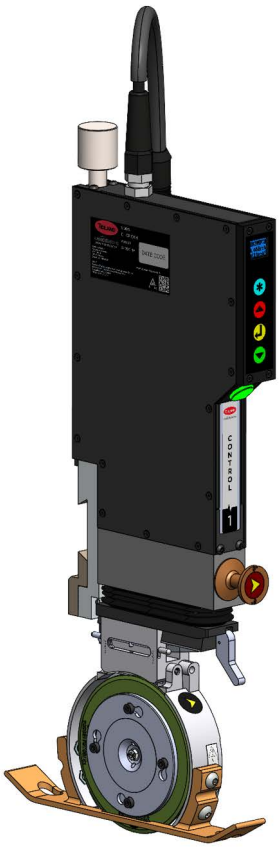
TIDLAND SLITTING SOLUTIONS

TIDLAND

A MAXCESS BRAND

Control Series
Knifeholder Class I
Installation and Maintenance



EN

270049666



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External links

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Electrical Drawings

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1 INTRODUCTION

Receiving and unpacking

Handle and unpack the equipment carefully. Upon arrival, check shipment against the packing list.

Promptly report to the carrier any damaged equipment.

Equipment that will not be installed immediately should be stored in a clean, dry location.

Be careful to prevent moisture, dust, and dirt from accumulating in storage and installation areas.

Before operation, check for damaged or missing fasteners. Control Series electronic knifeholders are designed to operate at optimal levels when all fasteners are installed and tightened to recommended torque values.

If any fasteners are damaged or missing, please contact the equipment manufacturer or Maxcess.

Before operation



Read the Safety section of this manual before installing the cabinet or handling a knifeholder.



If not using a PC supplied by Maxcess, install the software that was supplied with your knifeholders. This will ensure that you have the most current version of the software on your computer.



Before applying system power, ensure that all cables are properly plugged in.

Introduction.fm

About these instructions

These instructions contain important information for safe and efficient installation or maintenance of the Tidland Control Series electronic knifeholders. Observing these instructions helps to avoid dangers and increase the service life of the knifeholder.

The instructions must be carefully kept and must always be available throughout the service life of the knifeholder system.

When using these knifeholders, always follow basic safety precautions to reduce the risk of personal injury.

Your company's safety instructions and procedures should always be followed.

When using this product with any other equipment or machinery, all safety requirements stipulated by that equipment or machinery manufacturer must be followed.

Compliance with local, state, and federal safety requirements is your responsibility.

User interface manuals

This manual is intended to be used with the supporting documentation provided with your system:

Operation User Manual

PC software interface (optional) PC Interface usermanual

Wireless operation (optional) User manual

Proper use

Tidland Control Series knifeholders are designed and manufactured for cutting material webs according to the shear slitting procedure in the direction of motion of the material. Any other use is deemed as not being in accordance with the intended purpose. The manufacturer will not be liable for any damage resulting from this improper use. The user/operator bears sole responsibility for the risk.

Operating principle

The Tidland Control Series electronic knifeholder has motorized overlap and side force control. The knifeholder comes configured with a default overlap of 0.035" and 2 lbs of side force.

Press buttons on the membrane keypad and see the OLED screen to calibrate, engage, and disengage the knifeholder. Long press to switch to set side force and overlap adjustment, address and others.

Maxcess can also provide an optional industrial touchscreen PC with software for knifeholder control and advanced diagnostics.

Safety equipment

If the electrical power fails, the blade will stop and remain in that overlap and side force position.

All replacement parts used on this product shall be made to original Tidland specifications.

TUV and CE

TUV approved knifeholders have the TUV mark affixed to the back of the knifeholder.

Control Series electronic knifeholders comply with the 2006/42/EC Machinery directive and the 2004/108/EC Electromagnetic Compatibility directive.

Language

These are the original instructions, written in English.

Help tool

For systems with PC software control interface:

The Control Series Help Tool is for use with the Windows version of the Tidland Electronic Knifeholder Software System. It can be accessed through the menu bar on the interface display. If you have any questions that cannot be answered with the Help Tool, please contact Maxcess.

Emergency stop

E-stop circuit

This TUV approved device is not provided with its own E-stop and may only be installed in a completed system equipped with a compliant E-stop circuit.

The E-stop circuit gives the operator the ability to shut the entire system off quickly in case of an emergency.

Upon activation by an E-stop button, power shall also be removed from the system.

Removing the power from the cabinet creates a zero energy state, category 0, according to the NFPA-79* (controlled stop).

Upon releasing the E-stop button, power is not delivered until some deliberate action is completed. Restarting of the machine requires operation of the start button.

Follow local electrical codes to conform with E-stop conditions.

---

* EN60204-1 (European Union standard)

Lockout/tagout procedures

To prevent unexpected system startup, always obey your company lock-out/tag-out procedures and test the system for a zero-energy state before beginning maintenance on a Tidland knifeholder system.

2 SAFETY

Instructions for use

The problem-free and safe operation of the Tidland Control Series Knifeholders is reliant on proper transportation and storage, expert installation and commissioning, and on use in accordance with the intended purpose.

Only persons who are familiar with the installation, commissioning, operation and maintenance of the knifeholders and who possess the necessary qualifications for their activities may work on the knifeholders.

Please note the following:

- The content of these operating instructions
- Any safety instruction on the device
- The machine manufacturer's specifications
- The applicable accident prevention and environmental protection guidelines

Information about safety instructions

The safety instructions and symbols described in this section are used in these operating instructions. They are used to avoid possible dangers for users and to prevent material damage.



SIGNAL WORD
Source of danger and its results.
Avoiding dangers

Signal words

The signal word **DANGER** refers to the danger of death or serious bodily injuries.

The signal word **WARNING** refers to the danger of moderate to severe bodily injuries.

The signal word **CAUTION** refers to the danger of slight to moderate bodily injuries or material damage.

Safety.fm

Safety symbols used in this manual



Caution
Reference to general hazards that may result in bodily injuries or damage to the device.



Warning

Knife blades are sharp.

Can cause serious injury to hands.

Do not remove safety guards.
Use only recommended tools when handling knife blades.



Warning

Pinch point.
Keep hands away from moving knifeholder parts.



Danger
Arc flash and shock hazard.
Follow ALL requirements in NFPA 70E for safe work practices and for Personal Protective Equipment (PPE).



Information
Disconnect power before servicing the knifeholder cabinet.



Information
This mark identifies important information.



Caution
To avoid static discharge, use proper grounding methods.

Residual risk

A residual risk remains, even if all safety regulations during the operation of the knifeholders are observed. Any person working with the knifeholders should be aware of such residual risks and must follow the instructions intended to avoid such residual risks developing into accidents or damage.



Warning

Work on electrical equipment shall be performed by authorized professionals only.

Before beginning any maintenance on the knifeholder, turn off main switch on the power cabinet.

Obey your company lock-out/tag-out procedure to secure the unit against unintended restarting, and then test for zero-energy state.



Warning

Duration of blade rotation during emergency shutdown (activation of the E-stop button) is system-dependent.



Warning

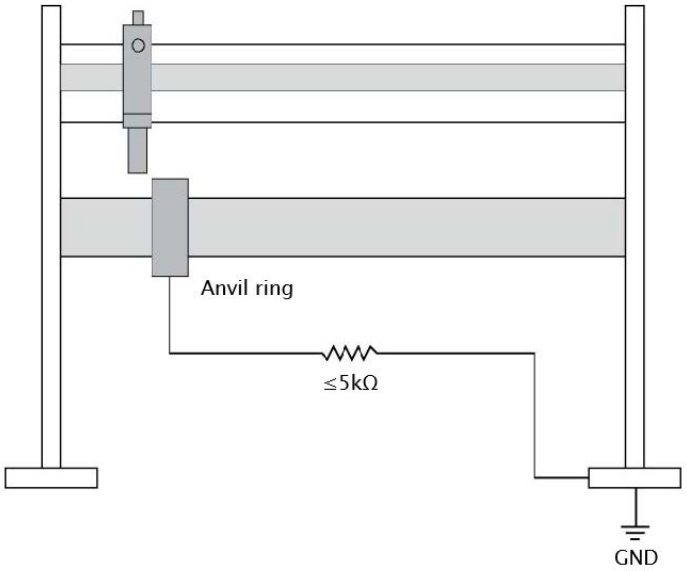
Keep hands away from moving knifeholder parts.

