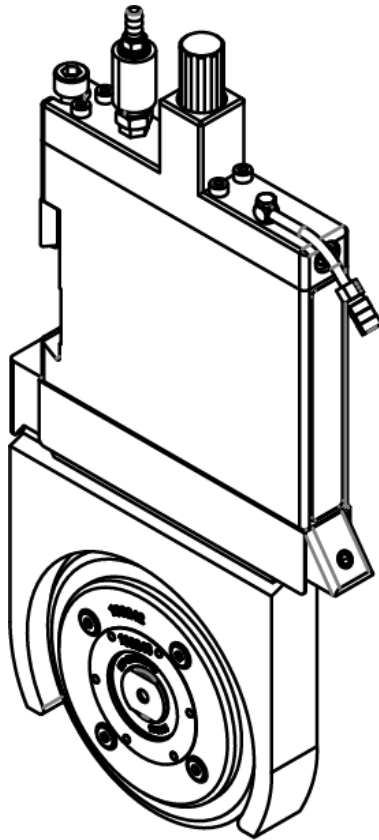




A MAXCESS[®] BRAND

Tidland Advantage Series Crush Knifeholder User Manual



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1 Overview

1.1 Operating Instructions Overview

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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 Crush Knifemaker 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 Crush Knifemaker.

These instructions must be retained and incorporated in the technical documentation for the machine or partly completed machinery into which the Crush Knifemaker 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 Advantage Series 19 Crush Knifeholder, 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 Crush Knifeholder.



Warning

- Knife blades are sharp.
 - Can cause serious injury to hands.
 - Do not remove safety guards.
 - Use only recommended tools when handling knife blades.
-



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

- The Crush Knifeholder is used to produce a slit when used with a driven anvil system, and there is no other intended purpose.
- Read and understand all instructions before operating the Crush Knifeholder. Failure to follow instructions may cause the unit to function incorrectly that could result in injury.
- The Crush Knifeholder contains spring-loaded components. While operating the Crush Knifeholder, follow all existing plant safety instructions and/or requirements.
- Always wear stainless steel protective gloves when changing or removing the knife blade.
- 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.

2.2 Crush Knifeholder Specific Safety Information

To ensure safe and problem free installation of the Crush Knifeholder, please note the following

2.2.1 Proper use

The Crush Knifeholder is intended to be used on machines or systems to aid in the die cutting of 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 Crush Knifeholder that is damaged must not be installed.
- Only perform installation, maintenance, or repair tasks on the Crush Knifeholder when the machine into which it has been installed is stopped and is secured from starting and power is locked out.
- The Crush Knifeholder 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 Crush Knifeholder .

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 Crush Knifeholder. When the Crush Knifeholder 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 Advantage Series 19 Crush Knifeholder is an air-actuated knifeholder that supports a removable and reversible rigid cartridge that allows crush/score cutting against an anvil.

3.1 Crush Knifeholder Features and Controls

Below is a list of features of the Crush Knifeholder:

- 1) Air input (10–32 hose fitting)
- 2) Depth control knob
- 3) Brake screw
- 4) Brake gib
- 5) Control body dovetail block
- 6) Cartridge lock set screw
- 7) Removable/reversible blade cartridge

