motor is bound or not working properly	Login to system as an Administrator, engage then disengage the scoring blades, verify that the motor counts shown on the home screen change
Poor slit quality	Blade is worn	Change to a new Rotometrics scoring blade
	Loose blade clamp screws	Tighten blade clamp screws
	low/ no air pressure	Check machine air pressure then verify carriages do not move by physically pushing or pulling them along the linear rail

TROUBLESHOOTING

Carriages do not move along linear rail	Low/ no air pressure is causing the brake and clutch to not engage with the frame	Check machine air pressure then verify carriages do not move by physically pushing or pulling them along the linear rail
	Motor cable is disconnected or damaged	Check motor cable is properly plugged in and there is no damage to the cable
	Clutch and/or brake valve(s) are not functioning properly	Login to system as an Administrator, Go to the diagnostics tab, manually cycle the brake and clutch solenoids for each knife.

Table 4 - Troubleshooting

7.1 RD AutoScore Error Codes

The following are the error codes for the AutoCut

Code	Type	Description	Trigger
E01	Alarm	Knife #1 position magnet not found	No reading from knife magnet
E02	Alarm	Knife #2 position magnet not found	No reading from knife magnet
E03	Alarm	Position Move Failure, please check air/hose, belt motor, and try move again	Lateral position change command is sent, but no change in knife position is detected
E04	Alarm	The Position Reading is not correct, check connections	Planned position in software and actual position do not match
E05	Alarm	Knife #1 position too close to edge	Knife position is outside maximum trim width
E06	Alarm	Knife #2 position too close to edge	Knife position is outside maximum trim width
E07	Alarm	Knife carriage has reached recommended service life	Count of # of stall-out cycles (zero or map) reaches 8000
E08	Alarm	Narrow web width may need cut depth adjustment; do not save changes	Knives are positioned closer than the defined "narrow" position
E09	Pop-Up Warning	Knife #1 cut depth move failure, check carriage	After a cut-depth change command (engage, disengage, +/-), warning triggered when no change is detected with encoder motor counts
E10	Pop-Up Warning	Knife #2 cut depth move failure, check carriage	After a cut-depth change command (engage, disengage, +/-), warning triggered when no change is detected with encoder motor counts

Table 5 - Error Codes

8 Major Component Removal and Installation

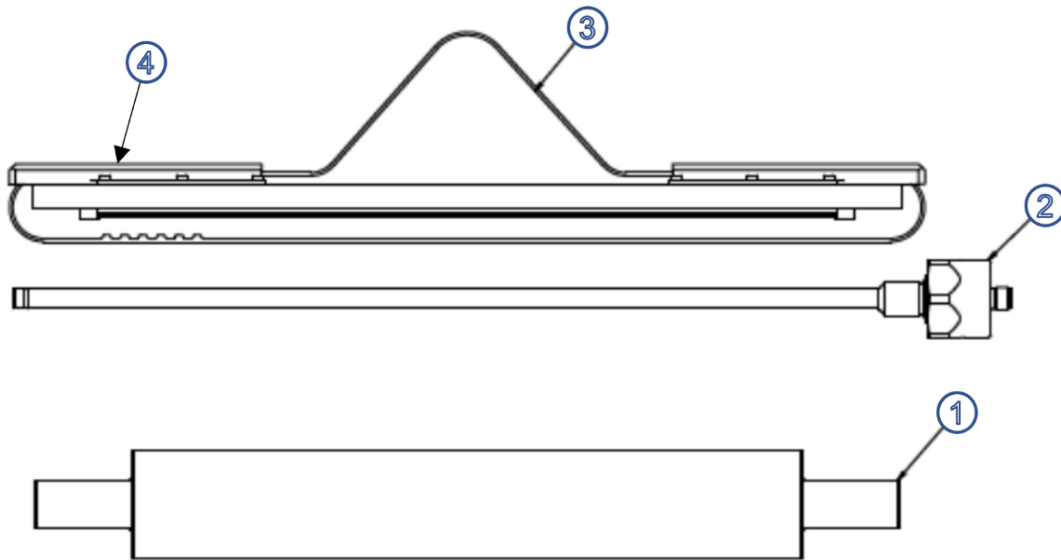
NOTE

This section is under development and will provide QR codes linking to videos showing Removal and Installation of all Major Components

