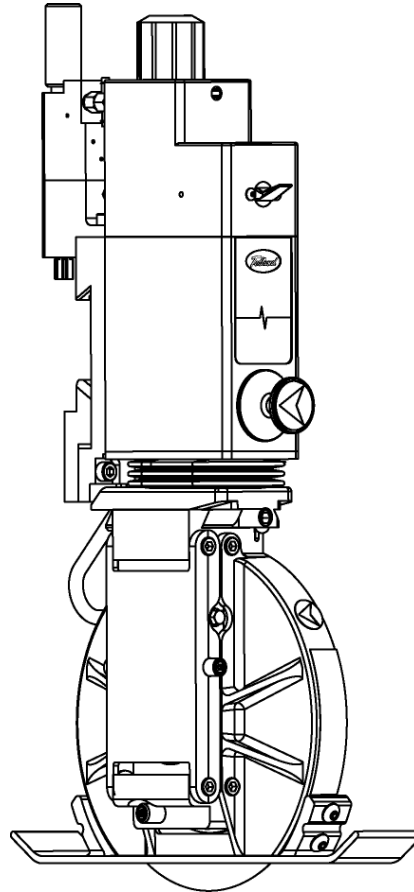




# Performance Series Manual Knifeholder

User Manual

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## KNIFEHOLDER SAFETY

### IMPORTANT!

When using knifeholders, basic safety precautions should always be followed 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. No part of these or the following instructions should be construed as conflicting with or nullifying the instructions from other sources. Be familiar with the hazards and safety requirements in your work environment and always work safely.

- The knifeholder's intended use is to produce a slit with a driven anvil system. There is no other intended purpose.
- Read and understand all instructions before operating the knifeholder. Failure to follow instructions may cause the knifeholder to function incorrectly and can cause serious injury.
- The knifeholder contains spring-loaded components. While operating the knifeholder, follow all existing plant safety instructions and/or requirements.
- Always wear stainless steel protective gloves when changing or removing the knife blade.
- Sharp knives can cause serious injury. 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.
- Inspect the knifeholder cartridge for wear and/or other safety and functional deficiencies daily, before each use.
- Do not carry or lift this product over wet or slippery surfaces.
- All replacement parts used on this product should be made to original Tidland specifications.
- All maintenance and repair procedures performed on this product should be done to Tidland specifications by qualified personnel.



## RECEIVING AND UNPACKING

- Handle and unpack the equipment carefully. Upon arrival, check the shipment against the packing list.
- Promptly report to the carrier any damaged equipment.
- Equipment not 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.

## CAUTION



**Wear eye protection when using tools or compressed air.**

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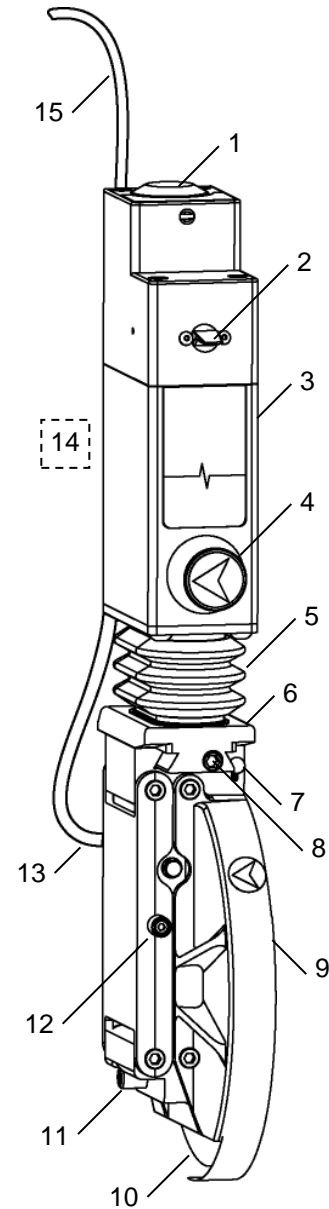
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# KNIFEHOLDER ORIENTATION

## Knifeholder Components

Complete illustrations and part number begin on page 44.

1	Depth Control Knob Increase blade cartridge stroke – rotate counterclockwise Decrease blade cartridge stroke – rotate clockwise
2	Actuator switch Down – extends blade cartridge for setup or operation Up – retracts blade cartridge
3	Knifeholder Control Body
4	Cant Angle Key Blade cartridge angle control
5	Knifeholder Bellows
6	Dovetail (control body to blade cartridge interface)
7	Safety Lock Pin
8	Cartridge Lock Screw Lock cartridge to control body – rotate clockwise Unlock – rotate counterclockwise
9	Blade Cartridge (Blade Guard attachment not shown)
10	Knife Blade
11	Blade Lock Pin Keeps shear blade from rotating. Use only when removing or replacing the blade.
12	Setup Button Use for knifeholder setup and positioning
13	Lower Hose Assembly with Quick Disconnect Provides air supply to blade cartridge for side load Allows removal of blade cartridge from the control body
14	Guide Bar Mount Assembly (not shown)
15	Upper Air Hose Assembly Air supply for control body and blade cartridge



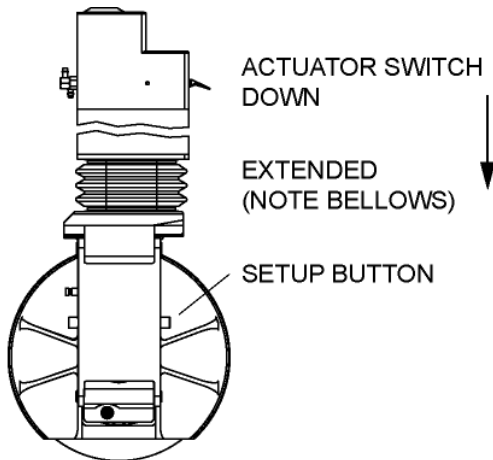
Knifeholder shown in extended position – air valve switch is **down**.

## Specifications

**Note:** Actual speed is dependent upon application and web material.

	Class I	Class II	Class III
<b>Blade Diameter</b>	3.54" (90 mm)	5.91" (150 mm)	7.87" (200 mm)
<b>Minimum Slit Width</b>	1.0" (25.4 mm)	2.0" (50.8 mm)	3.0" (76.2 mm)
<b>Designed Maximum Speed</b>	3,500 fpm (1,067 mpm)	5,500 fpm (1,677 mpm)	10,000 fpm (3,049 mpm)
<b>Recommended Operating Air Pressure (max. 100 psi)</b>	60-90 psi (4.1-6.2 bar)	60-90 psi (4.1-6.2 bar)	60-90 psi (4.1-6.2 bar)

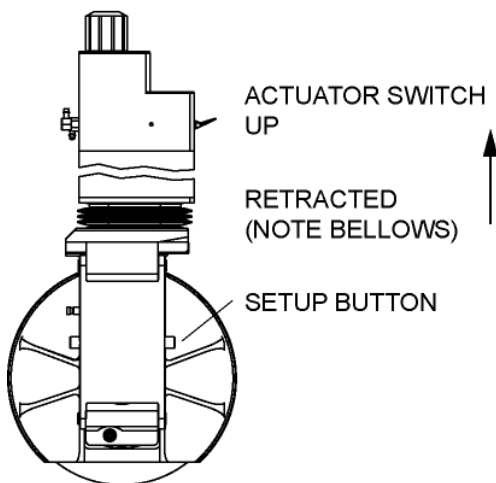
## Actuator Switch



Sends air to the blade cartridge, extending the knifeholder and providing side stroke.

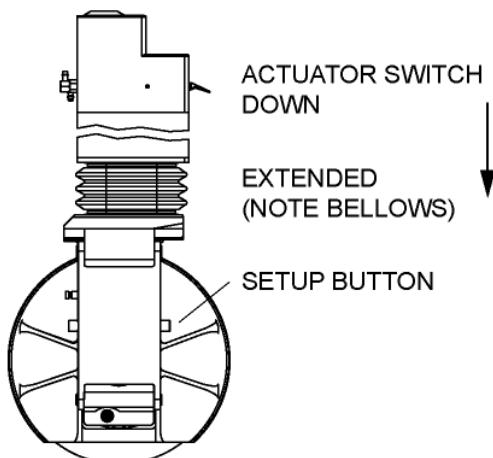
- Use when positioning the knifeholder blade to the anvil ring blade only when product machinery is not in operation.
- Using the actuator switch with the setup button will extend the knifeholder and provide half the side stroke distance.

To position the knifeholder, see pages 22-23.



### Switch UP (Retract)

- Reverses (returns) the blade cartridge side stroke and then fully retracts the blade cartridge.
- Retract when:
  - the knifeholder is not in operation.
  - adjusting blade overlap with depth control knob.
  - traversing the knifeholder to slit positions.



### Switch DOWN (Extend)

- Used with setup button, extends the blade cartridge and then swings it at half side stroke.
- During operation, extends the blade cartridge and then swings it at full side stroke.

# KNIFEHOLDER BLADE GUARD OPTIONS

## 360° Blade Guard Cartridge - Mechanical

The reversible blade guard covers the blade when the knifeholder is retracted during non-operation and handling.

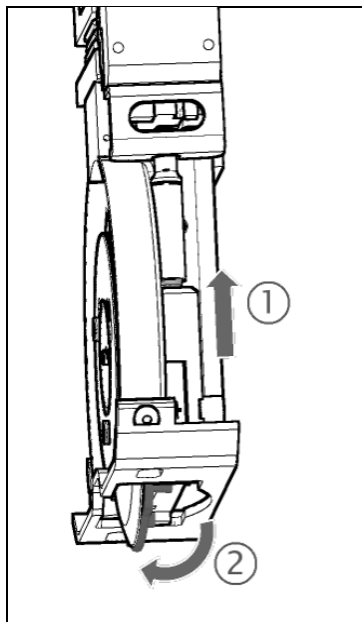
The guard is held in place by a bracket installed on the guide bar mount and is actuated by the extension of the knifeholder.

The actuator assembly is reversible; it can be moved to the other side of the blade guard strut if you need to change the cut side. See page 21.

Modified blade guards are available for strip blades and wide rim blades.

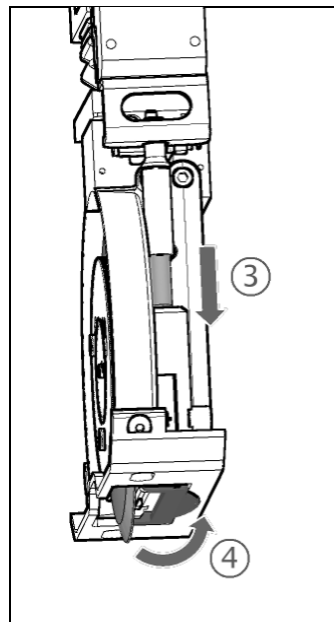
When the blade cartridge is retracted, the blade is guarded. When the blade cartridge extends, the blade is unguarded.

**Guarded**



Knifeholder retracted

**Unguarded**

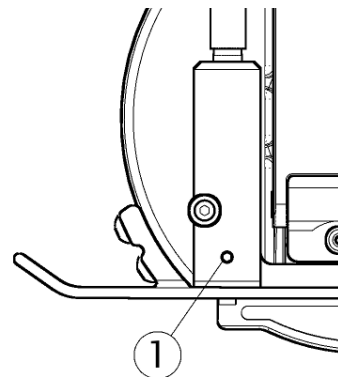


Knifeholder extended

## Adjusting the blade guard

To adjust the guard for a closer fit to the knife blade, turn the M5 adjustment set screw **(1)** clockwise until the guard touches the blade, and then back off one-quarter turn.

The knife blade should spin freely and smoothly on the blade hub and not rub on the guard.





# KNIFEHOLDER BLADE GUARD OPTIONS

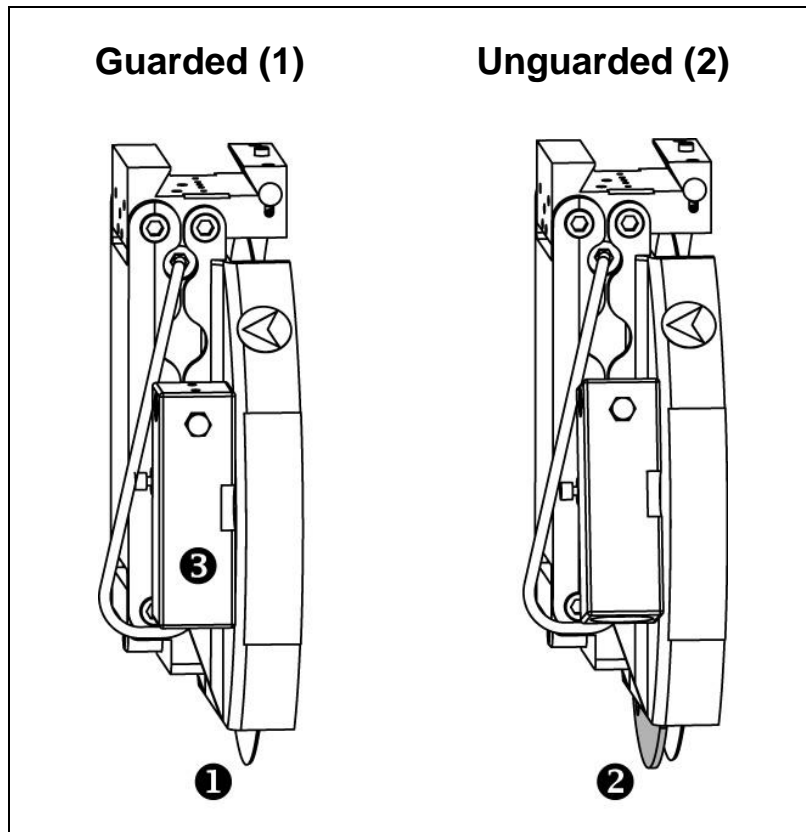
## Pneumatic 360° Blade Guard Cartridge

Class II – 548274

Class III – 548275



This guard does not protect against bodily injury during handling and transport.