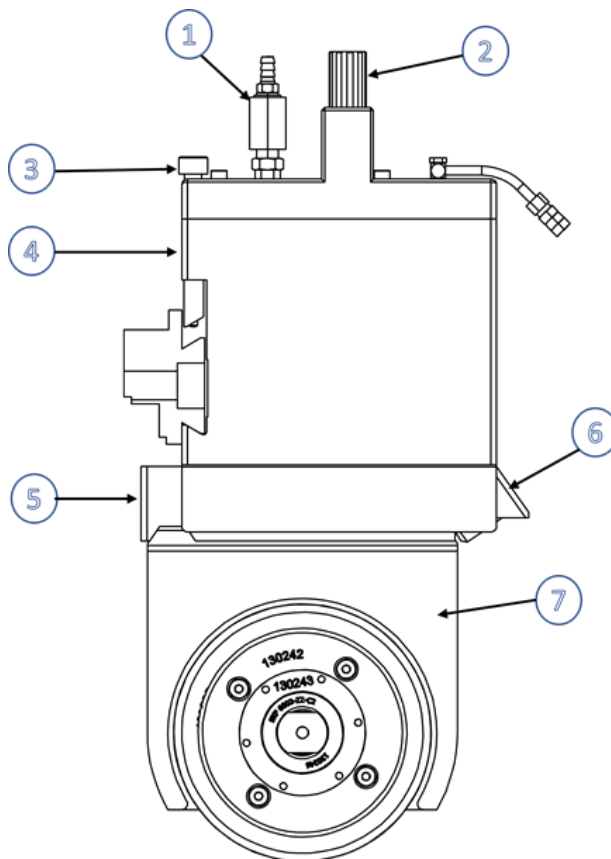


Figure 1 – Advantage Series 19 Crush Knifeholder Features and Controls

PRODUCT OVERVIEW

3.2 Specifications

Definition	Dimension
Blade Diameter	90 mm (3.5 in.)
Minimum Slit Width	19.0 mm (0.748 in)
Vertical Stroke (Max down stroke)	19.0 mm (0.748 in)
Designed Maximum Speed **	300 m/min (1000 ft/min)
Down Force at 6 bar (Vertical)	467 N (105 lbs.)
Operating Air Pressure	2.7 to 6.2 bar (40 to 90psi)

Table 1 - Advantage Series 19 Crush Knifeholder Specifications

NOTES

** The actual speed depends on the application and the material.

PRODUCT OVERVIEW

3.3 Dimensions

The dimensions for the Advantage Series 19 Crush Knifeholder are provided below.