Safety.fm

3 SYSTEM REQUIREMENTS

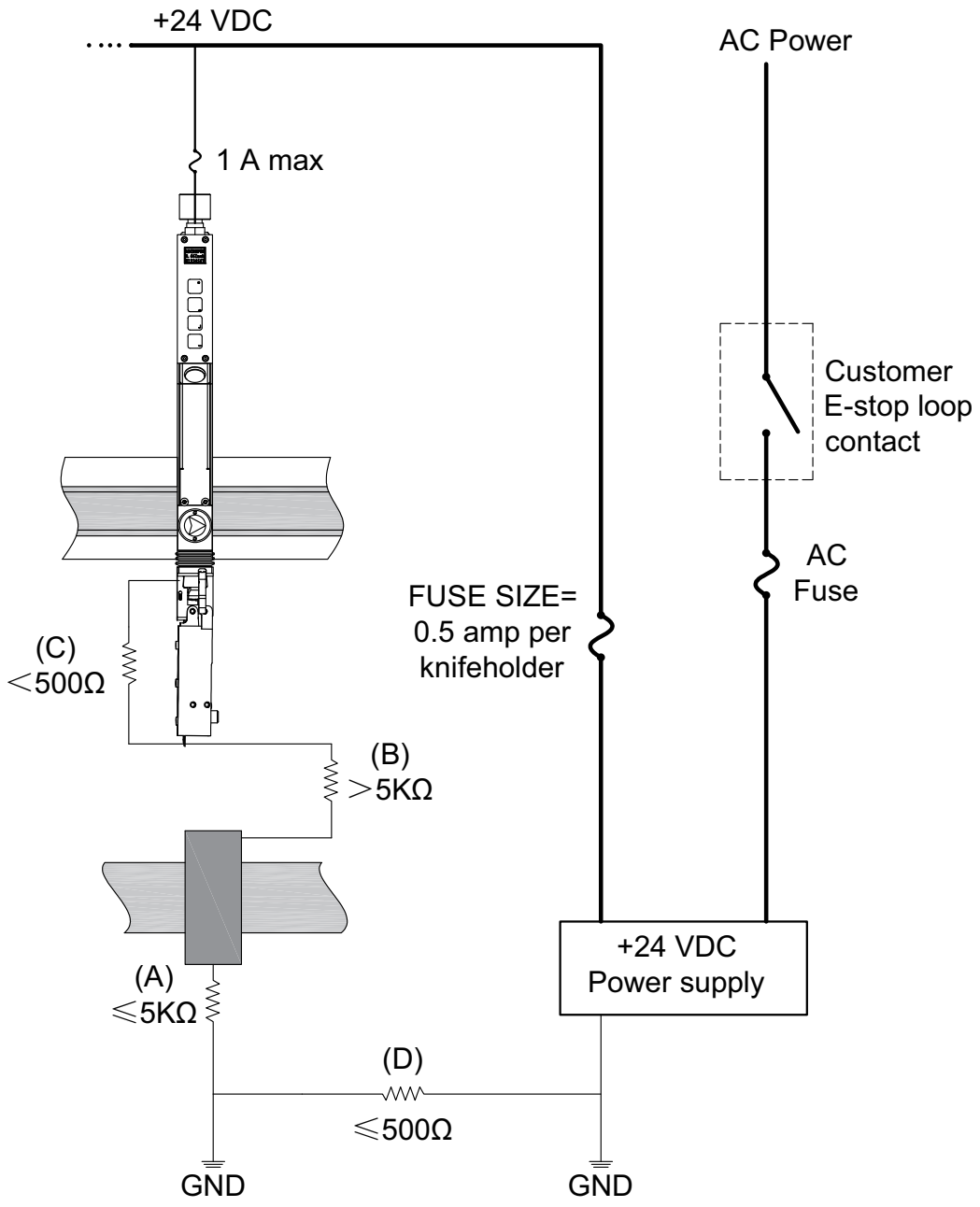
Continuity requirements

- For the electronics knifeholder to calibrate and function properly, you must verify continuity between system components.
- Use an ohmmeter to confirm ≤5kΩ between ground and the anvil ring.
- If using an expanding anvil shaft, test with the shaft expanded.
- If resistance exceeds 5kΩ, call Maxcess Customer Service; modifications to improve continuity may be required.



System requirement.fm

At installation



A. Resistance between the anvil ring and ground must be $\leq 5k\Omega$.

B. Make sure that the resistance between the top blade and the anvil ring is greater than 5 $k\Omega$.

C. If the resistance (B) falls below 5 $k\Omega$, confirm $\leq 500\Omega$ between the knife blade(s) and ground (D).

E-stop circuit

- This TUV listed device is not provided with its own E-stop and may only be installed in a completed system equipped with a compliant E-stop circuit.
- The E-stop circuit gives the operator the ability to shut the entire system off quickly in case of an emergency.
- Upon activation by an E-stop button, power shall also be removed from the system.
- Removing the power from the cabinet creates a zero energy state, category 0, according to the NFPA-79* (controlled stop).
- Upon releasing the E-stop button, power is not delivered until some deliberate action is completed. Restarting of the machine requires operation of the start button.
- Follow local electrical codes to conform with E-stop conditions.
- TUV approved knifeholders have the TUV mark affixed to the back of the knifeholder.

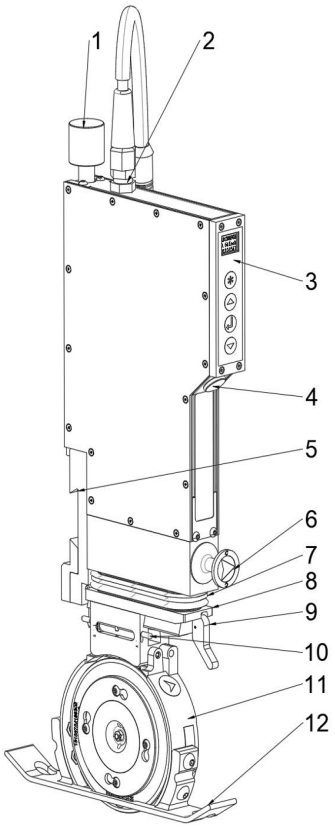
* EN60204-1 (European Union standard)

4 ABOUT THE KNIFEHOLDER

Knifeholder components

WARNING
Use jog buttons with extreme cautions.
Keep hands clear of knifes blades at all times.

Class I knifeholder shown



1	Brake knob
2	Power-/ communication cable
3	OLED and membrane keypad
4	Status LED
5	Guide bar mount assembly (gib or linear bearing)
6	Cant key
7	Knifeholder bellows
8	Control body to cartridge dovetail interface
9	Taper lock
10	Safety latch pin
11	Blade cartridge
12	Blade guard(180°)

Blade Guard cartridge part numbers: page 7-12

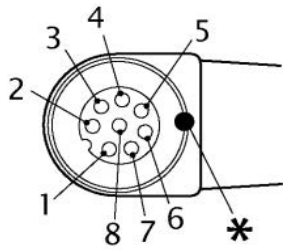
Knifeholder power and communication

Power and communication are integrated and supplied through a power cable, typically shipped with each knifeholder assembly.

Maxcess recommends turning off the power before connecting or disconnecting the knifeholder power/communication cable.

Power/communication cable

75 VDC, 2 A, 8x24 AWG, 50 deg C



1= Engage	5= Rx–
2= Tx+	6= COM GND
3= Tx–	7= VDC GND
4= Rx+	8= +24 VDC
Female end view (* =shield)	

Typical

Cable with strain relief is connected to the knifeholder internally.



Straight shielded	**270015300**

Cant key

Selection

IMPORTANT: Cant keys are unique for the Control Series Class I.

The part numbers below are only compatible with Control Series Class I. In addition, cant keys from other Tidland knifeholders are not compatible with Control Series Class I.

Cant angle options：0°, 0.25°, 0.5° ,0.75°or 1.0

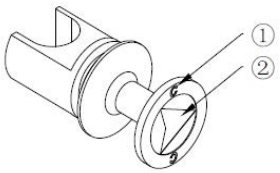
Web Path A:

Cant angle	Maxcess Asia P/N	Tidland P/N
0 deg	620001233-010	270051191
0.25 deg	620001233-021	270051192
0.5 deg	620001233-031	270051194
0.75 deg	620001233-041	270051196
1.0 deg	620001233-051	270051198

Web Path B:

Cant angle	Maxcess Asia P/N	Tidland P/N
0 deg	620001233-010	270051191
0.25 deg	620001233-022	270051193
0.5 deg	620001233-032	270051195
0.75 deg	620001233-042	270051197
1.0 deg	620001233-052	270051199

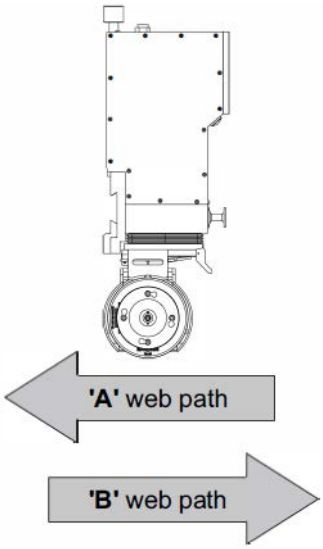
The angle is engraved in the key.



1	Cant angle
2	Cant arrow label (red or blue)

Note:
"A" web path cant keys have red labels, and "B" web path cant keys have blue labels. See page 4-5 for details.

Orientation



The arrow on the cant angle label should:

- point to the nip point (blade contact side) of the anvil ring.
- point in the same direction as the arrow on the blade cartridge.

If the arrows point in opposite directions:

- the nip point will not be closed, resulting in poor slit quality, and
- the cant key orientation needs to be reversed, **or**
- the cartridge orientation must be changed.

To change the cant key orientation, pull the key all the way out of the control body, rotate it 180° and reinstall the key, pushing it firmly into the control body.

To install a new cant key, pull the old key out of the control body and replace it with the new key, making sure that the cant key arrow points in the same direction as the blade cartridge arrow. Make sure there is an o-ring installed on the cant key.

– The cant key label color, red or blue, indicates the web path direction as determined at time of sale.

– If the web path needs to be reversed at any time, Maxcess recommends replacing the cant key with one of the correct color.

If you remove and reverse the blade cartridge, you must also reverse the cant key. Pull it out of the knifeholder, rotate to match the direction of the arrow on the cartridge and reinstall.

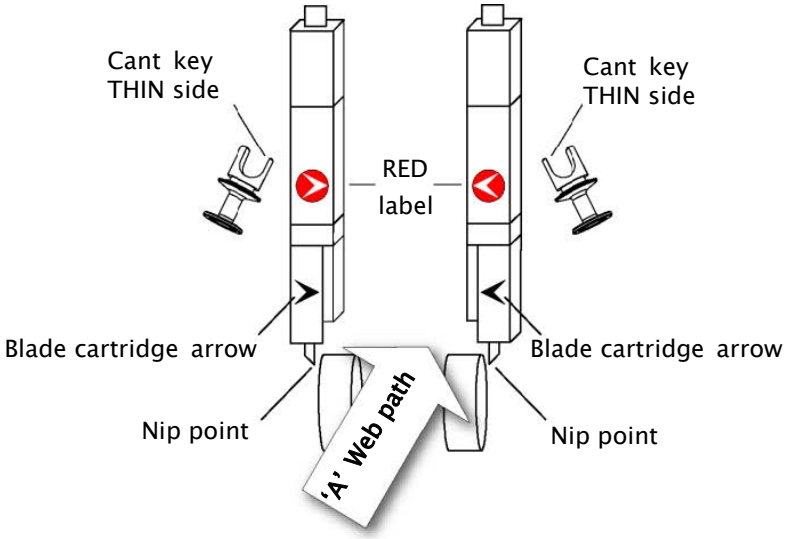
Web path

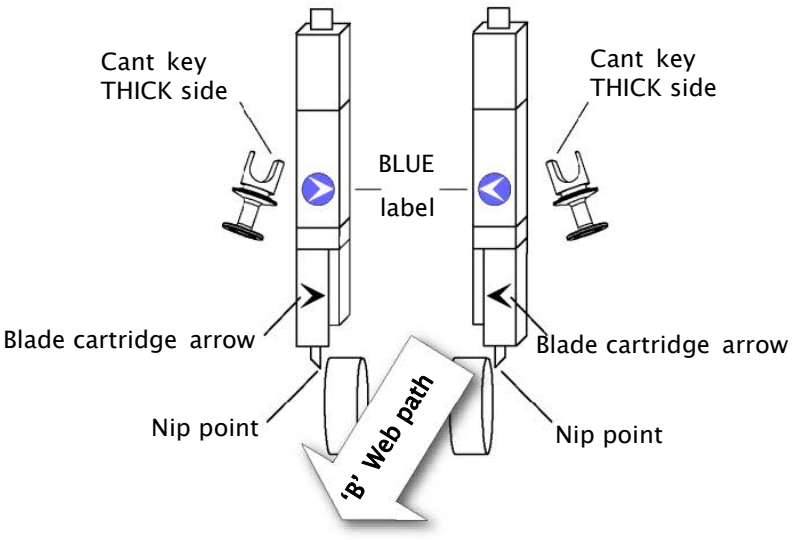
Web path, A'

- Web moves **from control side of knifeholder** toward the guide bar mount
- Cant key label is **RED**.
- Cant key arrow points toward **THIN** side of the cant key.
- Blade cartridge arrow points to the nip point (contact side of anvil ring).