### Extending the Blade Guard

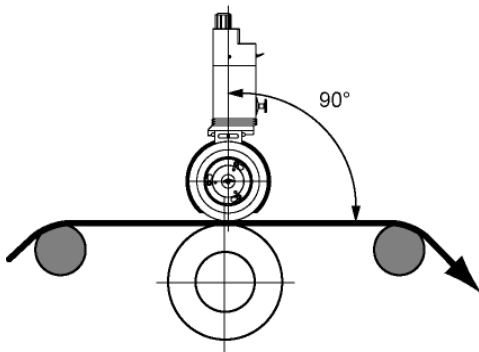
- The blade guard is actuated automatically via an internal air circuit interface between the knifeholder and the cartridge.
- The cartridge extends and the blade guard retracts as the supply air is distributed at the setup knob in either the GREEN (RUN) or YELLOW (SETUP) positions.
- When the supply air is turned off at the setup knob RED (RETRACT) position, or at a gang manifold shut off valve, the cartridge retracts and the blade guard extends out of the cartridge.

### Flow Control Valve

The flow control valve assembly (3) provides a time delay between cartridge retraction and the blade guard extension. Increase the delay by turning the flow control knob clockwise.

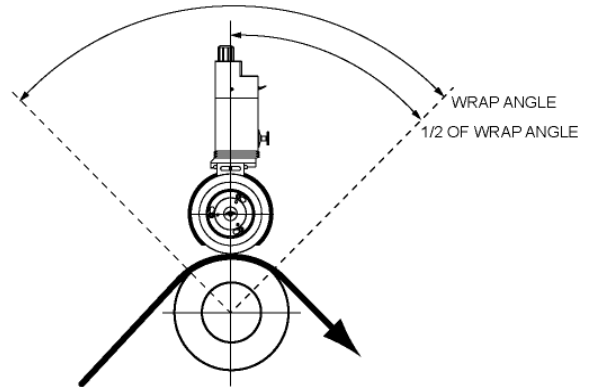
# INSTALLATION

## Select Slitting Type



**TANGENT**

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

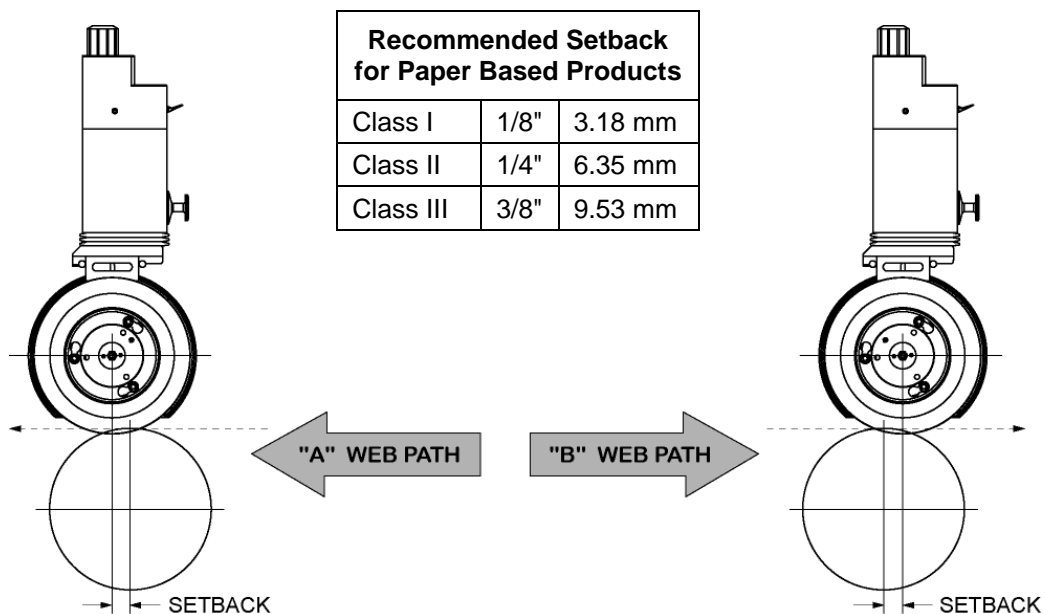


**WRAP**

Knifeholder axis should bisect the wrap angle.  
Knifeholder setback is not required.

## Recommended Knifeholder Setback (For Tangent Slitting Only)

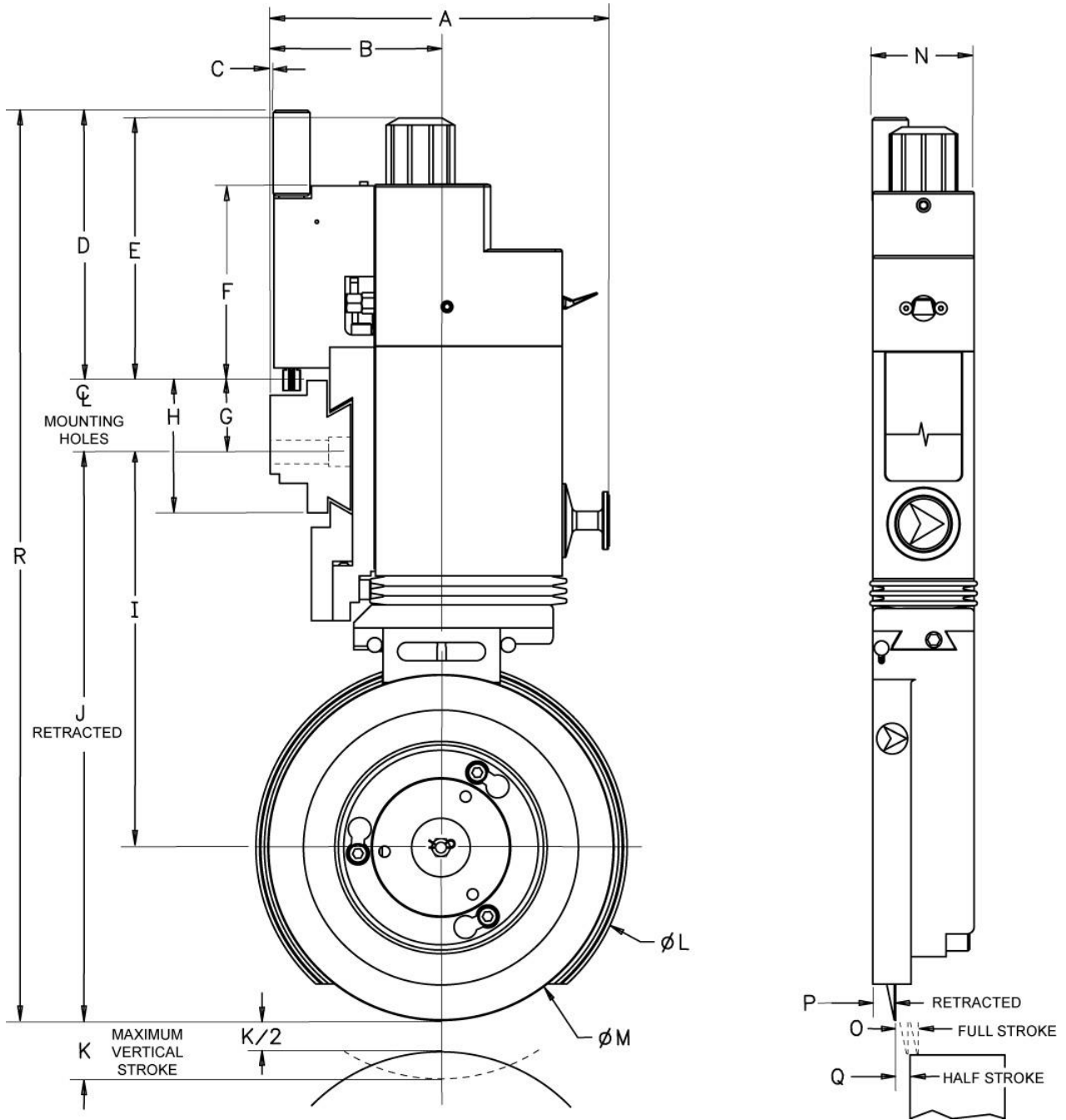
- For best slit result, the web must be in contact with the anvil knife ring at the cut point. If the web contacts the top blade ahead of the cut point, the material will tear instead of slitting cleanly.
- Geometry shown is based on medium weight kraft paper. For assistance with other web materials, call Tidland Customer Service, 1-800-426-1000.



# INSTALLATION

## Prepare to Mount Guide Bar

### Determine Space Requirements



Inches	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
<b>Class I</b>	4.74	2.46	0.05	3.86	3.61	2.89	1.04	1.84	4.85	6.62	0.63	3.92	3.54	0.945	0.12	0.19	0.05	11.51
<b>Class II</b>	5.72	2.95	0.03	4.55	4.41	3.26	1.28	2.34	6.79	9.74	1.00	6.33	5.91	1.75	0.16	0.38	0.08	15.57
<b>Class III</b>	6.47	3.46	0.04	4.73	4.56	3.05	1.28	2.34	7.83	11.77	1.00	8.35	7.87	2.76	0.24	0.77	0.12	17.78

Millimeters	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
<b>Class I</b>	120.5	62.5	1.4	97.9	91.7	73.4	26.4	46.8	123.2	168.1	16.0	100	90	24.0	3.0	4.8	1.3	292.4
<b>Class II</b>	145.3	74.9	0.7	115.5	112	82.9	32.5	59.5	172.3	247.4	25.4	161	150	44.5	4.1	9.6	2.0	395.4
<b>Class III</b>	164.3	87.9	1.0	120	115.7	77.5	32.5	59.5	198.8	298.9	25.4	212	200	70.0	6.1	19.7	3.0	451.6

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

# INSTALLATION

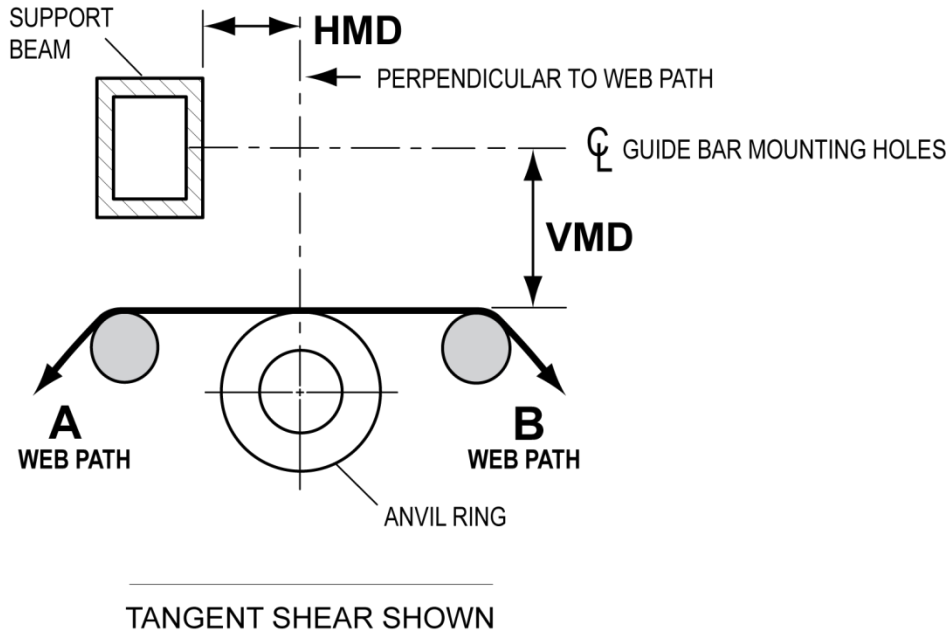
## Determine Mounting Dimensions

### Vertical Mounting Dimension – 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 to the vertical centerline through the center of the anvil ring.



### VMD (Vertical Mounting Dimension)

Tangent & Wrap Slitting	
Class I	6-29/32" (175.4 mm)
Class II	10-3/16" (258.8 mm)
Class III	12-1/4" (311.2 mm)

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

### HMD (Horizontal Mounting Dimension)

	Tangent Slitting *		Wrap Slitting **
	'A' Web Path	'B' Web Path	'A' or 'B' Web Path
Class I	2-9/16" (65.1 mm)	2-5/16" (58.7 mm)	2-7/16" (61.9 mm)
Class II	3-7/32" (81.8 mm)	2-23/32" (69.1 mm)	2-31/32" (75.4 mm)
Class III	3-27/32" (97.6 mm)	3-3/32" (78.6 mm)	3-15/32" (88.1 mm)

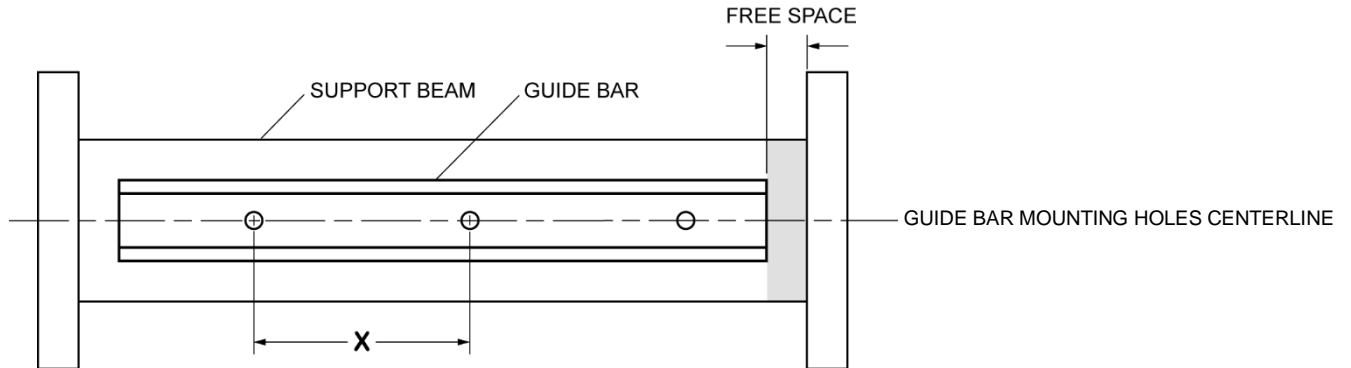
\* These dimensions will result in setbacks as listed in 'Recommended Setback Distance' on page 10.