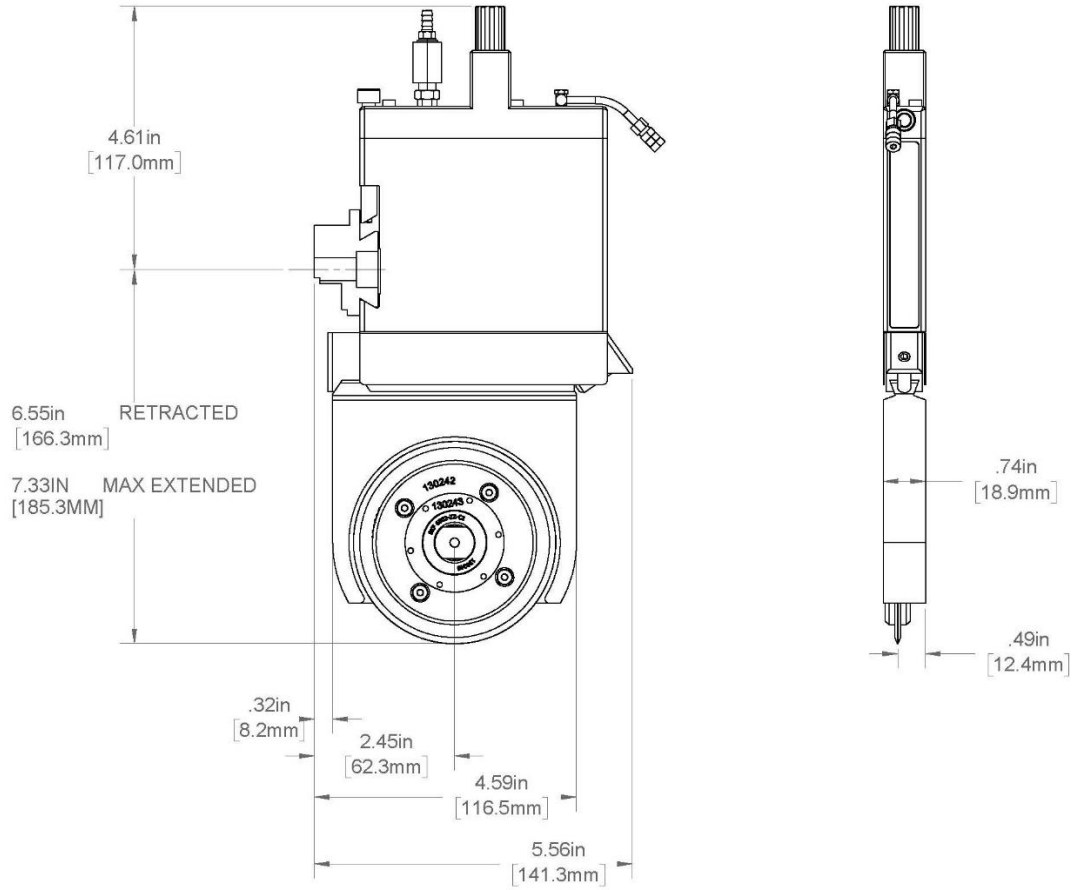


Figure 2 - Advantage Series 19 Crush Knifeholder Dimensions

INSTALLATION

4 Installation



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

- 1) In the desired orientation, slide the cartridge into the groove on the control body dovetail block. Ensure the set screw is oriented with the flat end toward the cartridge and hex socket facing out. Tighten the set screw to 5.0 to 6.0 in-lbs. (0.56 to 0.68 nm.) torque to secure the cartridge.



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

- 2) The control body and the cartridge are equipped with separate compressed air hoses as shown in Figure 3 below. The control body compressed air fitting (Item 1) is polyurethane tubing with a 4 mm (0.157 in.) inner diameter. Air fitting (Item#2) does not affect performance of the crush cartridge. Item 2 is only used when the customer installs a shear cartridge.

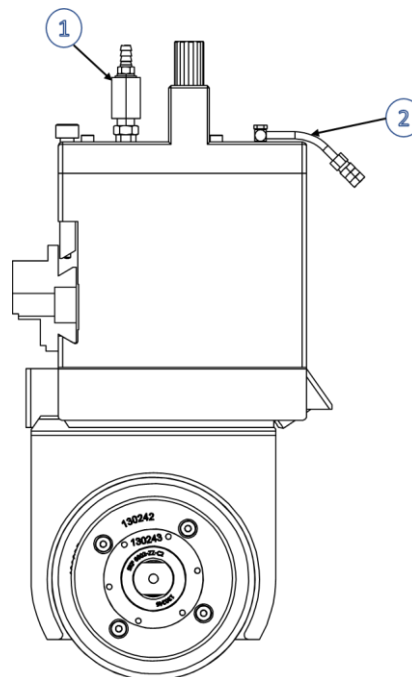
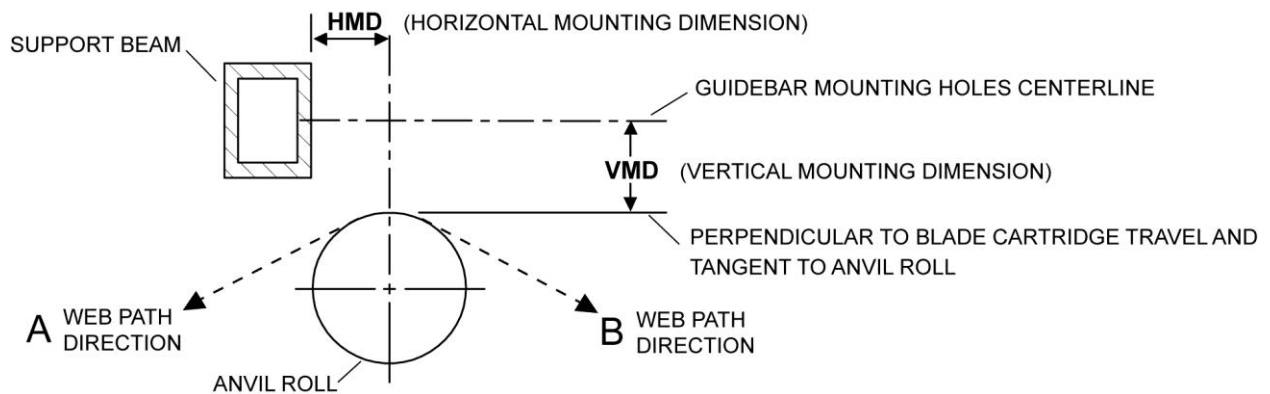