Web path, B'

- Web moves **from the guide bar** mount toward the control side of knifeholder.
- Cant key label is **BLUE**.
- Cant key arrow points toward **THICK** side of the cant key.
- Blade cartridge arrow points to the nip point (contact side of anvil ring).





5 POWER CABINET

Installing the power cabinet



Danger

Arc flash and shock hazard.

Installation must comply with federal, state, and local electrical codes.

Install the cabinet according to the Tidland electrical drawings provided with your unit.

Electrical ratings

See the label inside the power cabinet for your model number.

Cabinet Model	EKH5-5S EKH5-5W	EKH5-1S EKH5-1W	EKH20-1S EKH20-1W	EKH20-1T N/A	EKH2-2N
Input rating	100-240 VAC	100-240 VAC	100-240 VAC	100-240 VAC	100-240 VAC
	1.65 A	1.65 A	4.6 A	6.6 A	1.2 A
	50 Hz or 60 Hz single-phase	50 Hz or 60 Hz single-phase	50 Hz or 60 Hz single-phase	50 Hz or 60 Hz single-phase	50 Hz or 60 Hz single-phase
Output rating	24-29 VDC	24-29 VDC	24-29 VDC	24-29 VDC	24-29 VDC
	1 A per cable	5 A	15 A	15 A	1 A per cable
Short circuit rating	200 kA RMS	200 kA RMS	200 kA RMS	200 kA RMS	200 kA RMS

Power cabinet.fm

Commissioning the power cabinet



Before connecting the knifeholders:

1. Turn the cabinet power on. (Turn knob clockwise one-quarter turn.)

2. Verify the voltage at the knifeholder end of each cable connector, according to the electrical drawing supplied with your system.

3. Turn off the power.

4. Connect the knifeholders.

5. Turn the power on again.

Servicing the power cabinet



Danger

Arc flash and shock hazard.



Service to be performed by qualified personnel only.

Disconnect power before servicing the cabinet.

Fuses

Replacing a fuse in the cabinet

For knifeholder fuses see page 8-21.

	**To reduce the risk of fire, replace fuses only with the same type as indicated for your cabinet model.**		
Cabinet Model	EKH20-1S EKH20-1T EKH20-1W	EKH5-5S EKH5-5W	EKH5-1S EKH5-1W
Input fuse Class J, 600 V	F10 and 11 10 A	F10 and 11 3 A	F10 and 11 3 A
Output fuse 3AC time delay, 250 V	F1, 15 A F2, 1 A	F1-F6, 1 A	F1, 5 A F2, 1 A

Power supply

Replacing the power supply

Replace power supply with same make and model only.

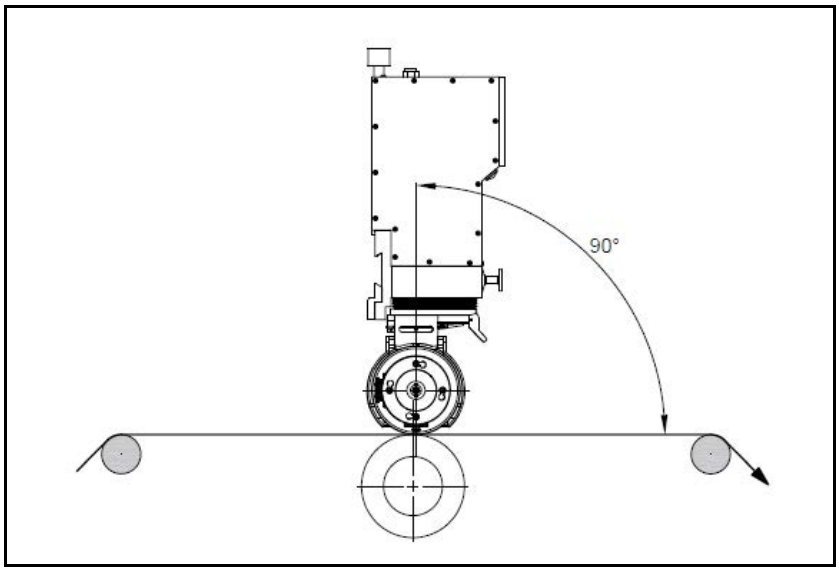
Contact Maxcess for pricing.

Power cabinet.fm

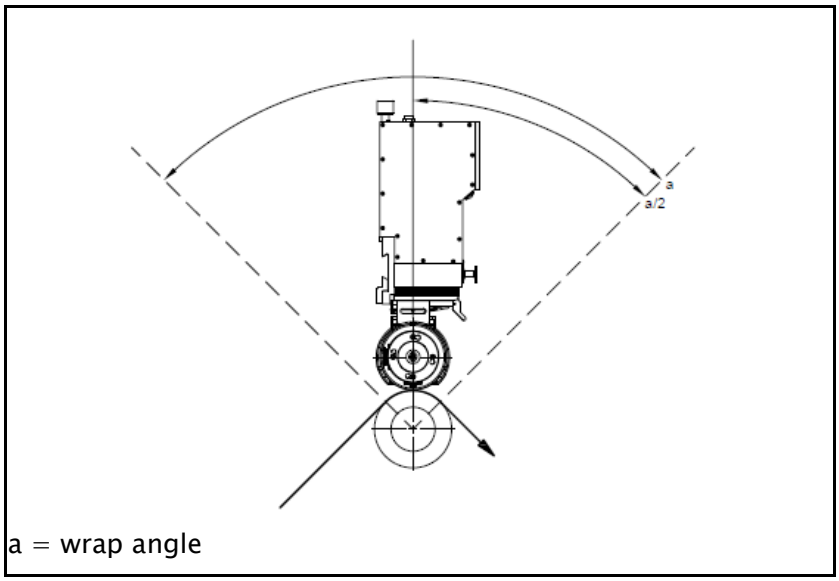
6 KNIFEHOLDER INSTALLATION

Select slitting type

Tangent slitting Knifeholder axis is 90° to web path.
Tangent slitting requires knifeholder setback.



Wrap slitting Knifeholder axis bisects the wrap angle.
Knifeholder setback is not required.



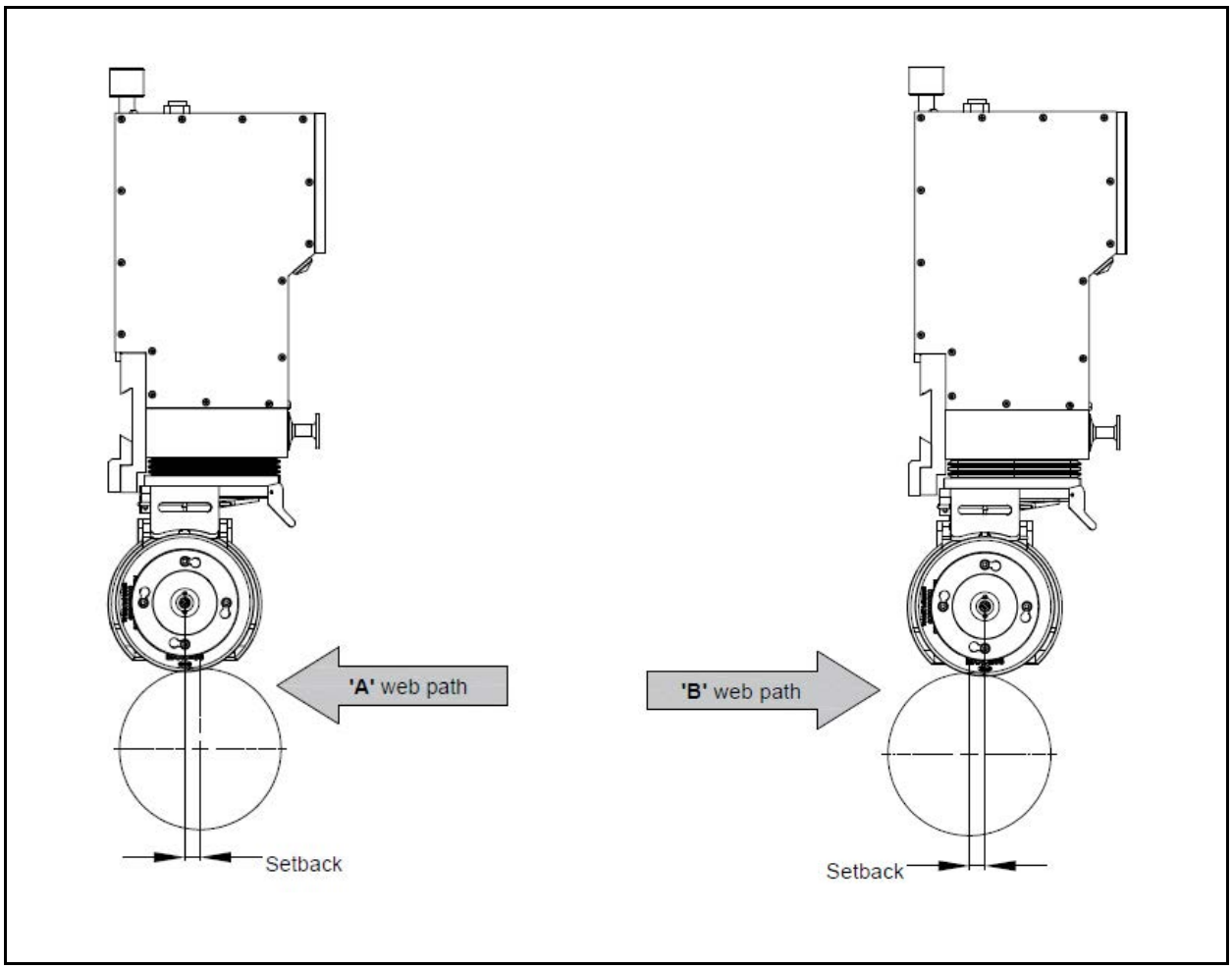
a = wrap angle

Knifeholder installation.fm

Knifeholder setback

- For tangent slitting only
- Class I profile shown.
- For best slit result, the web must be in contact with the anvil ring at the cut point. If the web contacts the top blade ahead of the cut point, the material will tear instead of slitting cleanly.
- Geometry shown is based on medium weight kraft paper. For assistance with other web materials, call Maxcess Customer Service.