MAJOR COMPONENTS

9 RD AutoScore Major Components

9.1 Web Width Components



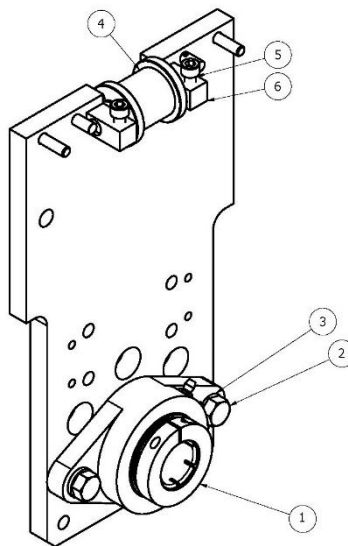
Item	QTY	Maxcess P/N	Description
10" Web Width Assembly			
1	1	270048841	Anvil
2	1	270048837	Linear Transducer
3	1	270048849	Timing Belt
4	2	270049416	Top Belt Guard
13" Web Width Assembly			
1	1	270048729	Anvil
2	1	270048731	Linear Transducer
3	1	270048730	Timing Belt
4	2	270049084	Top Belt Guard
17" Web Width Assembly			
1	1	270048745	Anvil
2	1	270048743	Linear Transducer
3	1	270048744	Timing Belt
4	2	270049085	Top Belt Guard
20" Web Width Assembly			
1	1	270048842	Anvil
2	1	270048838	Linear Transducer
3	1	270048850	Timing Belt
4	2	270049633	Top Belt Guard

MAJOR COMPONENTS

Item	QTY	Maxcess P/N	Description
22" Web Width Assembly			
1	1	270048843	Anvil
2	1	270048839	Linear Transducer
3	1	270048851	Timing Belt
4	2	270050047	Top Belt Guard
26" Web Width Assembly			
1	1	270048844	Anvil
2	1	270048840	Linear Transducer
3	1	270048852	Timing Belt
4	2	270050049	Top Belt Guard