Figure 3 – Crush Knifeholder Air Connections

INSTALLATION

4.1 Determine Mounting Dimensions



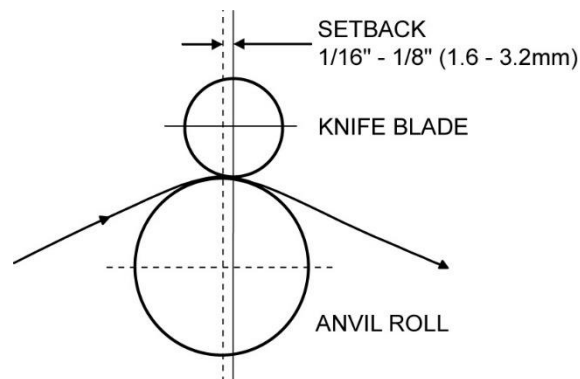
Maximum anvil runout = .005" (.127 mm) T.I.R.

4.2 Wrap Slitting

Vertical Mounting Dimension (VMD)		
Class I	6.91"	175.5 mm

Horizontal Mounting Dimension (HMD)			
A web path direction		B web path direction	
2.35	59.7 mm	2.55"	64.8 mm

4.3 Crush Knifeholder Setback



When configuring crush slitters, it is important that the centerline through the knife blade is placed slightly downstream of the centerline through the anvil roll and parallel to blade cartridge travel. This prevents lateral blade tracking. The goal is to have a slight casting effect.

Note: The HMD dimensions shown in 4.2 produce a crush knifeholder setback of approximately 0.10" (2.5mm).

5 Operation

5.1 Cartridge Removal and Installation

- 1) Turn the hex socket set screw counterclockwise to loosen until the bottom end clears the knifeholder body. Slide the cartridge outward toward the front of the Crush Knifeholder.
- 2) To insert the cartridge into the body, first ensure the hex socket set screw is clear of the cant key slot. It should be installed with flat side down, and hex socket facing outward. Align the cartridge and insert into the Crush Knifeholder, then tighten the set screw to 5.0 to 6.0 in-lbs. (0.56 to 0.68 nm) of torque.