Recommended setback for paper-based products:1/8”(3.18mm)

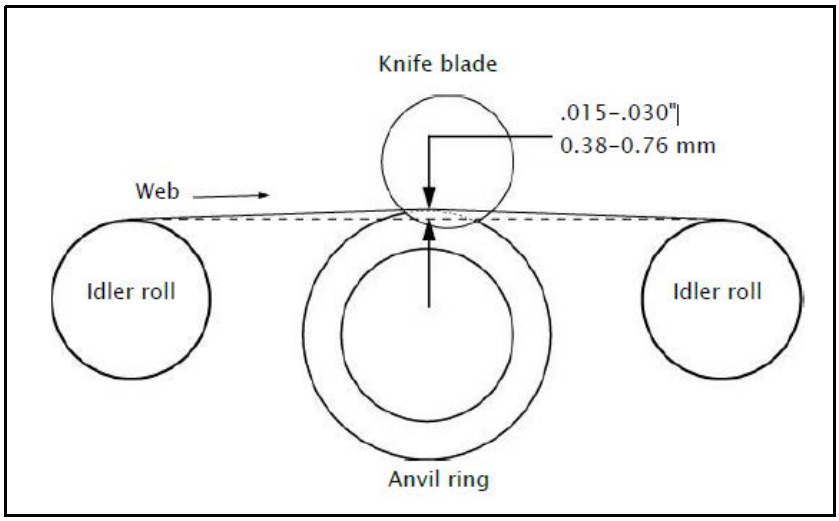


Web penetration

Tangential slitting applications

To maximize web stability at the cut point, Maxcess recommends web penetration by the anvil ring of 0.38-0.76 mm [.015"-.030"].

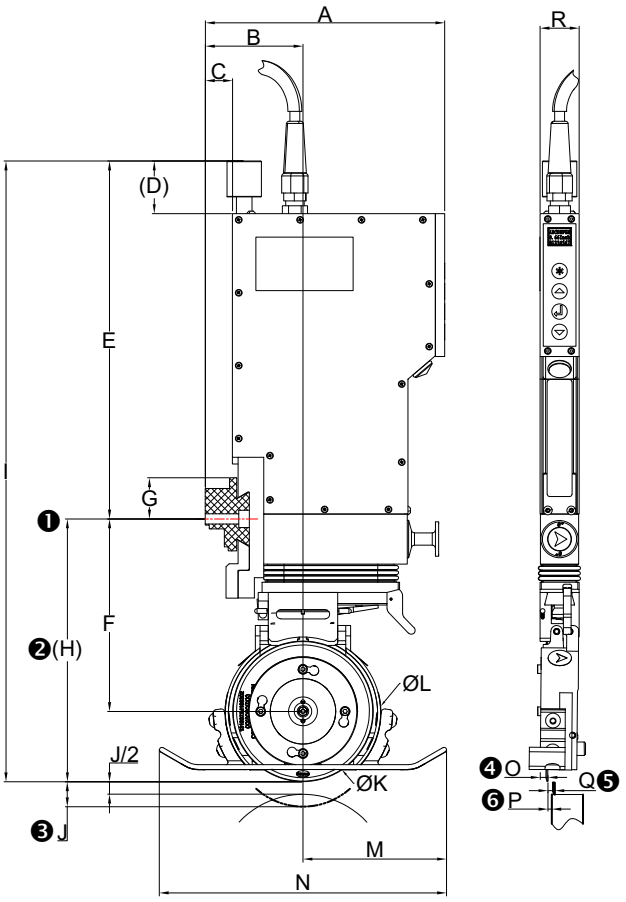
Check this measurement by laying a straight edge across the idler rolls to represent the web. Measure how far the anvil ring "penetrates" the plane created by the straight edge.



Thicker web materials require more penetration, while thinner or sensitive materials may require no penetration. Call Maxcess Customer Service for assistance.

Mounting the guide bar

Space requirements



① Center of guide bar mounting holes

② When knifeholder is retracted

③ Maximum vertical stroke

④ Blade position when retracted

⑤ Full stroke

⑥ Half stroke

Class I	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Inch	6.035	2.463	0.685	1.327	9.024	4.850	1.039	6.623	15.647	0.630	3.543	3.923	3.622	7.244	0.198	0.079	0.157	0.984
mm	153.3	62.55	17.4	33.7	229.22	123.2	26.38	168.22	397.44	16	90	99.64	92	184	5.02	2	4	25

Dimensions are nominal and represent the average of assembled units. These are not the specifications of individual parts, nor do they reflect manufacturing tolerances.

Dimension 'P' (front view) is from the edge of the knifeholder control body to the inside of the blade.

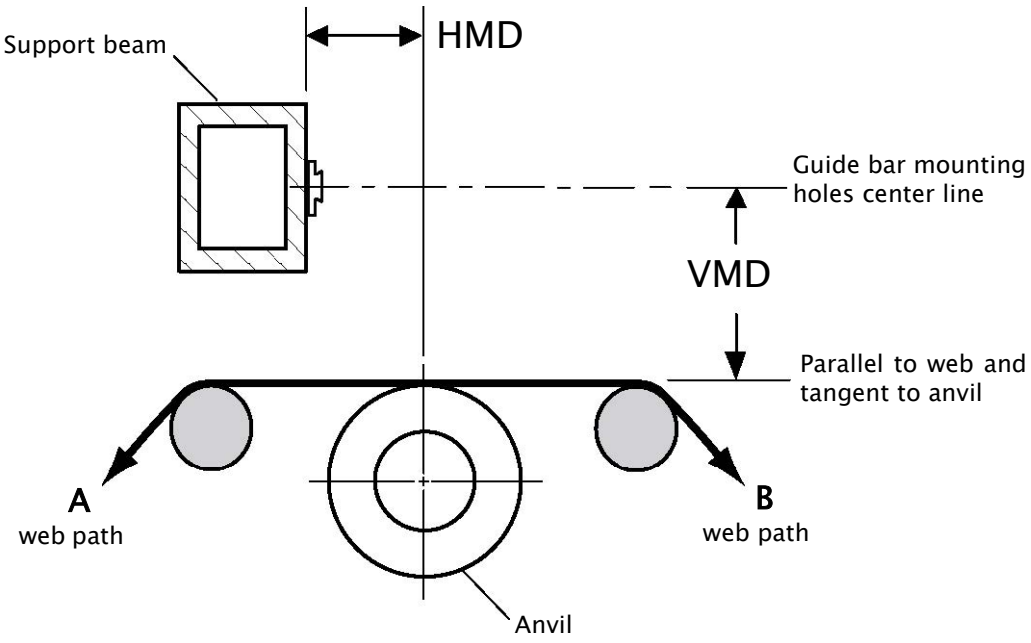
Determine mounting dimensions

Vertical mounting dimensions - VMD

The distance from the centerline of the guide bar mounting holes to the anvil roll or ring O.D. and perpendicular to the web path.

Horizontal Mounting Dimension - HMD

The distance from the support beam face (guide bar mounting surface) to the vertical centerline through the center of the anvil ring.



VMD

Tangent & Wrap Slitting:	6 -29/32"	175.4 mm

These dimensions reserve approximately 1/2 of blade cartridge stroke for blade regrinding.

HMD

Tangent Slitting *			Wrap Slitting **
	A web path	B web path	A or B web paths
Class I	2- 9/16" (65.1mm)	2- 5/16" (58.7mm)	2- 7/16" (61.9mm)

* These dimensions will result in setbacks as listed on page 6-2 .

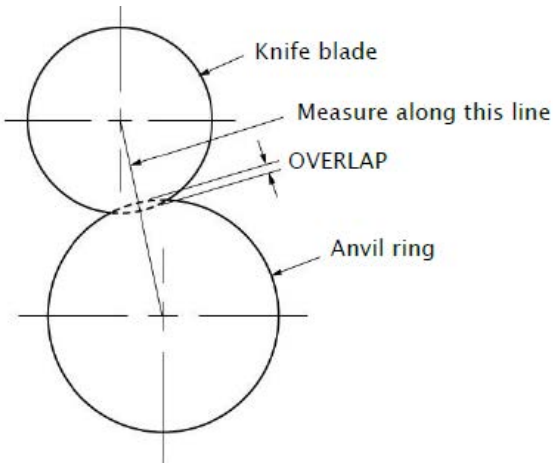
** These dimensions provide no setback.

Blade overlap

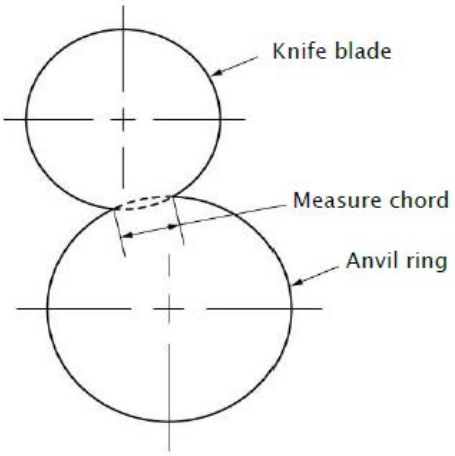
Methods for measuring overlap

The knifeholder automatically sets blade overlap. This graphic is for reference only.

Measure blade overlap directly along the common centerline of the top blade and anvil ring.