Figure 32 - RD AutoScore Web Width Components

9.2 Machine Frame Components

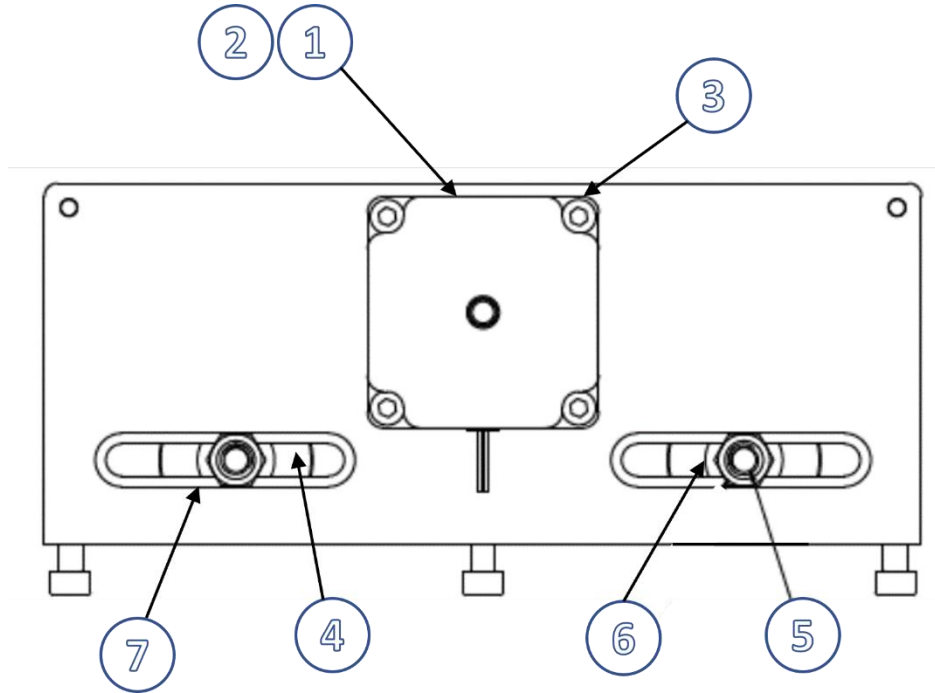


Item	QTY	Maxcess P/N	Description
1	1	270049966	Bearing
2	2	891384	Lockwasher, Split 3/8" ID ZINC PLT
3	2	581486	HEX HD CPSCR 3/8-16 UNC-2A x 1 ANSI ASME B18.2.1
4	1	270048734	Side Frame Belt Idler
5	2	131830	SOC HD CPSCR M6 x 1 x 16mm DIN 912
6	2	270045206	Thrust Washer PTFE

Figure 33 - RD AutoScore Frame Components

MAJOR COMPONENTS

9.3 Motor Components

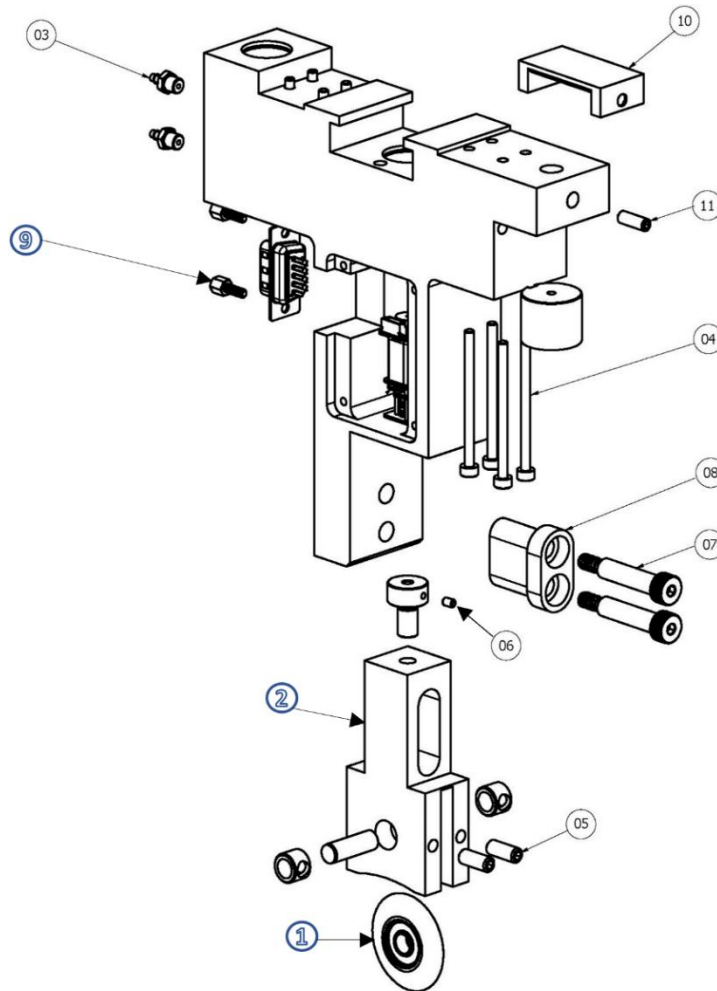


Item	QTY	Maxcess P/N	Description
1	1	270048736	Motor Mount
2	1	270048735	Motor Assembly with Cable
3	4	131830	SOC HD CPSCR M6x1x16mm DIN 912
4	2	270045203	Idler
5	2	270045204	Shoulder Bolt
6	2	270045206	Washer PTFE
7	4	270045205	Bearing <i>(Not Shown, bearings are under washer)</i>