\*\* These dimensions provide no setback.

# INSTALLATION

## Install Guide Bar on Support Beam

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

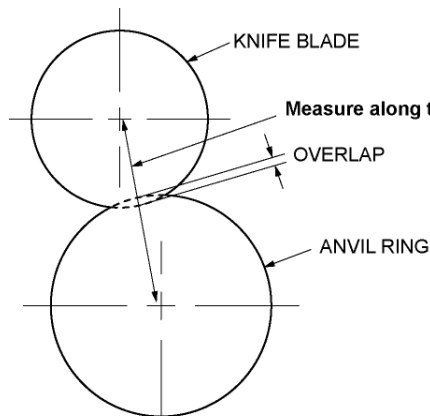


- Determine the center-to-center distance between the mounting bolt holes (**X**) on the guide bar.
  - Standard pre-drilled dimension (**X**) is 12" (304.80 mm).
  - Drill and tap support beam for pre-drilled guide bar: 3/8"-16NC holes
- Before transferring dimension (X) onto the support beam**, make sure there will be enough free space at one end of the beam for knifeholder installation and removal once the guide bar is mounted.

	Minimum Space Recommended for Removal (Free Space)
<b>Class I</b>	2" (50.8 mm)
<b>Class II</b>	3" (76.2 mm)
<b>Class III</b>	4" (101.6 mm)

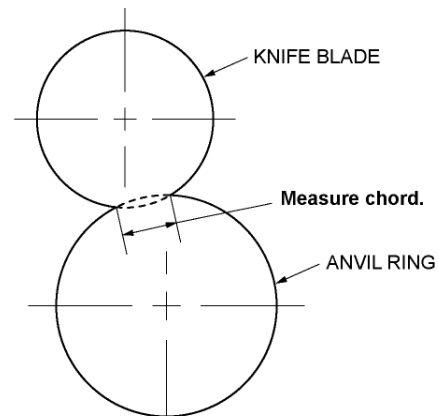
## Methods for Measuring Blade Overlap (For Reference Only)

See pages 22-23 for knifeholder setup instructions.



**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.

# INSTALLATION

## Mount Knifeholder to Guide Bar

### Manual Lock

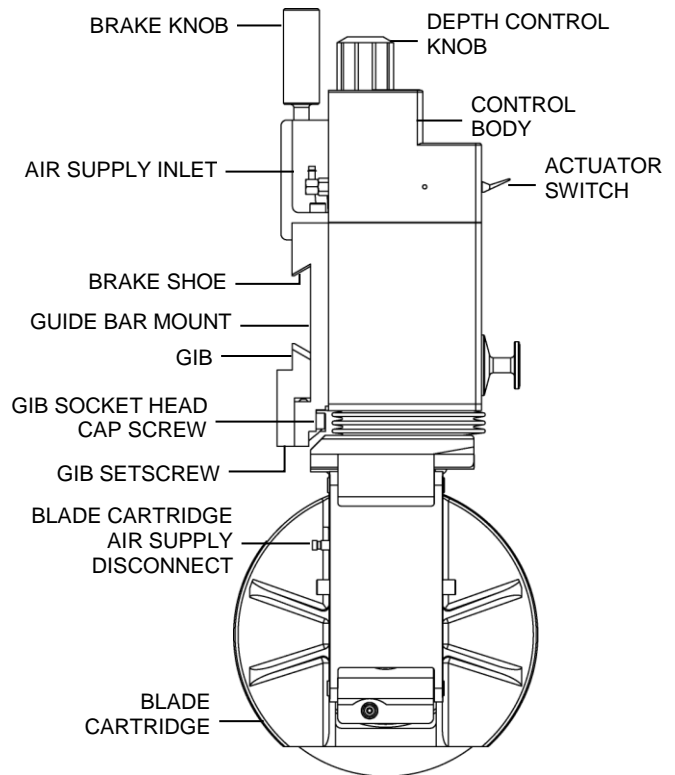
#### Installation at End of Guide Bar (Recommended)

1. Turn the brake knob counterclockwise enough to allow the brake shoe to be manually retracted into the mount. (Push the brake shoe up into mount if extended out.)
2. Align the mount with the guide bar end.
3. Slide the knifeholder onto guide bar. If clearance is restricted, remove blade cartridge (p. 25).
4. Adjust gib, if necessary. (See note below.)
5. Turn the brake knob clockwise to secure the knifeholder in position.
6. Reinstall the blade cartridge onto the control body, if removed (p. 25).
7. Toggle the actuator switch **up** before connecting the air supply.



#### Installation at Center of Guide Bar

1. Remove blade cartridge from the control body.
2. Remove the two socket head cap screws that secure the gib to the mount.
3. Remove the gib.
4. Turn the brake knob counterclockwise to fully retract the brake shoe into the mount. (Push the brake shoe up into mount if extended out.)
5. Place the control body onto the guide bar.
6. While holding the control body securely in place, reinstall the gib. Align the gib socket head cap screw holes with the holes in the mount assembly.
7. Install and tighten the socket head cap screws to secure the gib in place.  
Torque: Class I – 2.1 ft-lbs (2.85 Nm) Class II and III – 4.3 ft-lbs (5.83 Nm)
8. Adjust the gib, if necessary. (See note below.)
9. Turn the brake knob clockwise to secure the knifeholder in position.
10. Reinstall the blade cartridge onto the control body, if removed (p. 25).
11. Toggle the actuator switch **up** before connecting the air supply.



#### To Adjust Gib

1. Loosen the two gib socket head cap screws by 1/4 turn.
2. Tighten or loosen the gib set screw to achieve a secure fit and good knifeholder traverse action on the guide bar. Recommended: 1/4 turn per adjustment
3. Ensure that sides of gib are parallel to sides of knifeholder when adjusting and tightening the two gib socket head cap screws.  
Torque: Class I – 2.1 ft-lbs (2.85 Nm) Class II and III – 4.3 ft-lbs (5.83 Nm)
4. Readjust as necessary.

# INSTALLATION

## Mount Knifeholder to Guide Bar

### Pneumatic Lock

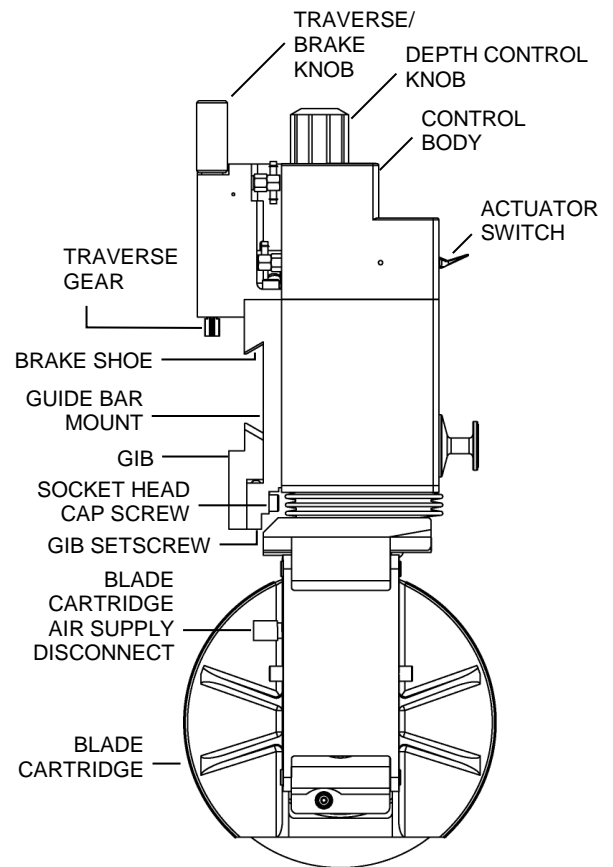
#### Installation at End of Guide Bar (Recommended)

1. Align the mount and traverse gear with the guide bar end and gear rack.
2. Make sure the traverse/brake knob is in the unlocked (up) position. (Push the brake shoe up into the mount if extended out.)
3. Slide the knifeholder onto the guide bar. If clearance is restricted, remove the blade cartridge (p. 25).
4. Turn the traverse knob to move the knifeholder into position.
5. Adjust the gib, if necessary. (See note below.)
6. Push down the traverse/brake knob to lock the knifeholder to the guide bar. Pull up the traverse/brake knob to unlock and traverse the knifeholder.
7. Reinstall the blade cartridge onto the control body (p. 25), if removed.
8. Toggle the actuator switch **up** before connecting the air supply.



#### Installation at Center of Guide Bar

1. Remove the blade cartridge from the control body (p. 25).
2. Remove the two socket head cap screws that secure the gib to the mount.
3. Remove the gib.
4. Place the control body onto the guide bar.
5. While holding the control body securely in place, reinstall the gib and align the gib socket head cap screw holes with the holes in the mount.
6. Install and tighten the socket head cap screws to secure the gib in place.  
Torque: Class I — 2.1 ft·lbs (2.85 Nm) Class II and III — 4.3 ft·lbs (5.83 Nm)
7. Adjust the gib, if necessary. (See note below.)
8. Turn the traverse knob to move the knifeholder into position.
9. Reinstall the blade cartridge onto the control body (p. 25).
10. Push down the traverse/brake knob to lock the knifeholder to the guide bar.
11. Toggle the actuator switch **up** before connecting the air supply.



#### To Adjust Gib

1. Loosen the two gib socket head cap screws **by 1/4 turn**.
2. Tighten or loosen the gib set screw to achieve a secure fit and good knifeholder traverse action on the guide bar. **Recommended: 1/4 turn per adjustment**
3. Ensure that sides of gib are parallel to sides of knifeholder when adjusting and tightening the two gib socket head cap screws.  
Torque: Class I – 2.1 ft·lbs (2.85 Nm) Class II and III – 4.3 ft·lbs (5.83 Nm)
4. Readjust as necessary.

# INSTALLATION

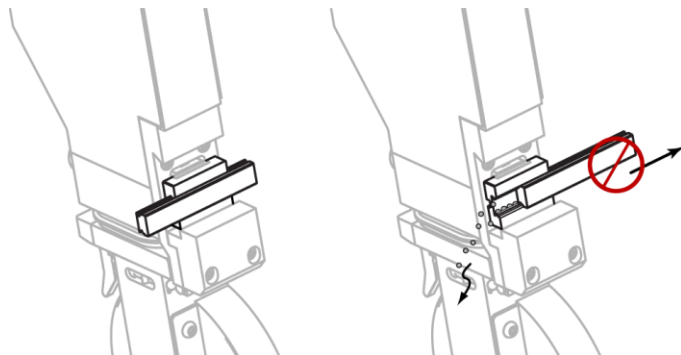
## Mount Knifeholder to Guide Bar

### Easy Glider (Linear Bearing)

Manual or Pneumatic Lock

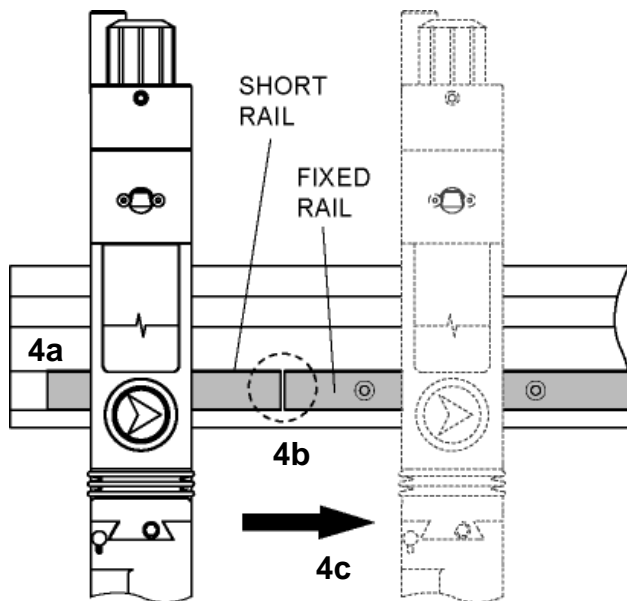
#### READ FIRST

- Do not remove the factory-installed short rail section from the linear rail.
- This rail section must be used to install the knifeholder onto the guide bar rail.
- Failure to use this rail section when installing the knifeholder may result in bearing damage and **void bearing warranty**.
- Mounted linear bearing is factory preset to be loose in the knifeholder back plate.  
**Do not attempt to tighten or adjust.** The movement of the bearing allows the knifeholder to float freely when traversing. When the knifeholder is locked to the guidebar the bearing movement will cease.



#### Mount Knifeholder

1. Choose at which end of the guide bar the knifeholders will be mounted.  
Locate and remove the #10-32 UNF screw from the end stop on the face of your guide bar.
2. **Do not remove the short rail from the knifeholder bearing.**
3. Unlock the knifeholder brake.  
Manual Lock: turn brake knob counterclockwise.  
Pneumatic Lock: pull up on traverse knob.  
(Push the brake shoe up into the back plate if protruding out.)
4. **Install the knifeholder:**
  - a. **Hold the knifeholder and short rail section together. Carefully place the rail section into the keyway on the guide bar.**
  - b. **Align the short rail section with the fixed bearing rail on the guide bar.**
  - c. **Slide the knifeholder onto the fixed bearing rail.**
5. Remove short section of bearing rail from the guide bar; keep it for future knifeholder removal and maintenance.
6. Repeat Steps 4a-4c until all knifeholders are installed on the guide bar.
7. After all knifeholders are installed, reinstall the #10-32 UNF socket head cap screws in the end stop on the guide bar.
8. Reinstall blade cartridges on knifeholders (p. 25).
9. Toggle the actuator switch up on all knifeholders to retract blade cartridges.