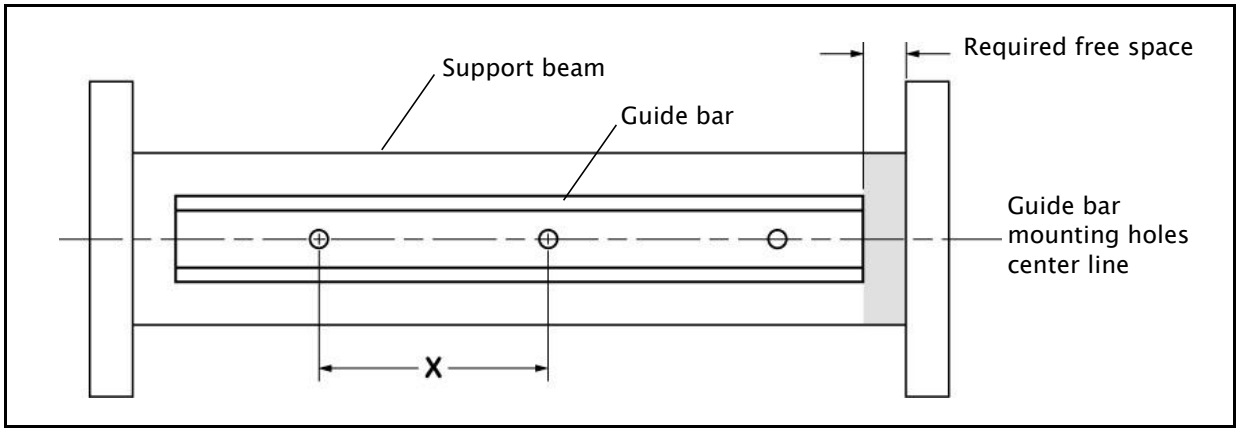
Method 1: Measure blade overlap directly along the common centerline of the knife blade and anvil ring.



Method 2: Measure the chord of the intersection between the knife blade and anvil ring.

Installing guide bar on support beam

The guide bar must be straight within 0.010" (0.25 mm) on a rigid and vibration-free support.



Determine the center-to-center distance between the mounting bolt holes (X) on the guide bar.

- Standard pre-drilled dimension (X) is 12" (304.80 mm).

- Drill and tap support beam for pre-drilled guide bar: 3/8"-16NC holes

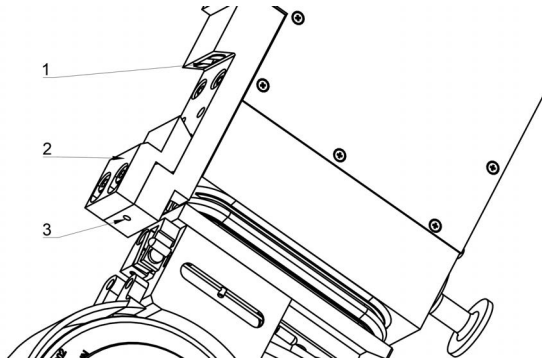
Before transferring dimension (X) onto the support beam, make sure there will be enough free space at one end of the beam for knifeholder installation and removal when the guide bar is mounted.

Recommended Free Space (Minimum): 2”(50.8mm)

Knifeholder installation.fm

Manual mount

1. Make sure the blade cartridge is retracted.
2. Turn the brake knob (on top of the control body) counterclockwise enough to allow the brake shoe to be manually retracted into the mount. (Push the brake shoe up into mount if extended out.)
3. Align the mount with the end of the guide bar and slide the knifeholder onto the guide bar.
4. Turn the brake knob clockwise to secure the knifeholder in the desired position.
5. Connect the power/communication cable(s) before turning on the system power.



1	Brake shoe
2	Gib
3	Gib set screw

Adjusting the gib

You may need to adjust the gib to ensure that the knifeholder is perpendicular to guide bar.

1. Loosen the two gib socket head cap screws. (4mm hex)
2. Tighten or loosen the gib set screw to achieve a perpendicular fit: ¼ turn per adjustment. (2 mm hex)
3. Tighten the two gib socket head cap screws: torque to 5.83 Nm [4.3 ft·lbs].
4. Gib should be tight enough to maintain perpendicular fit when locked to the guide bar, and loose enough to provide smooth movement.

7 MAINTENANCE

Preventive maintenance



WARNING
Hand hazard.
Knife blades are sharp.
Use only recommended tools when handling knife blades.

- This recommended maintenance schedule is dependent upon machine use and environment.
- Keep anvil rings and top blades clean and balanced.
- Do not use oil lubricants in knifeholder. Oil lubricants may cause the knifeholder to function improperly. Use only those lubricants recommended in this publication.

Daily

- Keep all knifeholders clean of debris.
- Clean the cartridge-to-knifeholder interface parts
- Calibrate the knifeholder whenever it is moved or a blade is changed.
- DO NOT IMMERSE knifeholders in solvents. Wipe the outer surfaces with a clean, dry rag.

Weekly

- Use compressed air to remove dust build-up from the blade cartridge.
- Check electrical cable to the knifeholders for wear or cracks.
- Make sure all cable connectors are secure.
- Inspect control body dovetail assembly and remove all dust and debris.

Monthly

- Check for minimal clearance between knifeholder mount and guide bar.
- Clean all surfaces of the control body and blade cartridge.
- Inspect bellows for tears around dovetail mount. Replace if torn or stretched.
- Inspect the power supply for proper voltage: +24 VDC.
- Check the resistance between the cartridge dovetail and the top blade, see *page 7-4*

Bi-Yearly

- Clean and inspect blade cartridge bearings for excessive free play.
- Remove cant key and o-ring and inspect for excessive wear. Replace if necessary.
- Check cant key o-ring for damage. Replace if necessary.

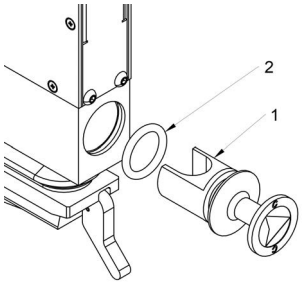
Recommended tools and supplies

- Dow Corning Molykote® 557 Silicone Dry Film Lubrication
- Parker Super O-lube O-ring Lubricant (no substitutes)
- Hex key wrenches, metric
- 9" hex key wrench, 2 mm
-

Guide bar

Periodically wipe the guide bar clean and lubricate with a silicone dry film lubricant.
Maxcess recommends using *Dow Corning Molykote® 557 Silicone Dry Film Lubrication to ensure smooth movement.*

Cant key o-ring



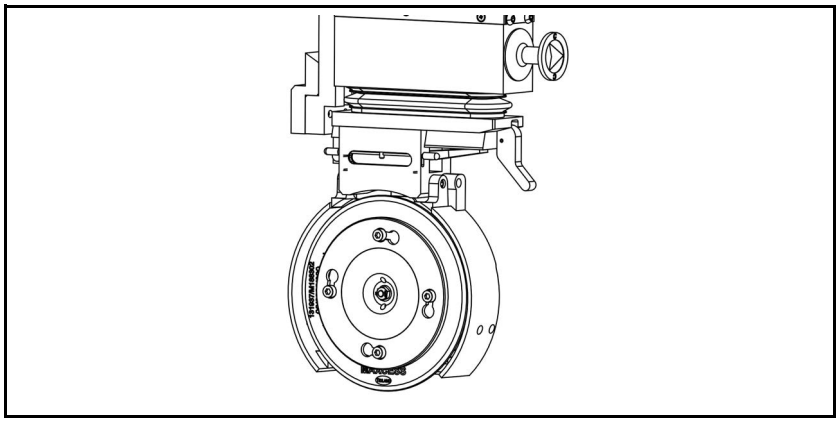
If the cant key (1) becomes loose in the body or if cracks in the o-ring (2) are visible, replace the o-ring. Lubricate the new o-ring and the cant key o-ring groove. Use only Parker Super O-Lube (no substitutes).

Reinstall the cant key in the knifeholder body with the arrow oriented in the correct direction for your web path.

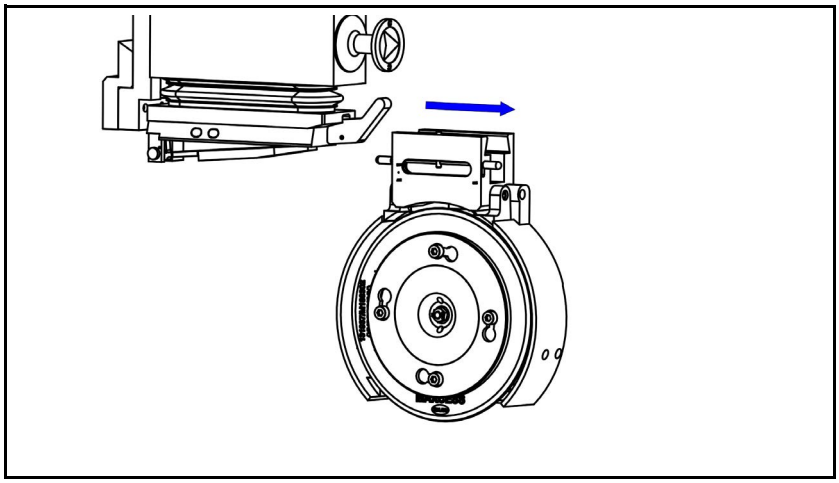
Dismounting the blade cartridge

WARNING
Disassembling the cartridge is only allowed if the knifeholder is fully disengaged.

1. Lift lock lever up.



2. Slide blade cartridge off of control body.



Note:
If you are changing the cut side (reversing the blade cartridge on the knifeholder), you must also reverse the cant key, see *page 4-4*.

Cartridge-to-knifeholder interface

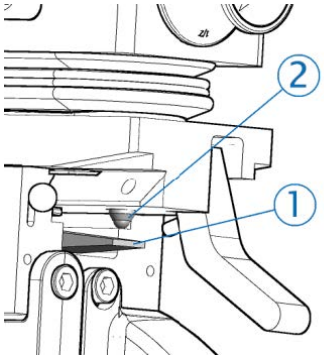
For proper knifeholder operation, keep the interface clean between the cartridge and knifeholder control body dovetail.

WARNING! HAND HAZARD.
Knife blades are sharp. Maintenance may be performed only by qualified personnel and only in a designated area. For added protection, Maxcess recommends the use of stainless steel mesh gloves when handling knife blades.

Remove the cartridge from the control body.

- Clean the side-stroke lever on the dovetail assembly.(*page 7-4*)
- Clean the side-stroke actuator parts.(*page 7-5*)
- Measure the resistance between the dovetail / blade cartridge assembly and the knife blade.(*page 7-5*)

Side-stroke lever

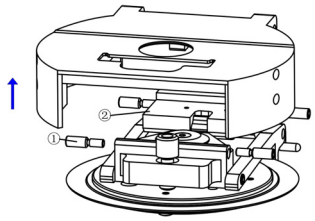


During operation, the side-stroke lever **(1)** is activated by the side-stroke actuator **(2)** located at the cartridge-to-dovetail interface. If this area becomes clogged with dust and debris, the actuator can become stuck, resulting in loss of side-stroke.