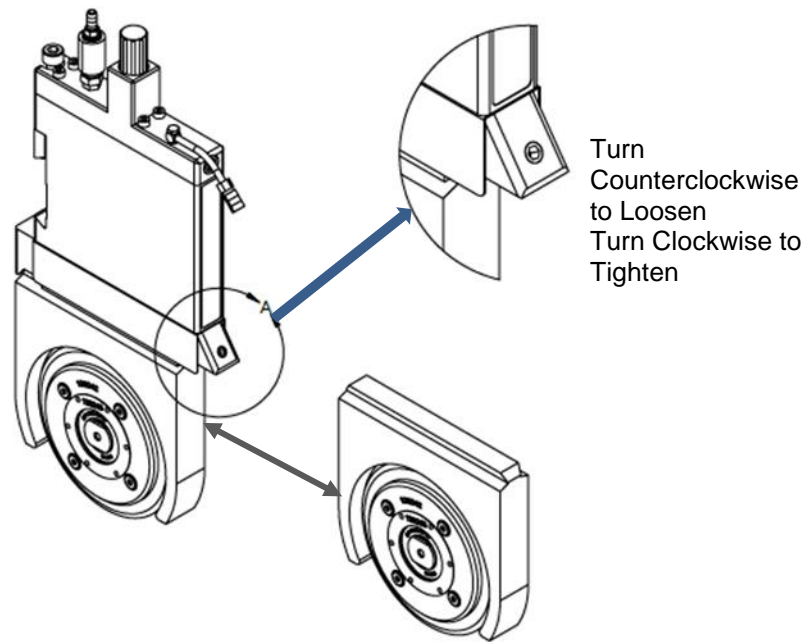


Figure 4 – Cartridge Removal and Installation

5.2 Blade Removal and Installation

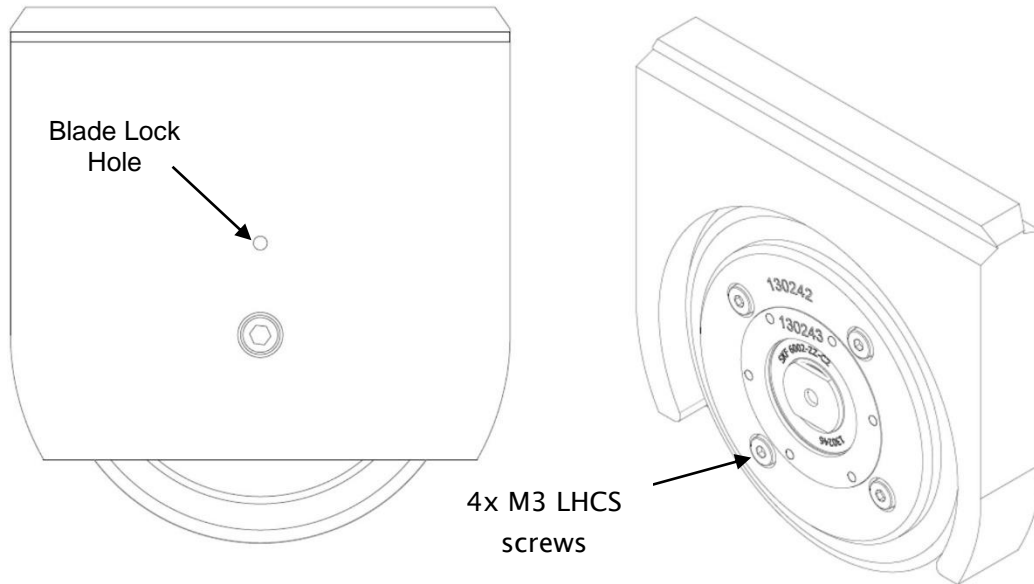


Figure 5 - Blade Removal and Installation

- 1) Remove the cartridge assembly from the control body (as shown in Figure 4 and Section 5.1 on previous page).
- 2) Insert 2.5mm hex wrench or equivalent size pin into the blade lock hole on the back of the cartridge and rotate the blade clamp until it stops (see Figure 5 above).
- 3) Loosen and remove the 4x M3 LHCS blade clamp screws.
- 4) Remove the Blade clamp.



Warning

- Knife blades are sharp and can cause serious hand injuries.
 - Always wear stainless steel protective gloves when changing or removing the knife blade.
 - Do not remove safety guards.
 - Use only recommended tools when handling knife blades.
- 5) Remove the blade, then clean the blade hub surface where the blade mounts to ensure secure blade fit and prevent wobble
 - 6) Reinstall the knife blade and re-install the Blade clamp.

OPERATION AND OPTIONS

- 7) Install and tighten the 4x M3 LHCS blade clamp screws. Torque to 17 in-lbs. (1.9 Nm).
- 8) Remove the pin to allow the blade hub to rotate.
- 9) Reinstall the cartridge onto the control body (as shown in Figure 4 and Section 5.1).