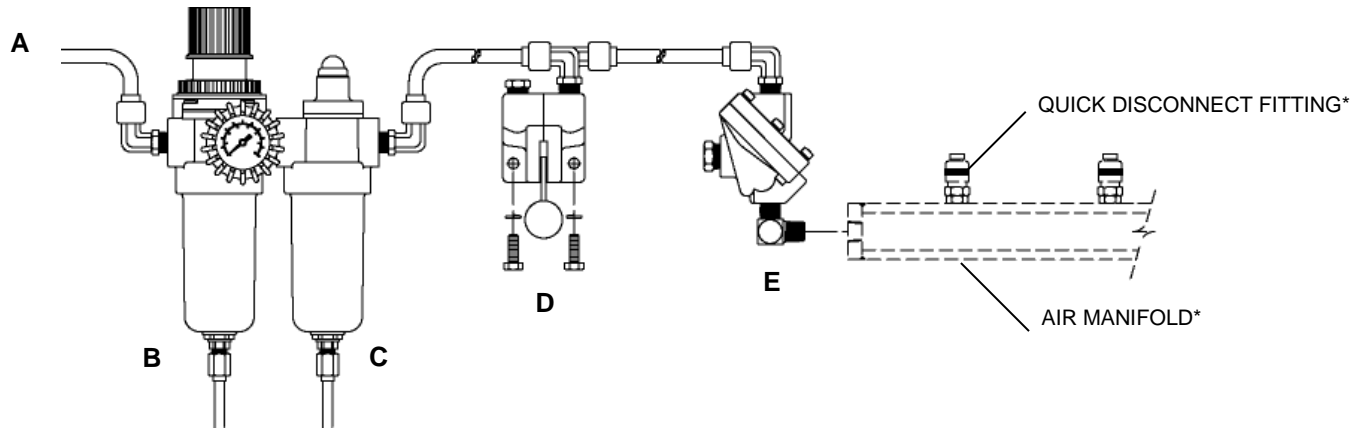
For knifeholder setup procedures, see pages 22-23.



# INSTALLATION

## Pneumatic System Requirements

- To provide the correct air pressure and help achieve quality slitting, Tidland Corporation recommends the use of a filtered and regulated pneumatic system that will prevent airborne oil or water from contaminating the knifeholders.
- The pneumatic system includes:
  - A) 3/8" (9.5 mm) supply air lines
  - B) 5 micron air filter/pressure regulator with gauge (0-100 psi or 0-6.9 bar)
  - C) Coalescing filter
  - D) 3-way manual valve with muffler
  - E) Quick exhaust valve with muffler



\* Air manifolds and quick disconnect fittings are also available from Tidland.

- **Recommended operating air pressure: 60-90 psi (4.1-6.2 bar)**  
This is a guideline for knifeholder setup. Actual air pressure is dependent upon application and material.
- **Maximum operating air pressure: 100 psi (6.9 bar)**
- Clean, filtered, non-lubricated, dry air is required for optimal performance of the knifeholder.
- Before operating, make sure that the air lines from the air manifold to the knifeholder are securely connected.

# OPERATION

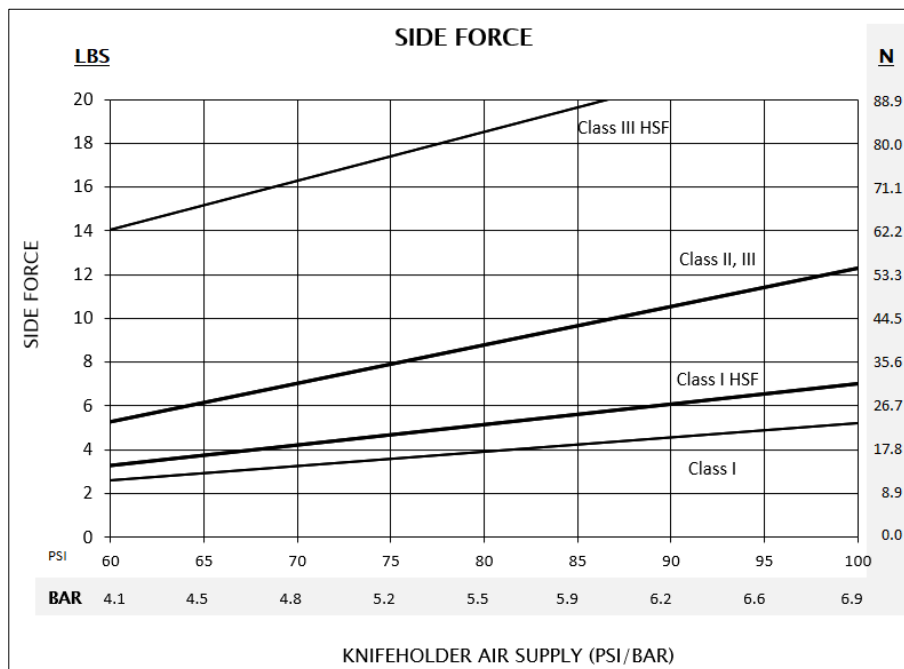
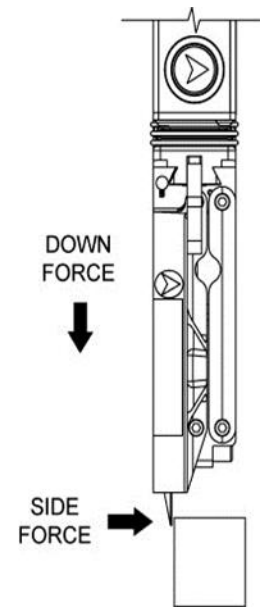
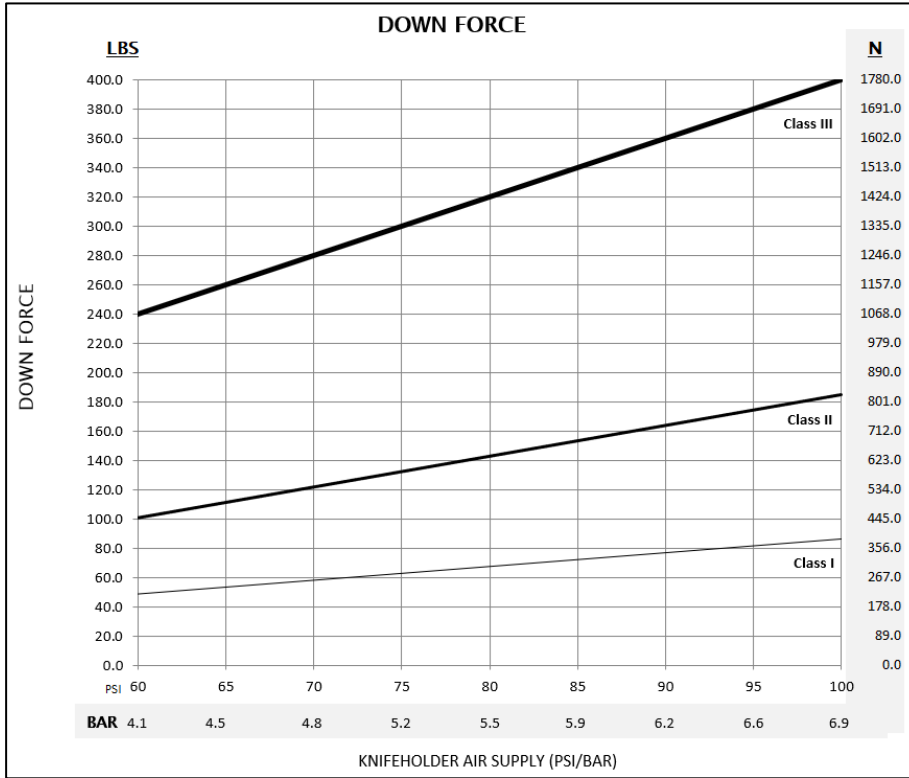
## Operating Air Pressure

### Down Force and Side Force

60-90 psi (4.1-6.2 bar) recommended

100 psi (6.9 bar) maximum

Knifeholder loads will vary slightly from averages shown.



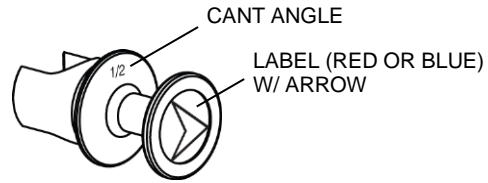
# CANT KEY AND WEB PATH

## Cant Key

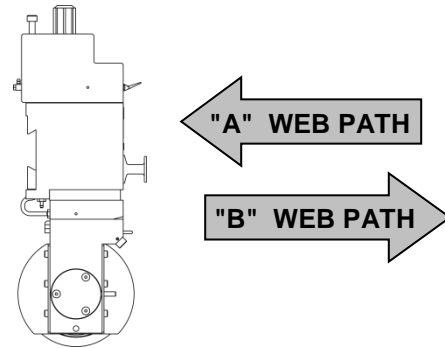
### Selection

**Cant Angle Options:** 0°, 1/4°, 1/2°, 1°

The angle is engraved in the key.



- The cant key label color indicates the web path direction as determined at the time of sale.  
'A' Web Path = RED label  
'B' Web Path = BLUE label
- If the web path needs to be reversed at any time, Tidland recommends replacing the cant key with one of the correct color.



## Orientation

The arrow on the cant key label should:

- point to the nip point (blade contact side) of the anvil ring (see page **Error! Bookmark not defined.**).
- point in the same direction as the arrow on the blade cartridge.

Arrows pointing in opposite directions indicate that:

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

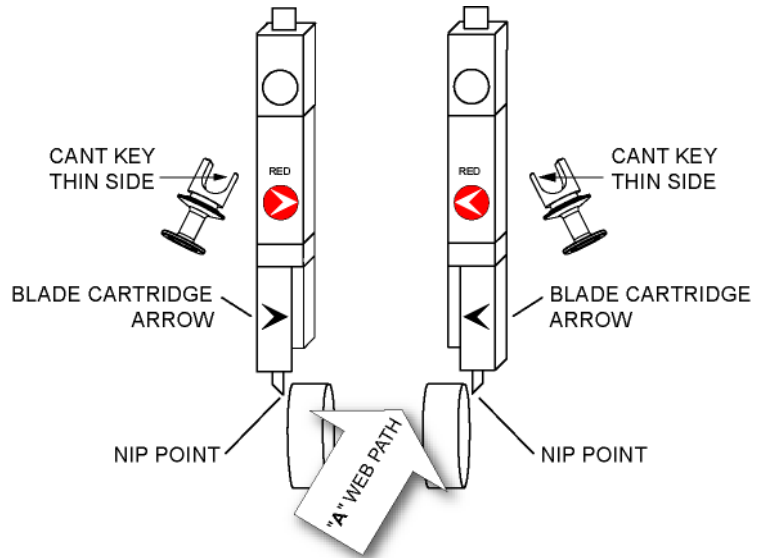
**To change the cant key orientation**, pull the key all the way out of the control body, rotate it 180° and reinstall the key, pushing it firmly into the control body.

# CANT KEY AND WEB PATH

## Cant Key Orientation (continued)

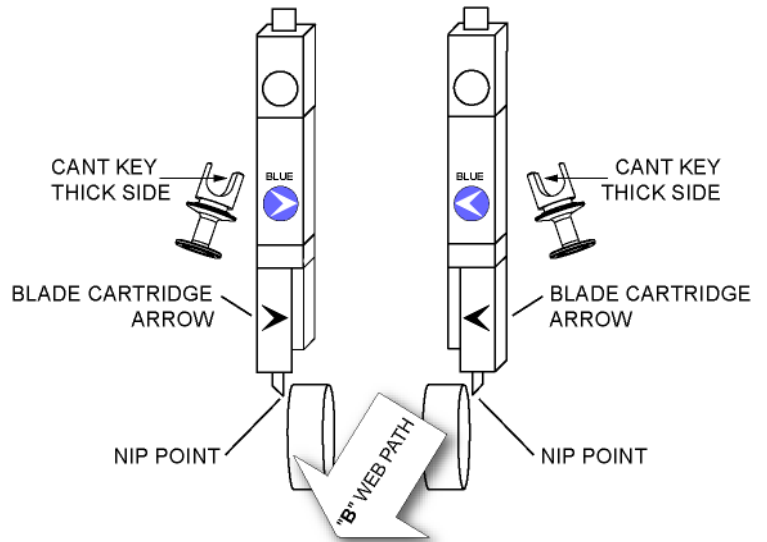
### "A" Web Path

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

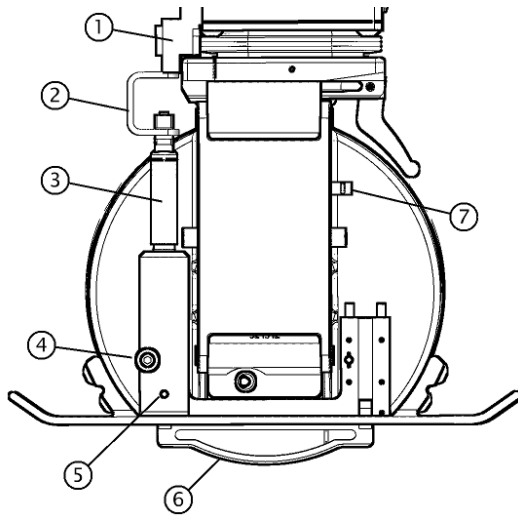


### "B" Web Path

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



## 360° Blade Guard Cartridge



1	Guide bar mount
2	Bracket (stationary)
3	Actuator assembly (reversible)
4	Actuator assembly release pin
5	Adjustment screw
6	Blade guard
7	Air fitting for hose assembly

### Reversing the blade guard actuator and hose assembly

If you reverse the cartridge on the knifeholder, you must also reverse the actuator assembly and the hose assembly.