Figure 34 – RD AutoScore Motor Components

MAJOR COMPONENTS

9.4 Carriage Components



Item	QTY	Maxcess P/N	Description
1	1	270048659	Blade And Bearing Assembly
2	1	270048498	Blade Holder
3	2	27L250423	Barb Fitting 10-32NF TO 5/64 ID
4	8	685108	Linear Bearing Screws
5	2	270048660	Set Screws for Blade in Holder
6	1	130742	Set Screw for Motor Drive Shaft
7	2	270031641	Shoulder Bolts for Vertical Slide Key
8	1	70048497	Vertical Slide Key
9	2	270048507	D-Sub Connector Stand-offs
10	1	270048646	Clutch Backing Plate
11	1	130149	Clutch Backing Plate Screw
12	1	270048663	Complete Carriage Assembly (not shown)

Figure 35 – RD AutoScore Carriage Components

9.5 Power and Control Cabinet

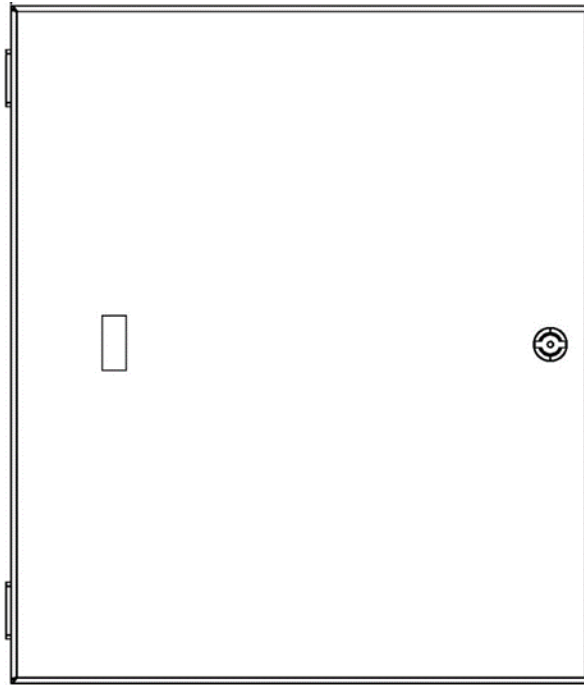
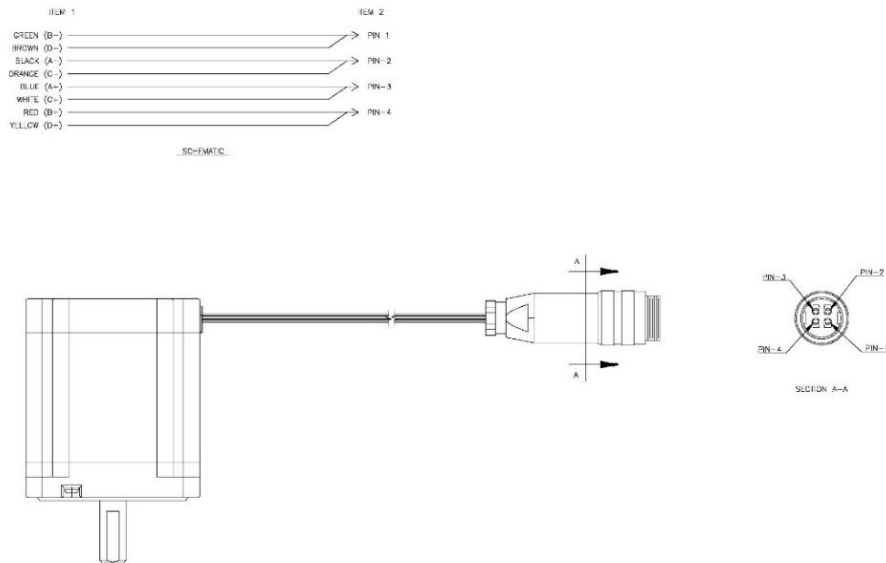