5.3 Air Manifolds

Crush knifeholders are connected to one air manifold. The Crush knifeholders will down-stroke by activating the air supply and adjusting the air pressure to control the down force. To set the input air pressure on the regulator, consult the charts of down force as a function of air pressure below in Figure 5

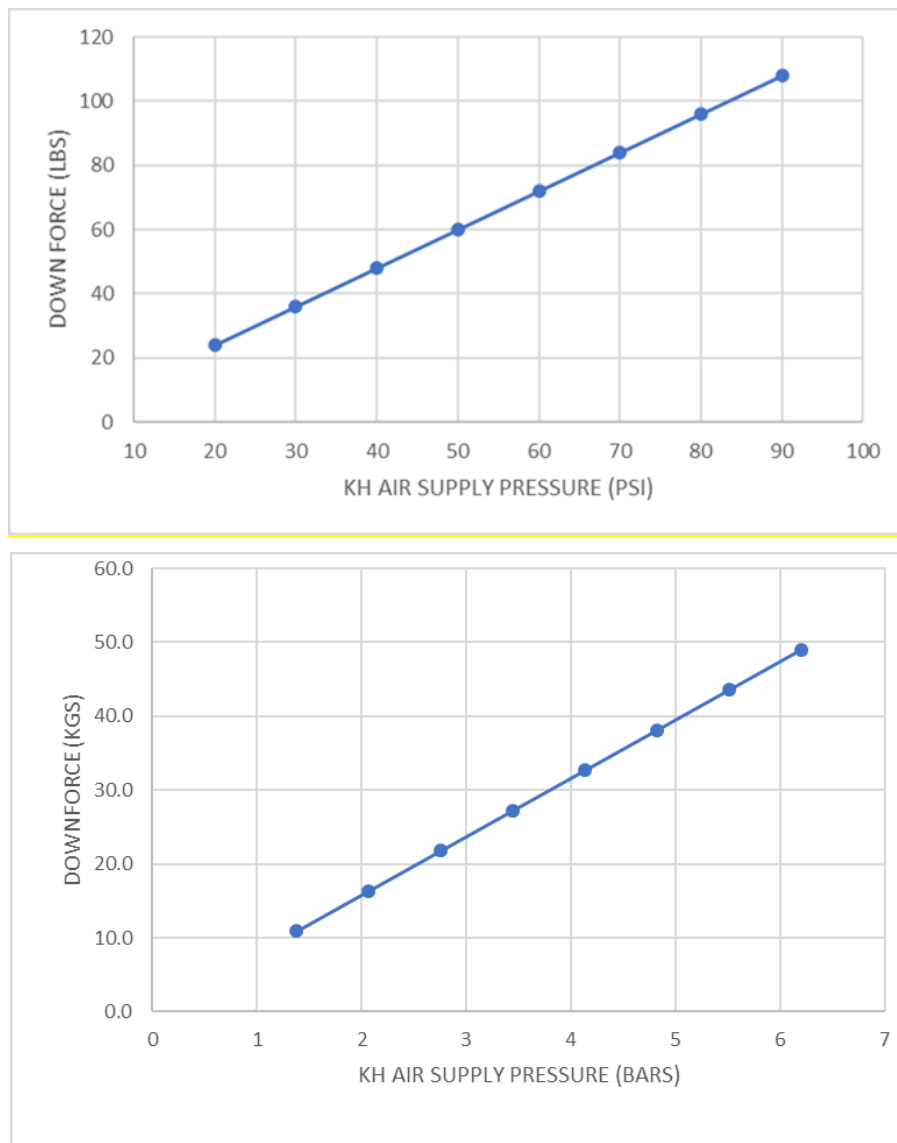


Figure 6 - Down Force as Function of Air Pressure

5.4 Setup

Ensure that:

- Blade cartridge is secured in the control body
 - Air supply is attached and set to minimum pressure required to slit your web material.
- 1) Adjust depth control knob to achieve the desired cartridge downstroke depth in order to make positive contact with the mating anvil. **DO NOT SCREW** the depth control knob all the way into the body – there will be no travel during carriage extension.
 - 2) Loosen the guide bar locking screw.
 - 3) Manually slide the Crush Knifeholder along the guide bar until the knife blade is positioned above the anvil in the desired cutting location. Hand tighten guide bar locking screw as needed to hold position.