Remove the blade cartridge from the knifeholder before reversing the actuator assembly.

1. Disconnect the hose assembly at the cartridge (1).
2. Use 3 mm hex wrench to press in and turn the lock at (2), and lift the actuator assembly to remove.
3. Reverse the positions of the air plug (3) and air hose fitting (4) on the cartridge.
4. Install actuator assembly on the side opposite the hose fitting.
5. Reconnect the hose assembly at the cartridge (5). Make sure the other end of the hose is still connected to the knifeholder.

## Knifeholder

### Manual Lock

**Ensure that:**

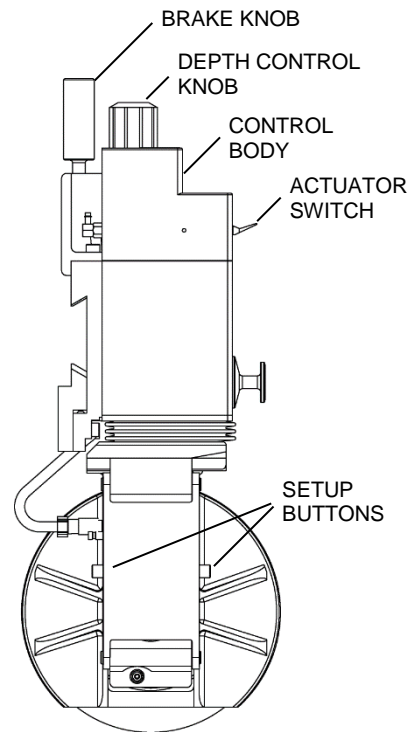
- anvil rings are in the desired slit position.
- blade cartridge is securely locked to the control body.
- air supply is attached and set to minimum pressure required to slit your web material.

1. Adjust depth control knob so that it extends up from the control body:  
Class I – 5/16"    Class II and III – 1/2"

**DO NOT SCREW the depth control knob all the way into the body. There will be no travel during cartridge extension.**

2. Toggle the actuator switch up to retract the blade cartridge.
3. Loosen the brake knob.
4. Manually slide the knifeholder along the guide bar until knife blade is close to, but not touching, the cut side of the corresponding anvil ring.

**Ensure that the knife blade is not directly over the anvil ring in order to prevent damage by collision when the blade cartridge is extended in the next step.**



### Setup

5. Press and hold one of the two cartridge setup buttons\*, and **then** toggle the actuator switch down to extend the blade cartridge.
6. Release the setup button **after** the cartridge is extended and has completed its side stroke. The knifeholder will remain in this position until the cartridge is retracted.
7. Slide the knifeholder along the guide bar until the knife blade and the anvil ring lightly contact.
8. Tighten the brake knob. Make sure that the knifeholder remains perpendicular to the guide bar and that the knife blade and anvil ring make contact.
9. Observe the overlap of the knife blade and anvil ring.  
If the overlap is correct — .030" (0.8 mm) — the knifeholder is ready to slit: go to Step 11.  
If overlap is incorrect, continue with Step 10.
10. Toggle the actuator switch up (retract) before making any blade overlap adjustments.  
To increase the overlap, turn the depth control knob counterclockwise.  
To decrease the overlap, turn the knob clockwise.

**Note:**        One **click** increases or decreases the overlap **.004" (0.1 mm)**.  
                  One **complete turn** increases or decreases the overlap **.040" (1.0 mm)**.

**DO NOT SCREW the depth control knob all the way into the body. There will be no travel during cartridge extension.**

11. Toggle the actuator switch up (retract).  
**Note:** If the blade cartridge is not retracted after completing the setup and before slitting, the knifeholder will not function as designed and may result in poor slit quality.

### Operate

12. Toggle the actuator switch down (extend) to begin slitting operation.

\*See Page 52 for location of setup button on Class I High Side Force Cartridge

## Knifeholder

### Pneumatic Lock

#### Ensure that:

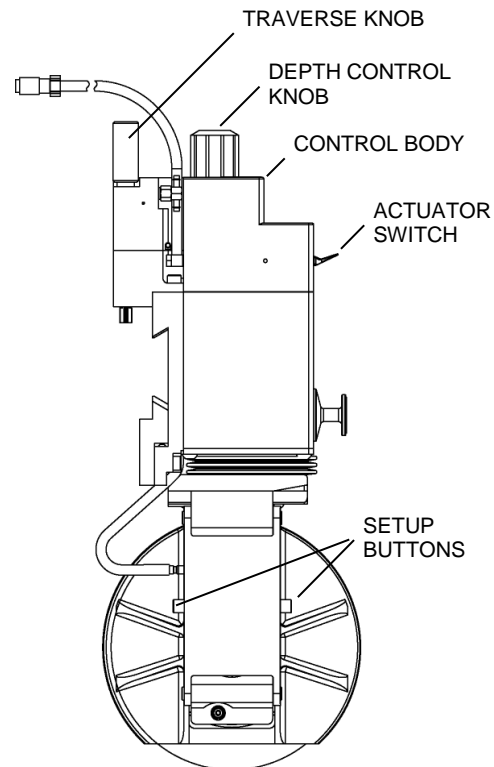
- anvil rings are in the desired slit position.
- blade cartridge is securely locked to the control body.
- air supply is attached and set to minimum pressure required to slit your web material.

1. Adjust depth control knob so that it extends from the control body:  
Class I – 5/16"    Class II and III – 1/2"

**DO NOT SCREW the depth control knob all the way into the body. There will be no travel during cartridge extension.**

2. Toggle the actuator switch up to retract the blade cartridge.
3. Pull up on the traverse knob.
4. Turn the traverse knob to move the knifeholder along the guide bar until knife blade is close to, but not touching, the cut side of the corresponding anvil ring.

**Ensure that the knife blade is not directly over the anvil ring in order to prevent damage by collision when the blade cartridge is extended in the next step.**



#### Setup

5. Press and hold one of the two cartridge setup buttons\*, and **then** toggle the actuator switch down to extend the blade cartridge.
6. Release the setup button **after** the cartridge is extended and has completed its side stroke. The knifeholder will remain in this position until the cartridge is retracted.
7. Traverse the knifeholder along the guide bar until the knife blade and the anvil ring lightly contact.
8. Press down on the traverse knob to lock knifeholder to guide bar. Make sure that the knifeholder remains perpendicular to the guide bar and that the knife blade and anvil ring make contact.
9. Observe the overlap of the knife blade and anvil ring.  
If the overlap is correct — .030" (0.8 mm) — the knifeholder is ready to slit: go to Step 11.  
If overlap is incorrect, continue with Step 10.
10. Toggle the actuator switch up (retract) to make any blade overlap adjustments.  
To increase the overlap, turn the depth control knob counterclockwise.  
To decrease the overlap, turn the knob clockwise.

**Note:** One **click** increases or decreases the overlap **.004" (0.1 mm)**.  
One **complete turn** increases or decreases the overlap **.040" (1.0 mm)**.

**DO NOT SCREW the depth control knob all the way into the body. There will be no travel during cartridge extension.**

11. Toggle the actuator switch up (retract).  
**Note:** If the blade cartridge is not retracted after completing the setup and before slitting, the knifeholder will not function as designed and may result in poor slit quality.

#### Operate

12. Toggle the actuator switch down (extend) to begin slitting operation.

\*See Page 52 for location of setup button on Class I High Side Force Cartridge

# MAINTENANCE

## Preventive

- Keep anvil rings and knifeholder 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.
- Check air pressure to the knifeholders: Clean, dry, non-lubricated air is essential for optimal knifeholder performance.
- Check for air leaks at the knifeholder and manifold.

**Note:** DO NOT IMMERGE knifeholders in solvents. Wipe the outer surfaces with a clean, dry rag.

## WARNING! CAN CAUSE SEVERE INJURY!



- **Blades are sharp!**
- **Avoid injury—always wear stainless steel protective gloves when handling blades.**

## Weekly

- Check knifeholder air pressure. Knifeholder air pressure requirements: 1½ cfm @ 60-90 psi (4.1-6.2 bar).
- Blow down the blade cartridge to remove dust build up.
- Check hose connections to the knifeholders for leaks or cracks.
- Inspect control body dovetail assembly o-rings. Replace if damaged or missing.
- Check blade cartridge half stroke function.

## Monthly

- Check adjustment of gib to the guide bar 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 necessary.

## Bi-Yearly

- Clean and inspect blade cartridge bearings for looseness.
- Remove depth control knob and inspect for dust build up, if applicable.
- Remove cant key and inspect for excessive wear. Replace if necessary.
- Check cant key o-ring for damage. Replace if necessary.

## Guide Bar Cleanup

- Periodically wipe the dovetail guide bar clean and lubricate with a silicone dry film lubricant. Tidland Corporation recommends using *Dow Corning 557 Silicone Dry Film Lubrication* to assure smoother knifeholder movement.

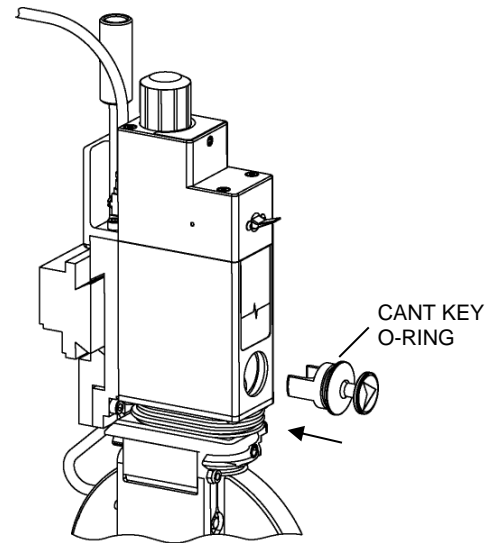


## Cant Key O-ring

The cant key must remain tight in the knifeholder body. If the cant key becomes loose in the body or if cracks in the o-ring are visible, replace the o-ring.

### Replacing the O-ring

1. Pull the o-ring straight out from the control body.
2. Remove o-ring from the cant key.
  - Caution!** Do not nick or otherwise damage o-ring groove edges when removing o-ring.
3. Using *Parker Super O-Lube*, lubricate the new o-ring and the cant key o-ring groove.
4. Install new o-ring into the cant key o-ring groove.
5. Select arrow orientation as described in *Cant Key Orientation* on page **Error! Bookmark not defined..**
6. Push the cant key straight into the knifeholder body.



## Blade Cartridge

### Removing the Cartridge

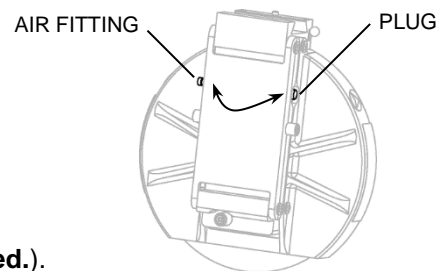
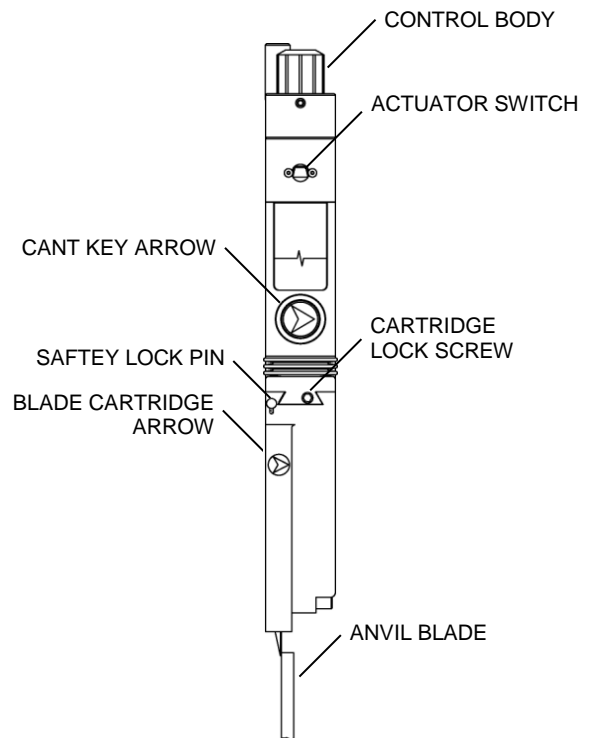
1. Unlock the cartridge lock screw.
2. Press and hold down the safety lock pin and slide the blade cartridge off the control body.

### Reinstalling the Cartridge

1. Slide the blade cartridge onto the control body.
2. The safety lock pin will 'snap' in place when the blade cartridge is in the correct position.
3. Tighten the cartridge lock screw.
4. Confirm that the arrow on the blade cartridge is pointing in the same direction as the arrow on the cant key.

### Reversing the Cartridge

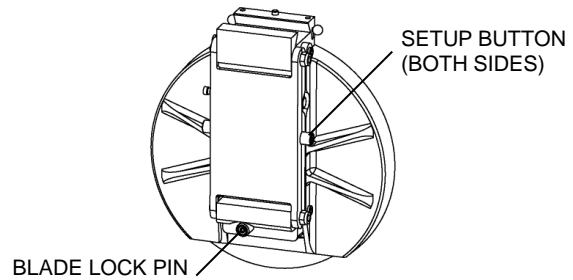
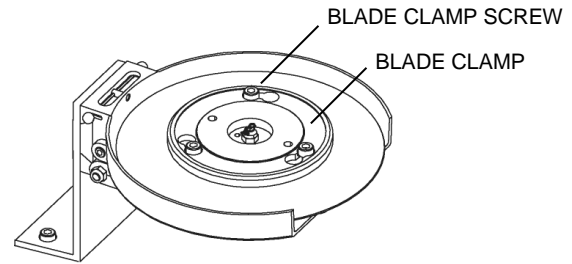
1. Disconnect the air hose from the cartridge body airfitting.
2. Unlock the cartridge lock screw.
3. Press and hold down the safety lock pin and slide the blade cartridge off the control body.
4. Remove the plug and air fitting and switch their positions in the cartridge body.
  - Note: Use minimal Loctite 222 on the threads before reinstalling them.
5. Replace the blade cartridge onto the control body in the opposite direction from the way it was removed. The safety lock pin will 'snap' into place when the blade cartridge is in the correct position.
6. Tighten the cartridge lock screw.
7. Reconnect the air hose to the air fitting.
8. Remove the cant key and reinstall it back in the control body, making sure that the arrow on the cant key is pointing in the same direction as the arrow on the blade cartridge (*Cant Key Orientation*, p. **Error! Bookmark not defined.**).