Figure 36 – Power/Control Cabinet P/N 270048990

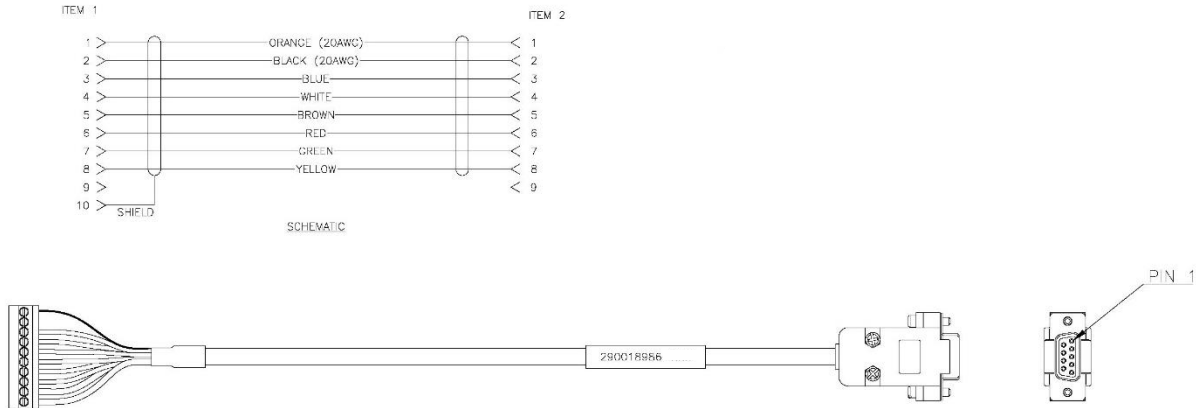
9.6 RD AutoScore Cable Assemblies



NOTE – The default cable length is 5 Meters.

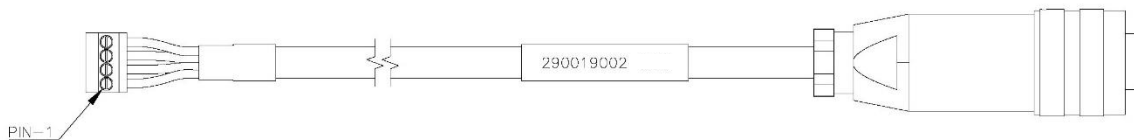
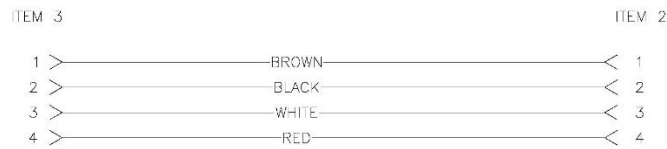
Figure 37 – Stepper Motor and Cable Assembly – P/N 270048735-005

MAJOR COMPONENTS



NOTE – The default cable length is 5 Meters.