Inspect the area often and clear debris using compressed air. In high dust level environments, you may need to clean the area before disengaging the blade from the anvil in order to prevent the side-stroke actuator from sticking.

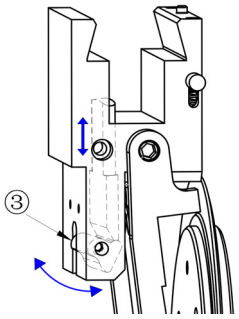
Repair options if the actuator is stuck:
Return the unit to Maxcess or call for assistance with **Service** part.

Cleaning side-stroke actuator parts

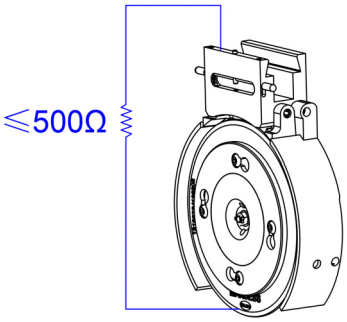


Clean regularly depending on the application and dust levels of your operation.

1. Using 4 mm hex wrench, remove two pivot pins and lift up the cartridge strut **(1)**.
2. Lift the dovetail assembly **(2)** and use compressed air to blow dust and debris from the moving parts with compressed air.



3. Manually actuate the side stroke key and the cam **(3)** parts, checking for free and smooth movement. If parts are sticking, call Maxcess Customer Service for assistance.
4. Reassemble the blade cartridge.



5. Use an ohmmeter to measure for ≤500 Ω between the top of the dovetail and a point on the top blade. Rotate the top blade and measure in several places

   If any point on the top blade measures more than 500 Ω, the cartridge bearing must be replaced. Contact Maxcess Customer Service .

Note:
The dovetail point must be a non-anodized surface, as shown in the illustration.

Removing the knifeholder





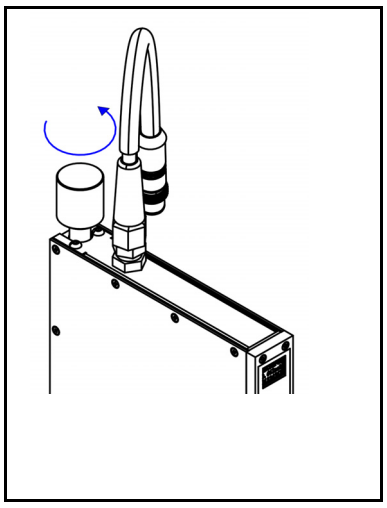
WARNING–DANGER DUE TO CUTTING OR CRUSHING

Before removing the knifeholder from the guide bar:

- Retract the blade cartridge.
- Turn off power to the knifeholder.
- Disconnect the power/communication cable from the knifeholder.
- Remove the blade cartridge.

Manual mount

1. Disconnect the knifeholder power cable at the beam. (If your knifeholder has an externally connected cable, you may disconnect it at the knifeholder.)
2. Locate and remove the #10–32 screw from the end stop on the face of the guide bar.
3. Unlock the brake.
4. Slide the knifeholder off of the guide bar.



Maintenance.fm

Knife blades

The problem-free and safe operation of Tidland knifeholders is reliant on proper transportation and storage, expert installation and commissioning, and on use in accordance with the intended purpose.

Only persons who are familiar with the installation, commissioning, operation, and maintenance of the knifeholders, and who possess the necessary qualifications for their activities may work on the knifeholders.



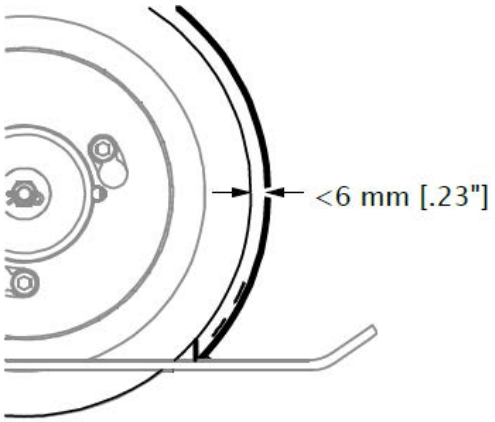
WARNING
Hand hazard.
Knife blades are sharp.
Maintenance may be performed only by qualified personnel and only in a designated area.

Minimum blade diameter

For safety, Maxcess recommends changing knife blades when the minimum blade diameter for CE compliance is reached.

The blade diameters ensure that a <6 mm [.23"] gap is maintained from blade edge to the inside edge face of the cartridge guard.

The minimum diameter of the blade is 83.58mm[3.29"] .



Removing the knife blade



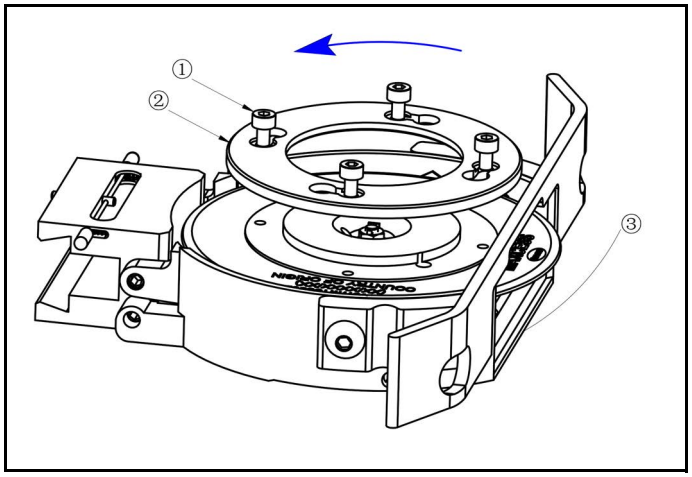
WARNING

Hand hazard.

Knife blades are sharp. Maintenance may be performed only by qualified personnel and only in a designated area.

For added protection, Maxcess recommends the use of stainless steel mesh gloves when handling knife blades.

1. Remove the cartridge from the knifeholder.
2. Press and hold the blade lock pin **(3)** to keep the blade hub from rotating. (Pin is on opposite side of cartridge.)
3. Use a 4 mm hex wrench to loosen the four blade clamp screws **(1)**.
4. Still pressing the blade lock pin, rotate the blade clamp **(2)** counterclockwise until you can lift it from the hub.
5. Remove the top blade from the blade hub.



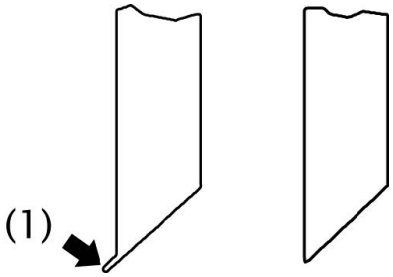
Reinstalling the knife blade

1. Before reinstalling the knife blade, clean the blade and the blade hub surface to ensure best fit and performance.

2. Reinstall blade and blade clamp: Tighten the four blade clamp screws to 1.02 Nm (9 in·lbs).

Maintenance.fm

Blade grinding and finishing



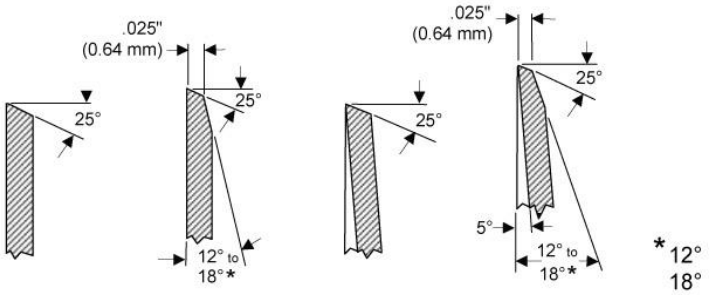
See minimum blade diameter specifications; *page 7-7*.

- Correct blade sharpness is essential for shear and crush slitting operations.
- To reduce chipping and rapid dulling of blades, it is important to remove burred edges **(1)**.
- Grind the blade edge as smooth as possible to avoid dust formation during the slitting process.
- Before putting the blade into operation, install the blade and set up the knifeholder at the anvil ring. Manually rotate the blade against the anvil in the reverse direction for a few revolutions. This will help deburr the blade after grinding and provide a smooth slitting edge.

Suggested blade grinding procedures on next page.

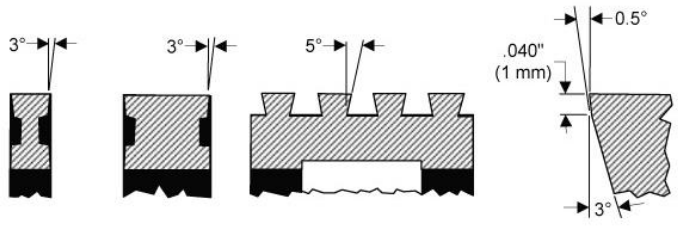
Suggested blade grinding procedure

Step	Procedure	Wet/Dry	Grit/hardware
1	Grind to remove chips, restore roundness, etc.	Wet	46/60 med./soft
2	Rough grind blade edge	Wet	100 medium
3	Finish grind blade edge	Wet	180 med./hard
4	Deburr	Dry(Hand)	Oilstone



Flat, Single bevel | Flat, Compound bevel | Dished, Single bevel | Dished, Compound bevel

12° for blades Φ150 mm and smaller / 18° for blades Φ180 mm and larger.