5.5 Operate

Engage the blade by activating the air supply using an external switch or regulator. For models with a slider valve fitted to the control body input air hose, activate the input air, and use the slider valve to engage and disengage the Crush Knifeholder.

6 Options

6.1 Guide Bar



CAUTION – Only use a C1 guide bar.

The guide bar is installed in the slitting unit. The Crush Knifeholder can be arrested on the guide bar and can be slid to the desired position.

7 Maintenance

7.1 Preventive

- Keep anvil shaft and Crush Knifemaker blades clean and balanced.
- Do not use oil lubricants in Crush Knifemaker. Oil lubricants may cause the Crush Knifemaker to function improperly. Use only those lubricants recommended in this publication.

7.2 Daily

- Keep all Crush Knifemakers clean of debris.
- Check air pressure to the Crush Knifemakers: Clean, dry, non-lubricated air is essential for optimal Crush Knifemaker performance.
- Check for air leaks at the Crush Knifemaker and manifold.



CAUTION – DO NOT IMMEDIATELY immerse Crush Knifemakers in solvents. Wipe the outer surfaces with a clean, dry rag.

7.3 Weekly

- Check Crush Knifemaker air pressure. Crush Knifemaker air pressure requirements: 1½ Cfm @ 40–90 psi (2.7–6.2 bar).
- Blow down the blade cartridge to remove dust build-up.
- Check hose connections to the Crush Knifemakers for leaks or cracks.
- Check blade cartridge stroke function.

7.4 Monthly

- Check adjustment of gib to the guide bar for minimal clearance between Crush Knifemaker mount and guide bar.
- Clean all surfaces of the control body and blade cartridge.

7.5 Bi-Annually (six months)

- Clean and inspect blade cartridge bearings for looseness.

7.6 Guide Bar Cleaning

Periodically wipe the dovetail guide bar clean with a dry cloth and lubricate with a silicone dry film lubricant. Maxcess recommends using Dow Corning 557 Silicone Dry Film Lubrication to assure smooth Crush Knifeholder movement.

8 Assembly

Item	QTY	Maxcess Asia P/N	Maxcess USA P/N	Description
*1	1	620000145-001	270043425	Control body Base model
*1A	1	(620000145-001+T567944+620000294-001)	270043429	Control body with quick-disconnect and manual input valve
2	1	270046757	270046757	Cartridge base model

Table 2 - Crush Control and Cartridge Assemblies

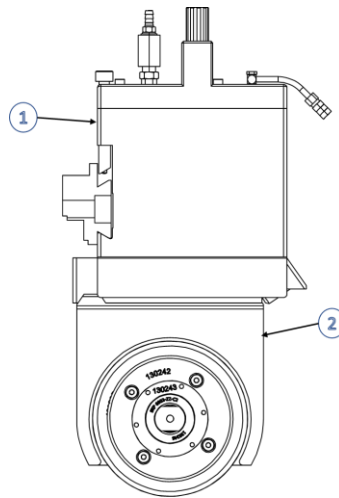


Figure 7 - Crush Assemblies

*Reference the Advantage Series Shear User Manual (MI 270043496 1 A) for Control Body details

ASSEMBLY

Item	QTY	Maxcess USA P/N	Description
1	1	270046756	ASKH Crush Cartridge Guard
2	1	568411	Class 1 Bearing Hub PS Crush
3	1	130243	Class-1 Bearing Retainer PS Crush
4	1	130242	Class 1 Blade Clamp PS Crush Rigid
5	1	129835	Class 1 Knife Blade Crush
6	1	130246	Bearing, Ball 15mm Bore X 32mm OD X 9mm WD (W/ Dual Shields)
7	1	542945	SOC HD CPSCR M5 X 0.8 X 12mm Zinc Plate DIN 912 CLASS 8.8
8	1	270046759	ASKH Bearing Retainer
9	6	130728	SOC HD CPSCR M3 X 0.5 X 8mm DIN 912
10	4	270046780	LOW HEAD SOC HD CPSCR M4 X 0.7 X 8mm LG Zinc Plate