## Knife Blade

### Removing the Blade

1. Remove the blade cartridge (p. 25).
2. **Note:** Mount the blade cartridge to a Tidland bench fixture for ease and safety of blade removal.
3. Press and hold the blade lock pin and rotate the blade hub until it stops.
4. Loosen the three blade clamp screws.
5. Rotate the blade clamp counterclockwise and slide it off the blade hub when the clearance holes are aligned with the blade clamp screw heads.
6. Remove the knife blade.



### WARNING! CAN CAUSE SEVERE INJURY!



- **Blades are sharp!**
- **Avoid injury—always wear stainless steel protective gloves when handling blades.**

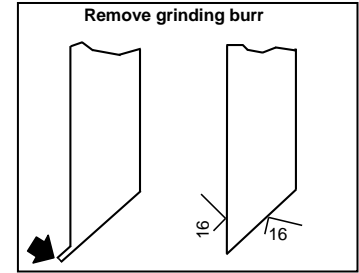
### Replacing or Reinstalling the Blade

1. Make sure the blade cartridge is held securely.  
Note: Use of the Tidland bench fixture is recommended.
2. Clean the blade hub surface where the blade mounts to assure correct fit of the blade and to help prevent blade runout (wobble).
3. Install the knife blade with the slitting edge toward the strut.
4. Install the blade clamp onto the blade hub. Rotate the blade clamp clockwise until the counterbored areas of the clearance holes are under the blade clamp screw heads.
5. Tighten the three Grade 8.8 blade clamp screws to the appropriate torque value:
  - Class I ..... 9 in·lbs (1.02 Nm)
  - Class II and III ..... 45 in·lbs (5.10 Nm)
6. Reinstall the blade cartridge onto the dovetail (p. 25).

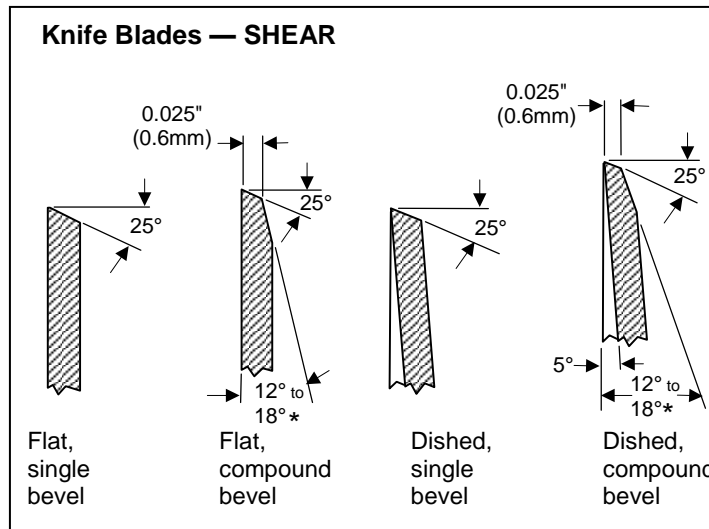
# MAINTENANCE

## Blade Grinding and Finishing

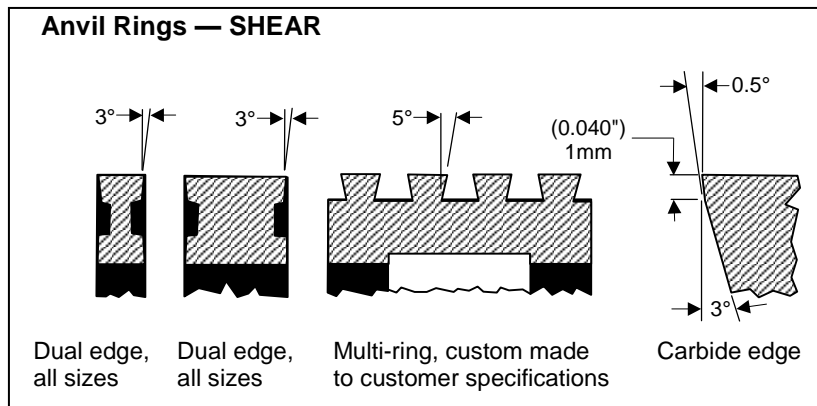
- Correct blade sharpness is essential for shear and crush slitting operations.
- To reduce chipping and rapid dulling of blades, it is important to remove burred edges.
- Grind the blade edge as smooth as possible to avoid dust formation during the slitting process.
- **Before putting blade into operation**, 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 Procedure			
Step	Procedure	Wet/Dry	Grit/Hardware
1	If required, 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



\* 12° for blades  $\phi$ 150mm and smaller; 18° for blades  $\phi$ 180mm and larger



# TROUBLESHOOTING

## Slit Quality

Problem	Possible Cause	Recommended Solution
The slit edge is fuzzy	Dull blade	Replace blade.
	Wrong cant key	Replace cant key.
	Knifemaker is loose on the guide bar	Check the knifemaker to make sure that it is secure on the guide bar mount and check gib adjustment.
	Too much overlap	Correct overlap, see <i>Knifemaker Operation</i> .
Slit line is not straight	Incorrect setback	Check geometry.
	Driven anvil run-out	Reset anvil ring.
Web tears or splits	Knifemaker is loose on the guide bar	Check the knifemaker to make sure that it is secure on the guide bar mount and check gib adjustment.
	Incorrect setback	Check geometry, see <i>Knifemaker Installation</i> .
	Too much overlap	Correct overlap, see <i>Knifemaker Installation</i> .
Web folds down	Insufficient overspeed of the driven anvil	Adjust overspeed to be 3-5% greater than the winder speed.
	Wrong cant key	Replace cant key.
Web breaks	Cant key is incorrectly installed	Check web direction, see <i>Cant Key Installation</i> .
	Dull blade	Replace blade.
	Incorrect setup	See <i>Knifemaker Installation</i> .
	Web tension too high	Reduce tension.
Short blade life	Low driven anvil speed	Check the driven anvil speed.
	Too much overlap	Correct overlap, see <i>Knifemaker Operation</i> .
	Side force too high	Check air pressure.
Web bunches in front of knife blade	Driven anvil run-out	Reset anvil ring.
	Insufficient overspeed of the driven anvil	Adjust overspeed to be 3-5% greater than the winder speed.

# TROUBLESHOOTING

## Knifeholder Performance

Any problems experienced upon initial start up of the knifeholder system should be reported promptly to a Tidland Knifeholder Representative.

Problem	Possible Cause	Recommended Solution
Sluggish knifeholder action (extension or retraction)	Low air pressure	Minimum 50 psi required
	External air fitting leaks	Check hoses and fittings for leaks
	Excessive air leak around depth control knob in the extended position only	Possible bad o-ring See <i>Upper Body &amp; Piston Disassembly</i> Class I, p. 38 Class II, III, p. 40
	Excessive air leak around depth control knob in the extended or retracted position	Possible bad o-ring on 3-way valve. Contact Tidland Knifeholder Technician. 1-800-426-1000
	Excessive air leak around the knifeholder actuator switch in the extended or retracted position	Replace switch.
	Body gasket leak	Check for loose screws between upper and lower body.
	Lubrication required on internal body parts: Piston Assembly O-ring Piston Guide Rod Piston Assembly Stroke Stop Rod Piston Guide Rod Bushing	See <i>Upper Body &amp; Piston Disassembly</i> : Class I, p. 38 Class II or III, p. 40  See <i>Lubrication and Loctite Reference Charts</i> starting on p. 1.
Sticking Piston Assembly due to knifeholder abuse	Dropping knifeholder or striking with hammer can cause binding. Rebuild knifeholder and replace non-repairable parts.	
Knifeholder doesn't retract when actuator switch is toggled up.	Broken Piston Return Spring	Refer to <i>Dovetail Disassembly Procedure</i> . Refer to <i>Disassembly Procedures for Upper Body, Lower Body and Piston</i> .

# TROUBLESHOOTING

## Knifeholder Performance *(continued)*

Problem	Possible Cause	Recommended Solution
Depth Control Knob feels excessively tight or loose.	Loose or damaged detent	<b>Note:</b> It is important that the detent keeps the depth control knob from rotating during slitting operation. If the detent loosens or breaks, it must be replaced.
Difficult knifeholder movement on guide bar	Dirty guide bar	Clean and lubricate guide bar with <i>Dow Corning 557 Dry Film Lubricant</i> .
	Sticky brake shoe	Clean brake shoe. Clean and lubricate brake shoe o-ring. Use <i>Parker Super O-Lube</i> .
Blade Cartridge – No Side Stroke (run or setup)	Blade cartridge air supply hose not connected	Connect air supply hose to blade cartridge.
Low air pressure	Debris build-up in depth control knob bore.	Check air pressure (min. 50 psi required) With air hose, blow out any accumulated dust in the depth control knob counterbore. Remove, clean out and reassemble knob. Replace knob, if necessary. <b>Note:</b> Excessive buildup of dust can prevent the 3-way valve from activating the airflow required to shift the cartridge.

## Class I, II, and III

The disassembly instructions in this manual are for your safety and protection. They are a guide for selective sub-assembly inspection, maintenance and part replacement.

To avoid warranty violations, consult with a Tidland Knifeholder Service Technician for any disassembly not covered in this publication.

Tidland Customer Service  
1-800-426-1000

## Removing the Knifeholder from the Guide Bar

### For All Knifeholders

1. Toggle the actuator switch up to retract the blade cartridge.
2. Disconnect air supply from the knifeholder.
3. Unlock the knifeholder from the guide bar.
  - Manual Lock: turn the brake knob counterclockwise.
  - Pneumatic Lock: pull up on the traverse knob.

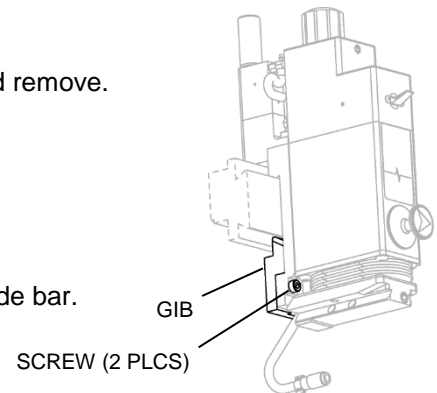
### For Manual and Pneumatic Mounts

Move the knifeholder into the free space at the end of the guide bar and remove.

### For Removal from Center of Guide Bar

1. Remove the blade cartridge (p. 25).
2. Remove the gib (see illustration).
3. Lift the knifeholder off of the guide bar.

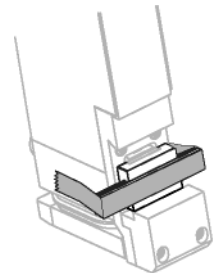
**Note:** Do not reinstall gib until after knifeholder is reinstalled on guide bar.



### For Linear Bearing Mount

1. Choose at which end of the guide bar the knifeholder will be removed, and move the knifeholder just to the end of the fixed rail on the guide bar.
2. Remove the #10-32 UNF screw from the end stop on the face of the guide bar.
3. In the space at the end of the guide bar, align the short piece of rail (received with each knifeholder bearing mount) with the fixed rail and transfer the knifeholder from the fixed rail to the short rail.
4. Hold the knifeholder and the short rail together and carefully remove them from the guide bar. **Do not remove the short rail from the knifeholder bearing mount.** You will need it to reinstall the knifeholder on the guide bar.

★ **TIP:** Secure the short rail to the linear bearing with a small piece of tape to retain the bearing balls during maintenance.