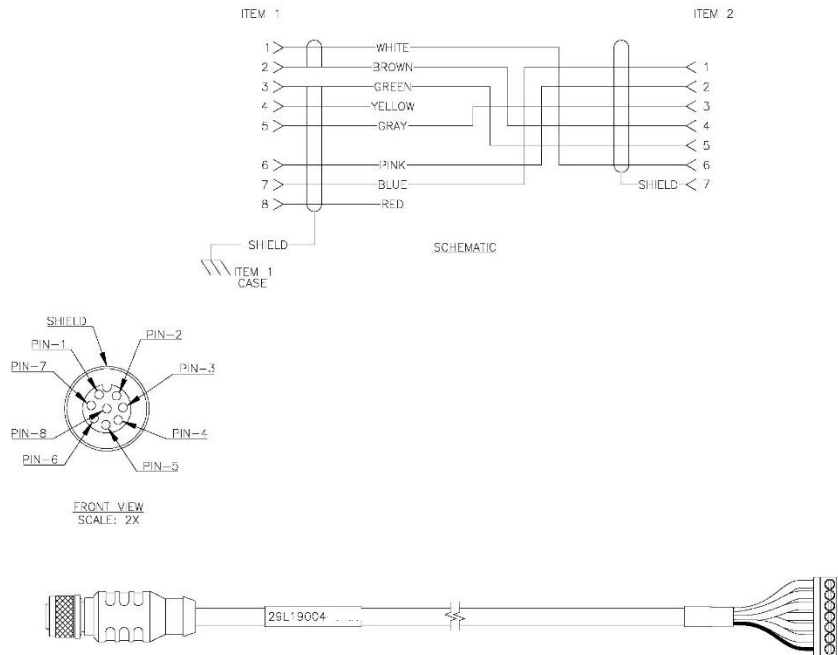
Figure 38 – Carriage Interconnect – P/N 290018986–005



NOTE – The default cable length is 5 Meters.

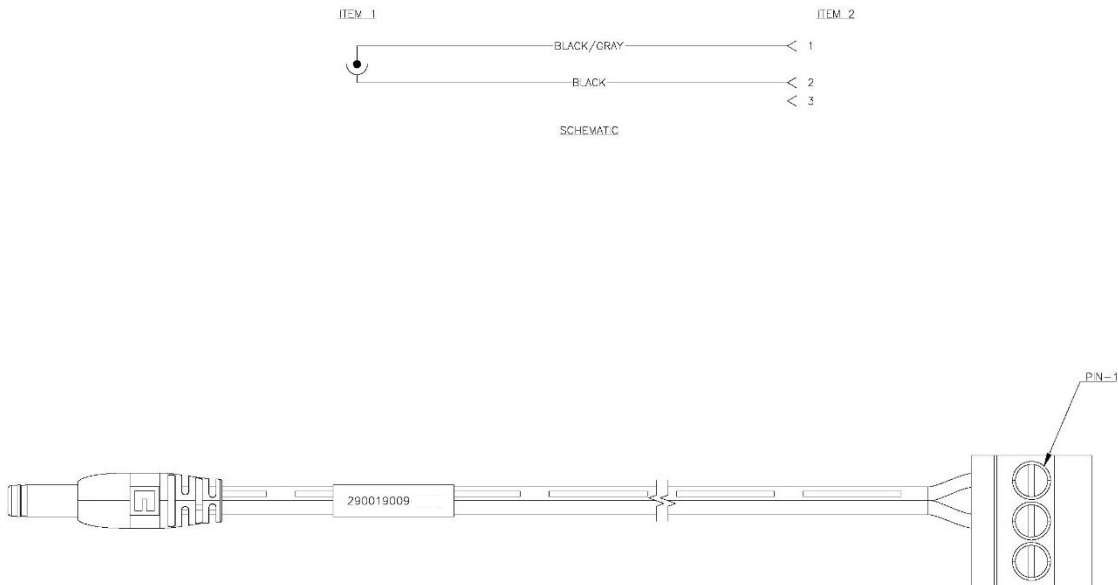
Figure 39 – Motor Interconnect – P/N 290019002–005

MAJOR COMPONENTS



NOTE – The default cable length is 5 Meters.

Figure 40 – HMI (Operator Interface) Power Cable – P/N 29L19004-005



NOTE – The default cable length is 5 Meters.

Figure 41 – HMI (Operator Interface) Power Cable – P/N 2900019009-005

10 Service

If you have any questions about the products in this document or need to speak with a Customer Service representative, please use the contact information below.



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