Table 3 - Cartridge Assembly Parts List

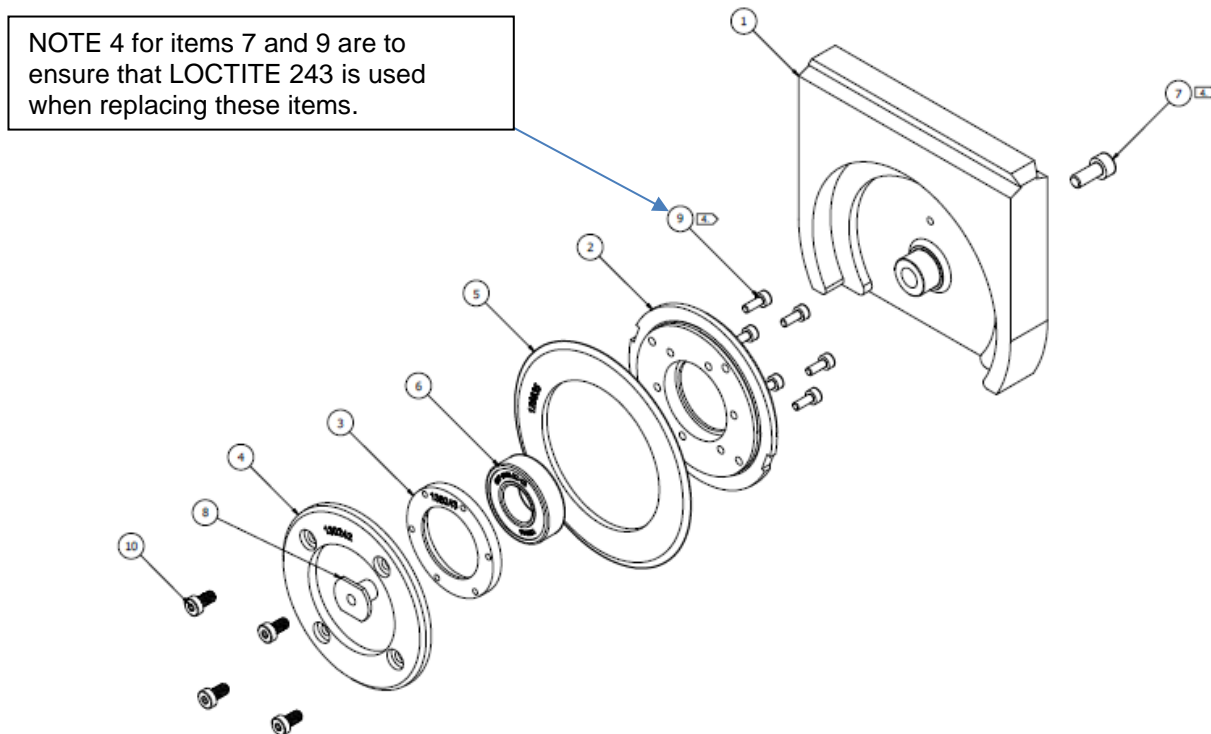


Figure 8 - Cartridge Assembly

TROUBLESHOOTING

9 Troubleshooting

Problem	Possible Cause	Recommended Solution
Knifeholder does NOT fully retract (Upstroke)	Cartridge set screw is too tight	Loosen and tighten screw to proper torque value
	Binding inside control body	Clean guide rod and bushings
	Malfunction in air valve on control body	Clean exhaust hole on control body. If necessary, replace valve
	Compression spring failure	Remove and replace spring
Knifeholder will NOT downstroke	Input pressure too low	Apply minimum recommended pressure
	Input air valve shut or damaged or hose disconnected	Open air valve and check connection. Replace as needed
	Loose blade cartridge	Tighten set screw to recommended torque
Poor slit quality	Knifeholder loose on guide bar	Tighten guide bar brake screw
	Loose blade clamp screws	Tighten blade clamp screws

Table 4 – Troubleshooting

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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