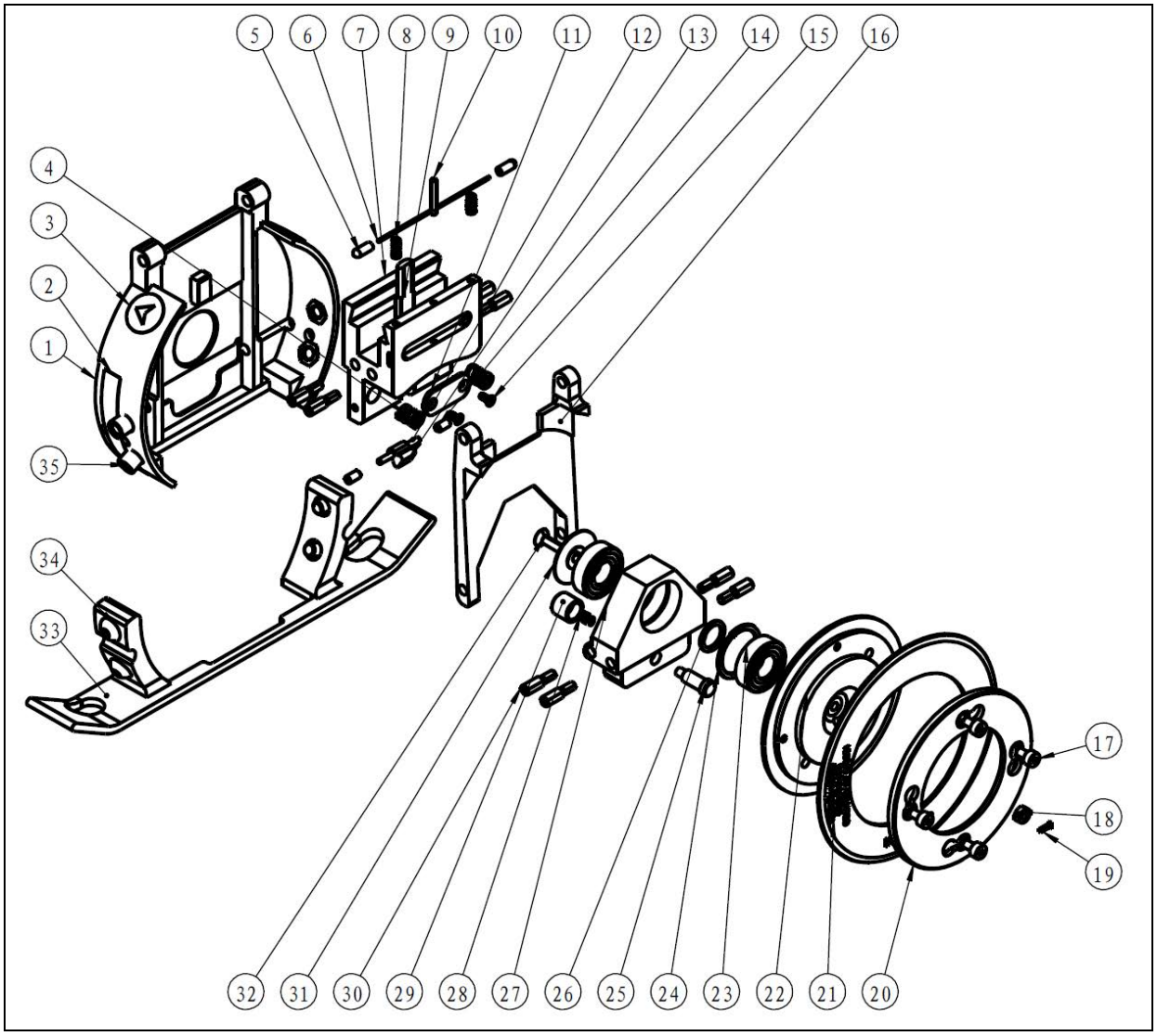
Dual edge, All sizes | Dual edge, All sizes | Multi-ring, custom-made to customer specifications | Carbide edge

Maintenance.fm

Blade guard cartridge

Assembly diagram

Catridage with 180 degree blade guard,
Maxcess Asia P/N: 620000243-002,Tidland P/N:270049487.



180° Blade guard cartridge

Part list

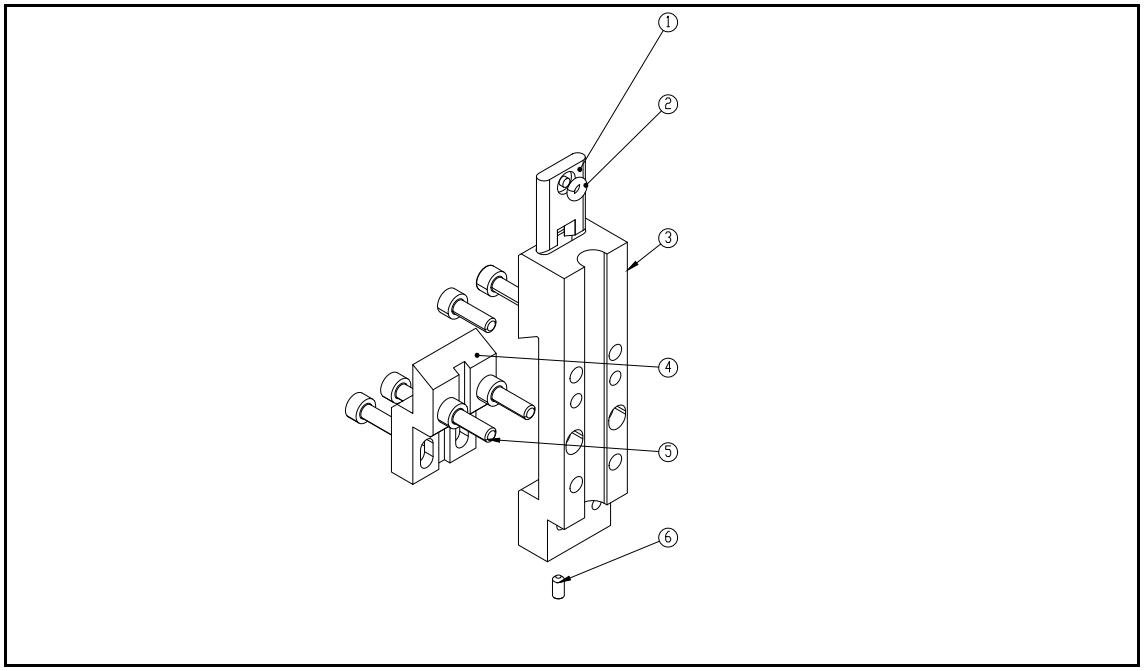
Item	DESCRIPTION	QTY	Maxcess Asia P/N	Tidland P/N
1	Outboard strut	1	620000240-001	270050369
2	Label,warning	2	130923	130923
3	Cartridge label	2	547635	547635
4	Return Spring	2	620000972-001	270050370
5	Latch Pin Cap	2	620001205-001	270050371
6	Safety Latch Pin	1	620001202-001	270050372
7	Dovetail Block	1	620000235-001	270050373
8	Safety Lock Spring	2	620000242-001	270050374
9	Side Stoke Key	1	620000237-001	270050375
10	Safety Lock Pin	1	620001201-001	270050376
11	Side Stoke Key Retainer	1	620000239-001	270050377
12	Dowel Pin	1	620000278-001	270050378
13	Crank Lever	1	620000238-001	270050379
14	Set Screw	2	C200007-012	270044076
15	Flat Head Screw	2	620000277-001	270050381
16	Inboard Strut Arm	1	620000967-001	270050382
17	SHCS M3 x 5	4	T635047	T635047
18	Nylock Nut	1	T528674	T528674
19	Hair Pin	1	T528673	T528673
20	Blade Clamp	1	T579833	T579833
21	Knife blade	1	T131937	T131937
22	Blade Hub	1	T528671	T528671
23	Ball Bearing	2	620001026-001	270046810
24	Bearing Snap Ring	1	T528675	T528675

25	Blade Lock Pin	1	T133963	T133963
26	Bearing Spacer	1	T528669	T528669
27	Bearing Housing	1	620001025-001	270050383
28	Set Stop Spring	1	T528672	T528672
29	Blade Lock Cap	1	T133962	T133962
30	Strut Stud	8	T545948	T545948
31	Bearing Cap Assembly	1	T528665	T528665
32	Flat Head Capscrew	1	T528668	T528668
33	Guard attachment	1	657174	657174
34	Button Head Capscrew	4	672181	672181
35	Self Clinching Nut	4	659101	659101

Guide bar mount parts

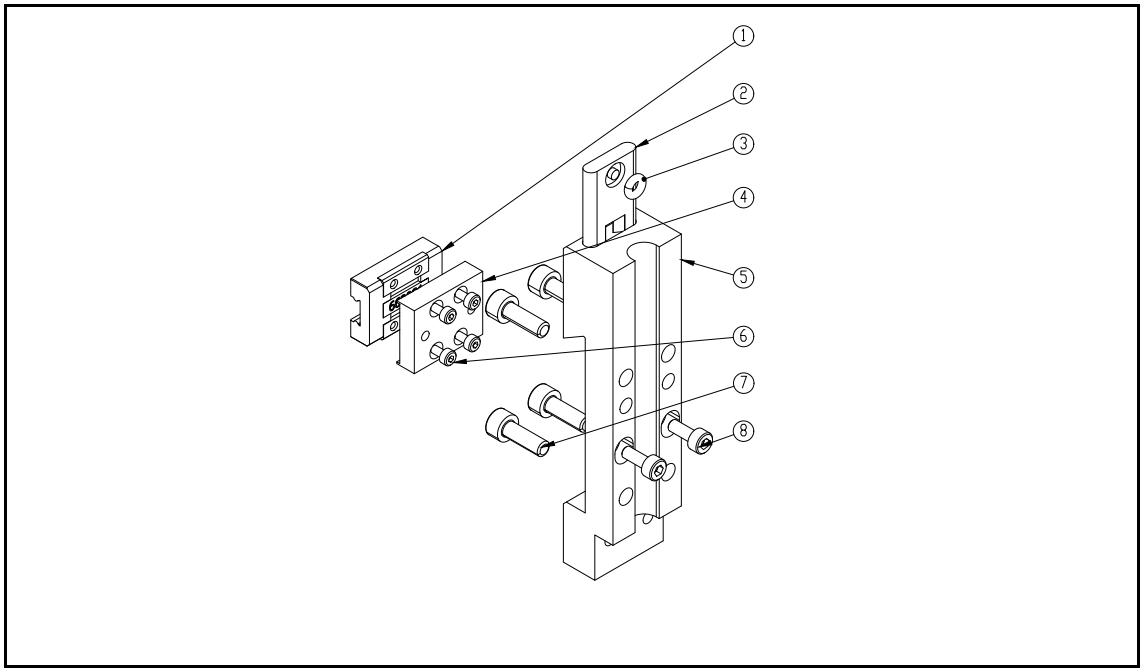
Gib mount

Standard Glider



Pos.	Maxcess Asia P/N	Tidland P/N	Description	Qty
1	620000272-001	270050384	Brake shoe	1
2	620000750-001	130136	O-Ring	1
3	620000269-001	270050385	Backplate	1
4	C200007-012	130149	Ajustment screw(Gib)	1
5	C200935-037	897723	Socket Head Cap Screw M4 x 12 mm	6
6	620000273-001	270050386	Gib	1