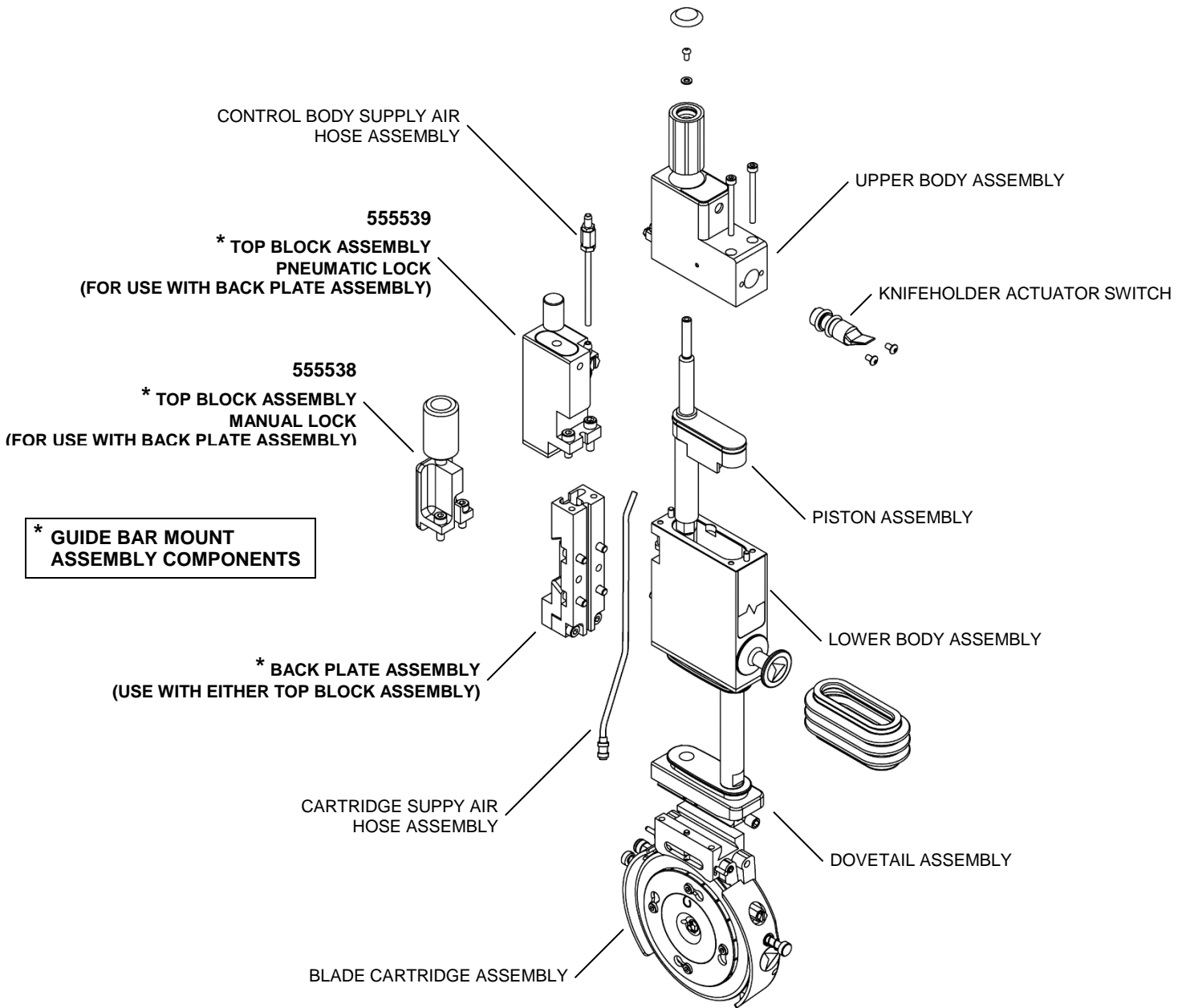


## Reinstalling the Knifeholder after Maintenance

- Manual Lock Mount, p. 14
- Pneumatic Lock Mount, p.15
- Linear Bearing Mounts, p. 16

# DISASSEMBLY AND MAINTENANCE PROCEDURES

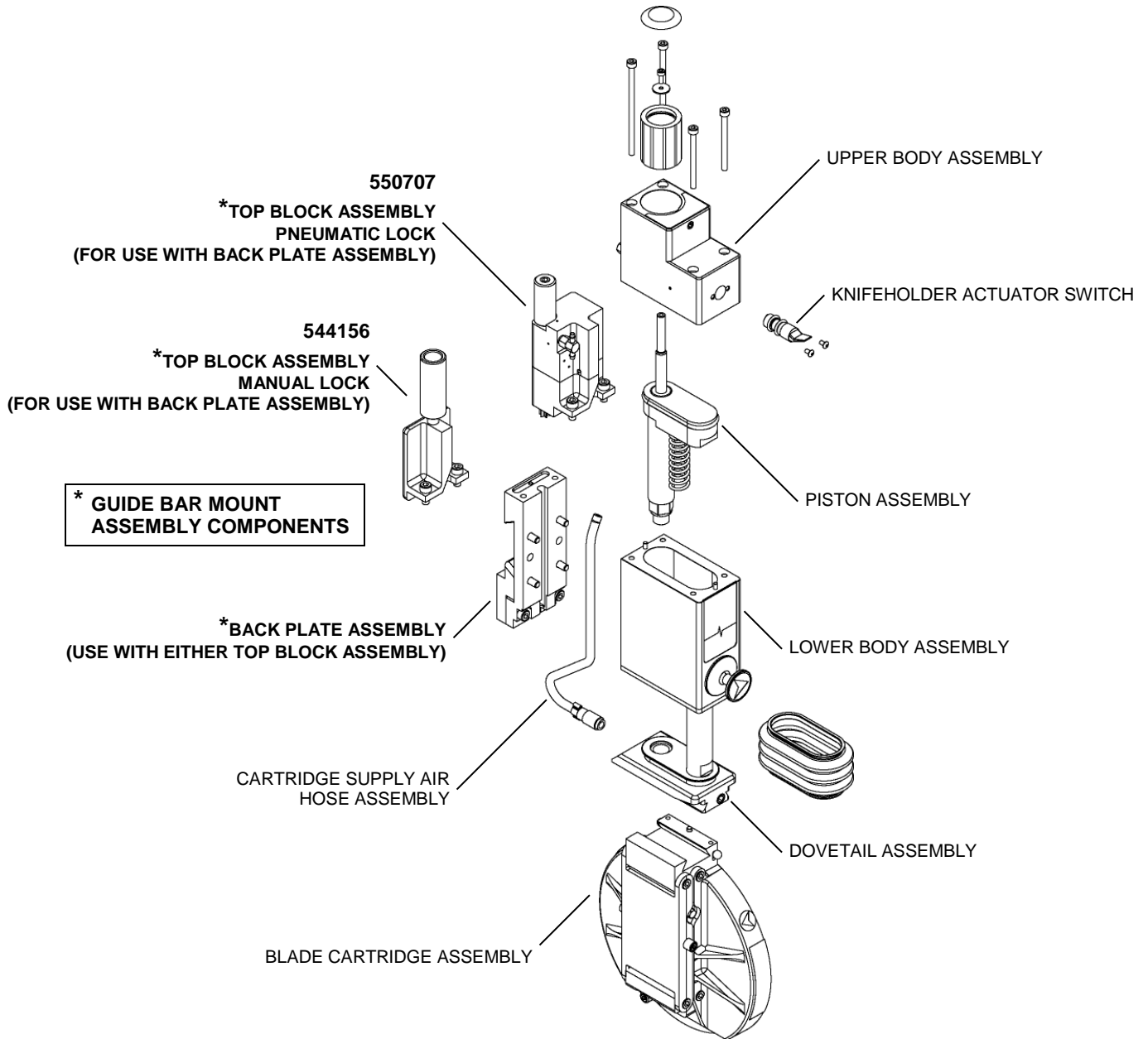
## Knifeholder Sub-Assembly Identification Class I





# DISASSEMBLY AND MAINTENANCE PROCEDURES

## Knifeholder Sub-Assembly Identification Class II and III



## Guide Bar Mount Assembly – Class I, II, III Manual Lock

Complete parts illustration: Class I, II, and III, page 60

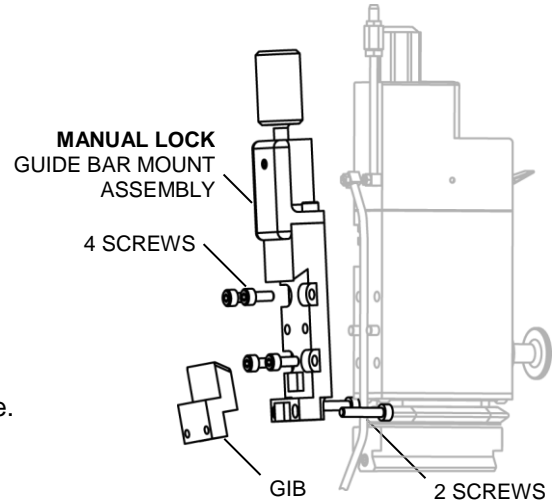
### Recommended Tools

- Class I ..... 2 and 3 mm hex wrench
- Class II ..... 4 mm hex wrench
- Class III ..... 4 and 5 mm hex wrenches
- *Parker Super O-Lube*

### Disassembly Procedure (Class I shown)

1. Disconnect air supply hose at the manifold.
2. Remove knifeholder from guide bar.
3. Remove blade cartridge from control body.
4. Remove gib by removing two socket head cap screws.
5. Remove the guide bar mount assembly by removing four socket head cap screws.

Guide Bar Mount (Manual Lock) disassembly is complete.

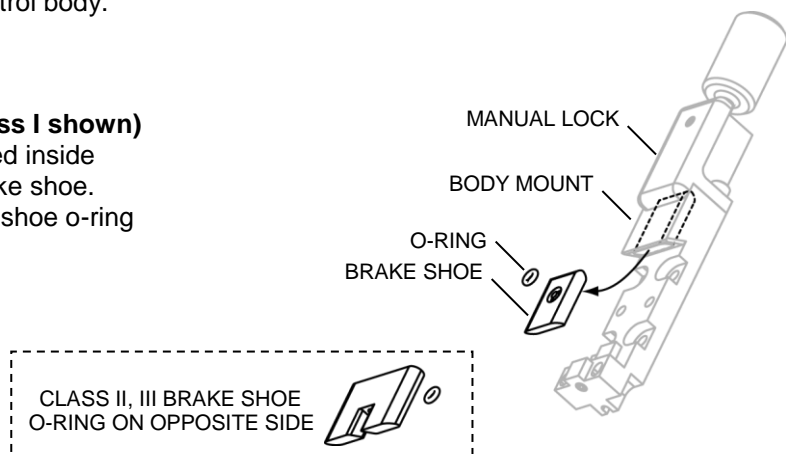


### To Reassemble Guide Bar Mount (Manual Lock)

1. Reinstall the guide bar mount assembly on the control body and tighten the four socket head cap screws to the appropriate torque value:
  - Class I (M4) ..... 2.1 ft·lbs (2.85 Nm)
  - Class II (M5) ..... 4.3 ft·lbs (5.83 Nm)
  - Class III (M6) ..... 7.3 ft·lbs (9.89 Nm)
2. Place the control body on the guide bar and reinstall the gib with two socket head cap screws. Refer to *Knifeholder Installation*, page 14, Step 5. Tighten fasteners to the appropriate torque value:
  - Class I (M4) ..... 2.1 ft·lbs (2.85 Nm)
  - Class II (M5) ..... 4.3 ft·lbs (5.83 Nm)
  - Class III (M5) ..... 4.3 ft·lbs (5.83 Nm)
3. Reinstall blade cartridge on control body.

### Recommended Maintenance (Class I shown)

- If the brake shoe becomes lodged inside the body mount, remove the brake shoe.
- Wipe off and lubricate the brake shoe o-ring with *Parker Super O-Lube*.





# DISASSEMBLY AND MAINTENANCE PROCEDURES

## Dovetail Assembly

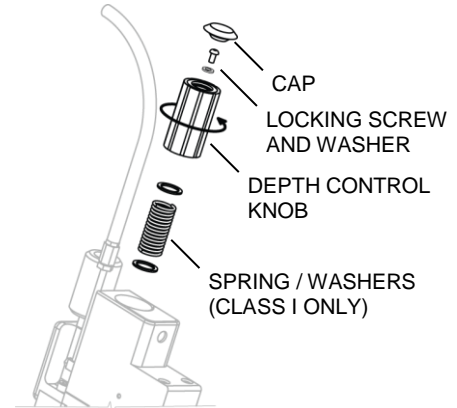
(Knifeholder sizes vary; Class I is shown here for example.)

### Recommended Tools

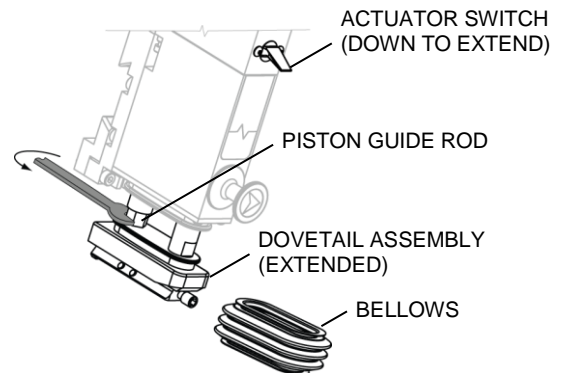
- 2 or 2.5mm hex wrench
  - Small flat blade screwdriver
  - Small needlenose pliers
  - External air supply to extend knifeholder
  - Class I ..... 10 mm thin open end wrench
  - Class II ..... 16 mm thin open end wrench
  - Class III ..... 26 mm thin open end wrench
- } or thin slip-joint pliers

### Disassemble the Dovetail Assembly

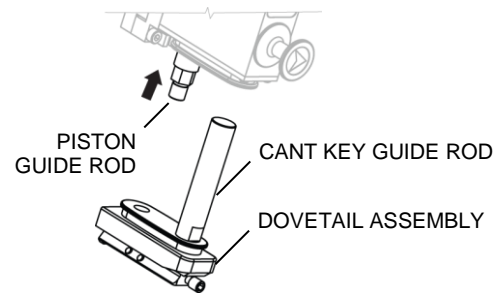
1. Disconnect air supply hose at the manifold.
2. Remove knifeholder from guide bar.
3. Remove blade cartridge from control body.
4. Remove depth control knob cap from control body.
5. Remove the locking cap screw and washer from inside the depth control knob.
6. Remove depth control knob by hand, rotating counterclockwise.
7. Class I: Remove the depth control spring and two flat washers; go to Step 8.  
Class II / III: Spring not accessible; go to Step 8.



8. Extend the knifeholder:  
Class I: No air supply needed. By hand, pull the dovetail assembly out of the control body.  
Class II / III: With external air supply set at approximately 30 psi (2.1 bar), toggle the actuator switch to extend the dovetail assembly.
9. Lift or remove the bellows to expose the piston guide rod.
10. With the dovetail assembly extended, place an open-end wrench over the flats of the piston guide rod and turn counterclockwise to loosen it completely from the dovetail.  
**Note:** It is not necessary to remove the cant key guide rod from the dovetail assembly.



11. Retract the piston guide rod after dovetail assembly removal is complete:  
Class I: Push piston guide rod by hand.  
Class II / III: Toggle the actuator switch up to retract.