Easy Glider



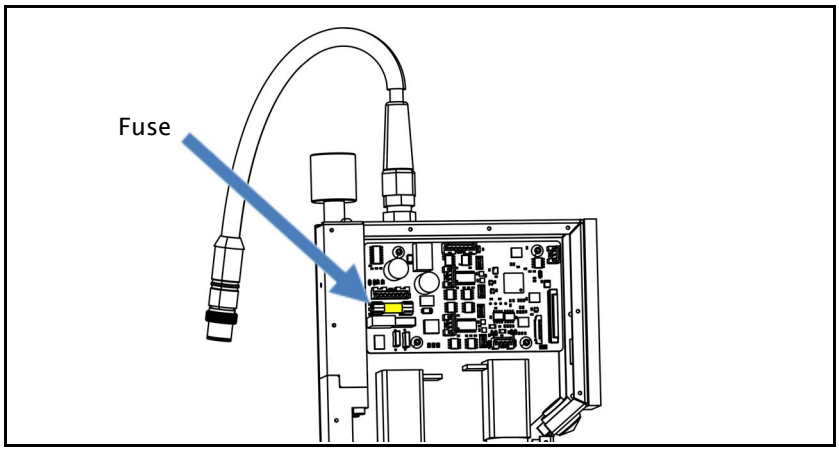
Pos.	Maxcess Asia P/N	Tidland P/N	Description	Qty
1	/	662081	Linear Bearing	1
2	620000272-001	270050384	Brake shoe	1
3	620000750-001	130136	O-Ring	1
4	620001221-001	270050509	Linear bearing block	1
5	620000269-001	270050508	Blackplate	1
6	620001222-001	27L662169	Socket Head Cap Screw M2 x 4 mm	4
7	C200935-037	27L130145	Socket Head Cap Screw M4 x 12 mm	4
8	91008-002	27L897715	Socket Head Cap Screw M3 x 8 mm	2

Replacing a fuse in the knifeholder

These instructions are for replacing the fuse in the knifeholder control body.

WARNING
To reduce the risk of fire, replace only with the same type 1A, minimum 24 VDC fuse.

1. Turn off power to the knifeholder.
2. Disconnect power/communication cable from the knifeholder.
3. Remove the knifeholder from the guide bar.
4. Remove the blade cartridge from the control body – recommended for safe handling of knifeholder.
5. Remove the side cover from the control body.
6. Remove and replace the fuse.



8 TROUBLESHOOTING

Status LED

The Status LED allows operators to see from a distance what state each knifeholder is in. It is typically located on the front of the knifeholder.

LED Color	Mode	Knifeholder status
Red	Steady	Knifeholder disengaged
	Blinking	Knifeholder disengaging
	Steady / green flash	Knifeholder disengaged; ready to engage
	Blinking / yellow flash	Knifeholder disengaging; will calibrate when complete
	Blinking / green flash	Knifeholder disengaging; will engage when complete
	Steady / white pulses	Knifeholder disengage error
Yellow	Steady	Knifeholder calibration complete
	Blinking	Knifeholder calibrating
	Blinking / red flash	Knifeholder calibrating; will disengage when complete
	Blinking / green flash	Knifeholder calibrating; will engage when complete
	Steady / white pulses	Knifeholder calibration error
Green	Steady	Knifeholder engaged/slitting
	Blinking	Knifeholder engaging
	Steady / white pulses	Knifeholder engage error
	Alternating green/orange	Knifeholder engaged and blade use alarm condition
Blue	On	Knifeholder in manual/jog mode
	Alternating blue / yellow	Knifeholder in manual/jog mode and blade is touching anvil

Fault codes

If an error occurs during normal operation the knifeholder will enter a faulted state. The alphanumeric fault code and a short description of the fault are displayed. Refer to the fault codes in the table below.

The status LED will be in a steady color state with an intermittent white flash; the color will correspond to the knifeholder function at the time of the error.

RED	Disengage error
YELLOW	Calibration error
GREEN	Engage error

First digit	Description
H	Fault occurred while disengaging
C	Fault occurred while calibrating
E	Fault occurred while engaging

Second digit	Description
0	No fault
1	Unexpected anvil touch
2	Anvil not detected
3	Cannot achieve side force
4	Cannot achieve overlap
5	Problem finding home sensor
6	Problem leaving home sensor
7	Action aborted by user
8	Knifeholder not calibrated
9	EEPROM memory error
10	Cut Quality
11	Check Cartridge Problem
12	Auto sideforce range

Knifeholder performance

You can also check knifeholder status using the Fault Code guide on *page 8-2*.

Problem	Possible cause	Recommended Solution
Knifeholder disengages/ retracts without operator command.	Improper shield termination on the knifeholder power/ communication cable at the cabinet	All cable shielding must be grounded close to where cables enter the power cabinet. (Refer to electrical drawings supplied with the system). Call Maxcess for assistance or to order a parts kit.
	Bad cable (usually the communication/power cable on the knifeholder).	**Replace the cable(s).**
	Faulty wiring at the remote engage switch	Check that all wiring for the remote engage switch is secure. (Refer to electrical drawings supplied with the system).
Cartridge moves but does not calibrate, OR Blade drives into anvil; does not calibrate	**Resistance threshold exceeded**	Use an ohmmeter to confirm ≤5KΩ between ground and the anvil ring. Verify ≤500Ω between the knife blade and the control body dovetail. Renew contact between cartridge and control body.
Cartridge does not engage, calibrate or jog down	Resistance threshold exceeded	With the knife blade not touching anything, use an ohmmeter to verify ≤500Ω between the knife blade and ground.
	Internal binding	Call Maxcess for assistance with Maintenance Mode.
Knifeholder does not operate - power LED is OFF	No power	Plug in power cable. Check power supply output/ fuse.
	Fuse blown at knifeholder	Replace only with the same type, 1A, minimum 24 VDC fuse
Knifeholder does not operate - power LED is ON	Remote engage is off	To extend/retract the knifeholder, the remote engage input must be on. Check the remote engage relay in the Interface Cabinet.

Trouble shooting.fm

Sluggish knifeholder action (extension or retraction)	Control body worn or motor malfunction.	Return knifeholder to Maxcess for repair.
Knifeholder does not retract when red button is pressed	Internal binding	Call Maxcess for assistance with Maintenance Mode.
	No power (power LED is off)	Plug in power cable. Check power supply output / fuse.
Difficult knifeholder movement on guide bar	Dirty guide bar	Clean and lubricate guide bar with Dow Corning 557 Dry Film Lubricant.
	Sticky brake shoe	Clean brake shoe. Clean and lubricate brake shoe o-ring. Use Parker Super O-Lube.
No Side Stroke (run or setup)	Blade cartridge not fully installed	Ensure blade cartridge is pushed securely into place on knifeholder and that the lock/unlock lever is in the locked position.
	Test to determine if problem stems from control body or blade cartridge	Remove non-functional blade cartridge and replace with functional blade cartridge.
	If after replacing the blade cartridge the control body is functional but the blade cartridge is not	Return control body and blade cartridge to Maxcess for repair.
	Control body to blade cartridge interface	Ensure that blade cartridge safety lock pin is fully engaged with the control body and that the lock/unlock lever is in the locked position.
		Sidestroke components are clogged with dust at the interface.
	Internal binding	Call Maxcess for assistance with Maintenance Mode.
Side stroke occurs before completing down stroke	Bad calibration	Recalibrate the knifeholder.
Blade cartridge does not disengage	Internal binding	Call Maxcess for assistance with Maintenance Mode.
Cannot remove blade cartridge	Sidestroke components are clogged with dust at the interface.	Extend blade cartridge, pull back the bellows and blow dust buildup from the cavity between cartridge and control body.
Knife blade rides up on top of anvil ring	Maximum side force combined with minimum overlap	Reduce side force or increase overlap.

Short blade life or damaged blade edge	Too much overlap	Calibrate to correct overlap.
	Side force too high	Adjust Side Force to the minimum necessary to produce a good slit.
	Driven anvil run-out	Reset anvil ring.
	Maximum side force combined with minimum overlap	Reduce side force or increase overlap.

Slit quality

Problem	Possible cause	Recommended solution
The slit edge is fuzzy	Dull blade	Replace blade.
	Loss of cant angle (worn parts)	Replace cant key.
	Wrong cant key	Replace cant key.
	Knifeholder is loose on the guide bar	Make sure guide bar mount is secure to knifeholder. Check the adjustment of the mount to the guide bar.
	Too much overlap	Calibrate to correct overlap.
	Incorrect setback	Check geometry.
	Maximum side force combined with minimum overlap	Reduce side force or increase overlap.
Web tears or splits	Incorrect setback	Check geometry.
	Loss of cant angle (worn parts)	Replace cant key
	Bad calibration	Re-calibrate the knifeholder
		Adjust the overlap to the minimum required to slit the material.
	Insufficient overspeed of the driven anvil	Adjust overspeed to be 3-5% greater than the winder speed.
Web folds down	Loss of cant angle (worn parts)	Replace cant key
	Wrong cant key	Install correct key
	Cant key is incorrectly installed	Check web direction.
	Dull blade	Replace blade.
	Incorrect setup	See Keypad and Operation sections.
Web breaks	Web tension is too high	Reduce tension.
	Low driven anvil speed	Check the driven anvil speed.
Web bunches up in front of knife blade	Insufficient overspeed of the driven anvil	Adjust overspeed to be 3-5% greater than the winder speed.
Change in roll width	Knife blade riding up on top of anvil ring caused by maximum side force combined with minimum overlap	Reduce side force or increase overlap.

9 SPECIFICATIONS

Specifications

Control Series knifeholder	
Blade diameter	90 mm [3.5"]
Minimum blade diameter [to maintain CE compliancy]	83.58mm [3.29"]
Blade overlap (accuracy)	±0.013 mm [± .0005"]
Minimum slit width	25.4 [1.0"]
Reversible blade cartridge	Yes
Designed maximum speed	1,000 mpm [3,500 fpm]
Maximum down stroke	16 mm [0.62"]
Maximum down force	200 N [45 lbs]
Minimum side force	4.45 N [1 lbs]
Side force (accuracy)	+/- 0.113 kg (0.25 lbs) up to 1 kg +/- 0.225 kg (0.5 lbs) above 1kg
Maximum side force	26.7 N [6 lbs]
Calibration time	17 seconds
Cant angles	0° , 1/2°, 3/4°, 1°
Power	24 VDC, 1 A
Fuse	1 A; lag-time type buss S505
Operating temperature	0 to 40 °C [32 to 140 °F]

Knifeholder system cabinet	
Electrical ratings	See page 5-1
Fuses	See page 5-3
Operating temperature	0 to 40 °C [32 to 140 °F]
Option: pneumatic engage	2.8 to 6.2 bar [40-90 psi]