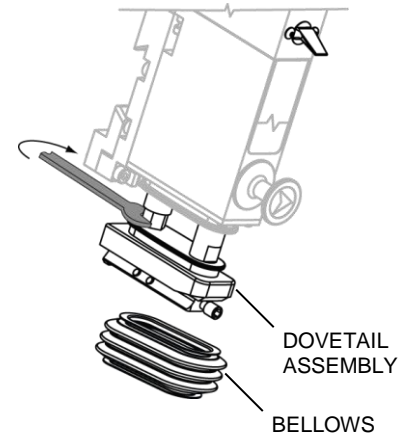
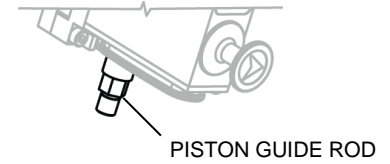
# DISASSEMBLY AND MAINTENANCE PROCEDURES

## To Reassemble Dovetail Assembly

### Class I, II and III

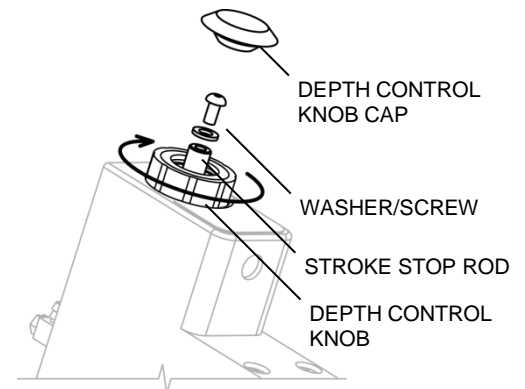
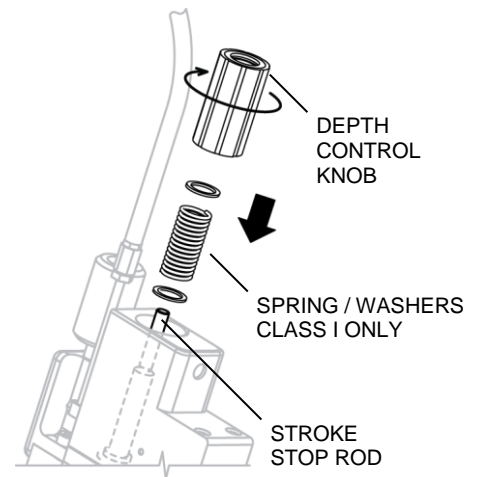
1. Extend the piston guide rod.  
Class I: No air supply needed. By hand, pull the piston guide rod down.  
Class II and III: Set knifeholder air supply to approximately 30 psi (2.1 bar) and toggle the actuator switch down to extend the piston guide rod.
2. Apply *LOCTITE 242* to the threads of the piston guide rod.
3. Fasten the dovetail assembly to the extended piston guide rod and torque as follows:

Class I	12 ft·lbs (16.3 Nm)
Class II	35 ft·lbs (47.4 Nm)
Class III	70 ft·lbs (94.9 Nm)
4. Replace the bellows.



5. Class I: Push the dovetail assembly up into the lower body to expose the piston guide rod at the upper body.  
Class II: Toggle the actuator switch up to lift the piston and expose the stroke stop rod.
6. Reinstall the flat washers, return spring (Class I only) and the depth control knob.
7. Rotate the depth control knob clockwise far enough to allow the flat washer and socket head cap screw to lock against the stroke stop rod, capturing the depth control knob. Torque the cap screw:

Class I	0.75 ft·lbs (1.0 Nm)
Class II and III	1.0 ft·lbs (1.4 Nm)
8. Reinstall the depth control knob cap.
9. For knifeholders using pneumatic locks, reinstall the guide bar mount assembly (p. 35).
10. Reinstall blade cartridge (p. 25).
11. Attach the upper and lower air hose assemblies.
12. Verify blade cartridge half and full stroke functionality before reinstalling the unit for operation.



## Upper Body and Piston Assemblies – Class I

Complete parts illustration: Class I, page 44

### Recommended Tools

- Class I ..... 2.5 mm hex wrench
- *Parker Super O-Lube*
- *Lubriplate EMB Polymer Grease (L0148-098)*

The piston assembly is made up of the piston, piston o-ring, piston guide rod, and the stroke stop rod. **Do not attempt further disassembly of these parts.**

### Disassembly

1. Disconnect air supply hose at the manifold.
2. Remove control body from guide bar.
3. Remove blade cartridge from control body.
4. Remove dovetail assembly (p. 36).
5. Remove guide bar mount assembly:
  - a. with pneumatic lock.....p. 35
  - b. with manual lock ....removal not required
6. Remove two long and two short socket head cap screws to remove the upper body assembly from the lower body.
7. Remove the piston assembly from the top side of the lower body assembly.

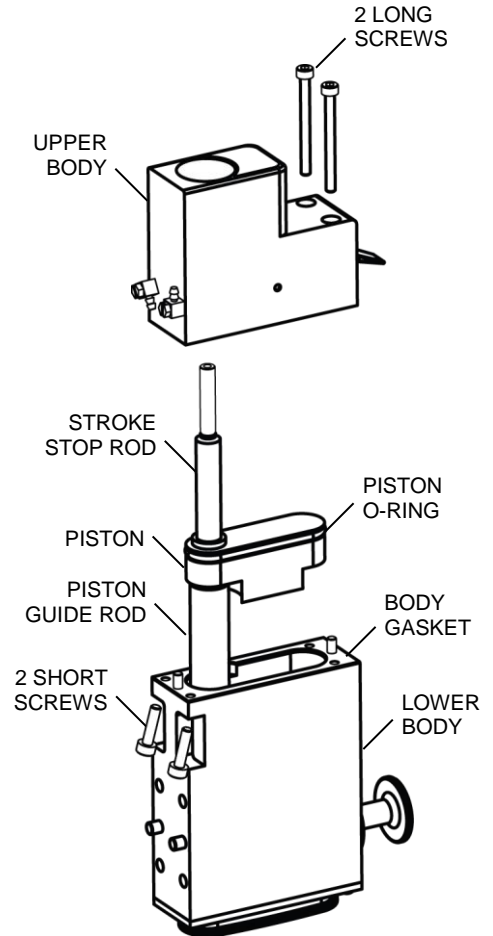
Disassembly is complete.

### Recommended Maintenance

- Inspect and replace the piston o-ring if cracked or worn.
- Lubricate stroke stop rod and piston o-ring with *Parker Super O-Lube*.
- Lubricate piston guide rod with *Lubriplate EMB Polymer Grease (L0148-098)*.

### Reassemble Upper Body and Piston Assemblies

1. Make sure the body gasket is in place on the lower body.
2. Carefully insert the piston assembly into the lower body.
3. Secure the upper body to the lower body with two long and two short socket head cap screws and torque to 1 ft·lb (1.35 Nm).
4. Reinstall the dovetail assembly (p. 37).



# DISASSEMBLY AND MAINTENANCE PROCEDURES

## Lower Body Assembly – Class I

Complete parts illustration: Class I, page 44

### Recommended Tools

- Class I ..... 2 mm hex wrench
- *Lubriplate EMB Polymer Grease (L0148-098)*

### Disassembly Class I

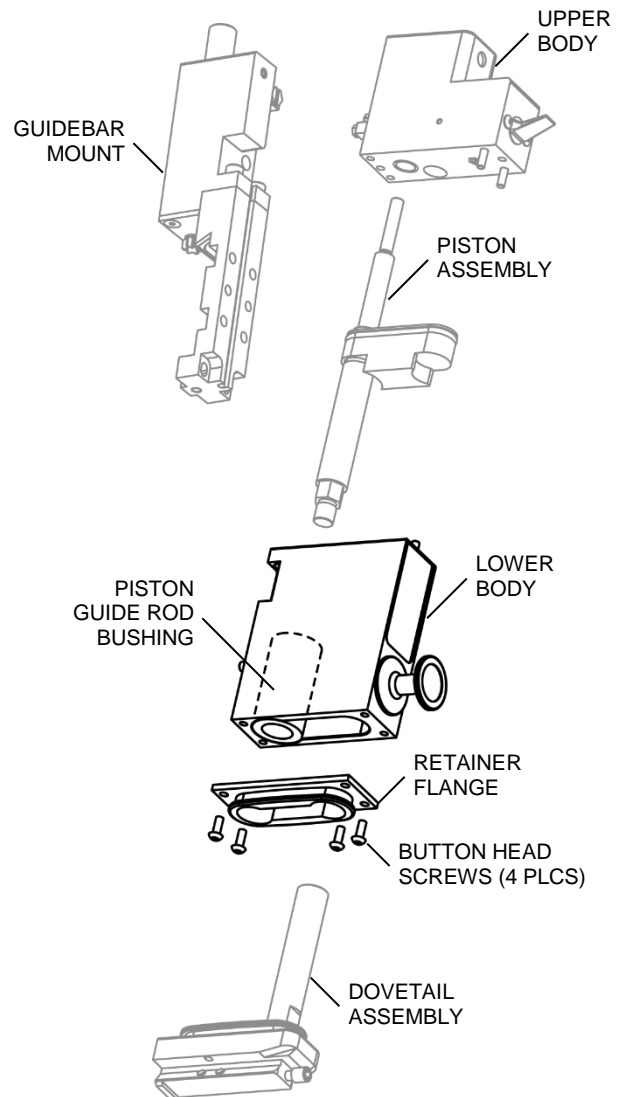
1. Disconnect air supply hose at the manifold.
2. Remove knifeholder from guide bar (p. 31).
3. Remove blade cartridge from control body (p. 25).
4. Remove dovetail assembly (p. 36).
5. Remove guide bar mount with pneumatic lock assembly (p. 35).
6. Remove upper body and piston assemblies (p. 38).
7. Loosen four button head screws.
8. Remove the retainer flange.
9. Remove piston guide rod bushing **only if** replacement is necessary.

**Note:** The piston guide rod bushing is ceramic coated and will provide years of service under normal operating conditions.

Lower body disassembly is complete.

### Recommended Maintenance

- Lubricate piston guide rod bushing with *Lubriplate EMB Polymer Grease (L0148-098)*.



### To Reassemble Lower Body

1. Replace the piston guide rod bushing into the lower body and fasten the flange retainer in place with four button head screws.
2. Reassemble the upper and piston body assemblies (p. 38).
3. Reassemble the dovetail assembly (p. 37).
4. Reassemble the guide bar mount with pneumatic lock assembly (p. 35).
5. Reinstall the blade cartridge (p. 25).
6. Attach the upper and lower air hose assemblies.
7. Verify cartridge half and full stroke functionality before reinstalling the unit for operation.

# DISASSEMBLY AND MAINTENANCE PROCEDURES

## Upper Body, Lower Body and Piston Assemblies – Class II and III

Complete parts illustration: Class II and III, page 46

### Recommended Tools

- Class II ..... 3 mm hex wrench
- Class III ..... 4 mm hex wrench
- *Parker Super O-Lube*
- *Lubriplate EMB Polymer Grease (L0148-098)*

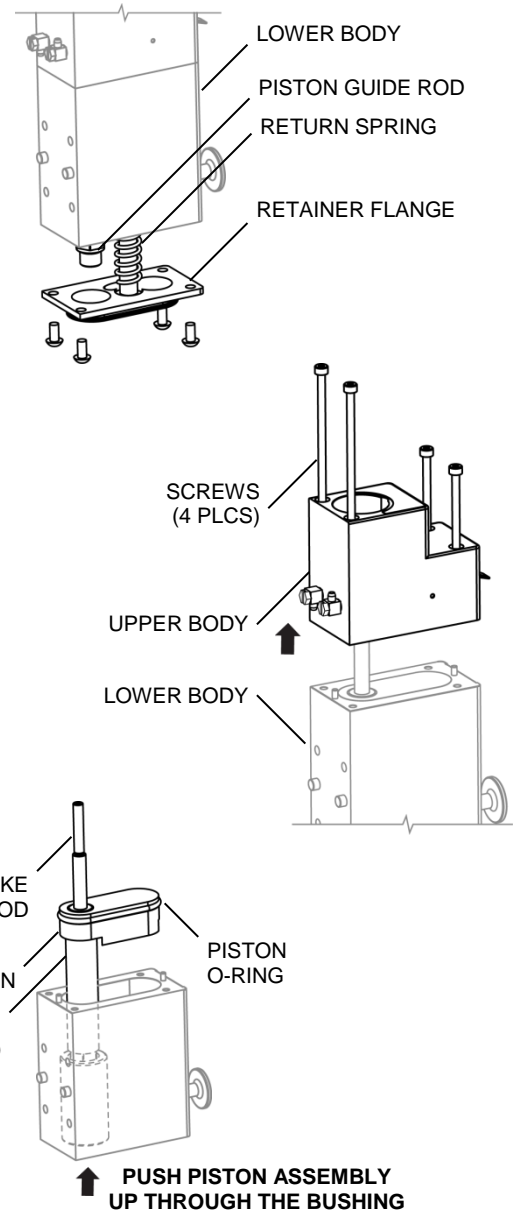
### Disassembly Class II and III

1. Disconnect air supply hose at the manifold.
2. Remove knifeholder from guide bar (p. 31).
3. Remove blade cartridge from control body.
4. Remove dovetail assembly (p. 36).
5. Remove guide bar mount assembly:  
with pneumatic lock ..... p. 35  
with manual lock... removal not required
6. Carefully remove the retainer flange and spring.  
**Caution!** The flange retainer is under spring pressure. Hold the flange retainer firmly to the lower body when removing the four button head fasteners.
7. Remove the four socket head cap screws that attach the upper and lower bodies to each other.
8. Remove the upper body assembly.
9. The Piston Assembly, made up of the piston, piston o-ring, stroke stop rod, and piston guide rod, may be removed next. **Do not attempt further disassembly of piston parts.**
10. Lay the lower body flat on one side and carefully push the piston guide rod up into and through the guide rod bushing.

Upper Body and Piston disassembly is complete.

### Recommended Maintenance

- Lubricate piston guide rod with *Lubriplate EMB Polymer Grease (L0148-098)*.
- Inspect and replace the piston o-ring if necessary.
- Lubricate stroke stop rod and piston o-ring with *Parker Super O-Lube*.
- Inspect piston spring and return spring support and replace if excessively worn.



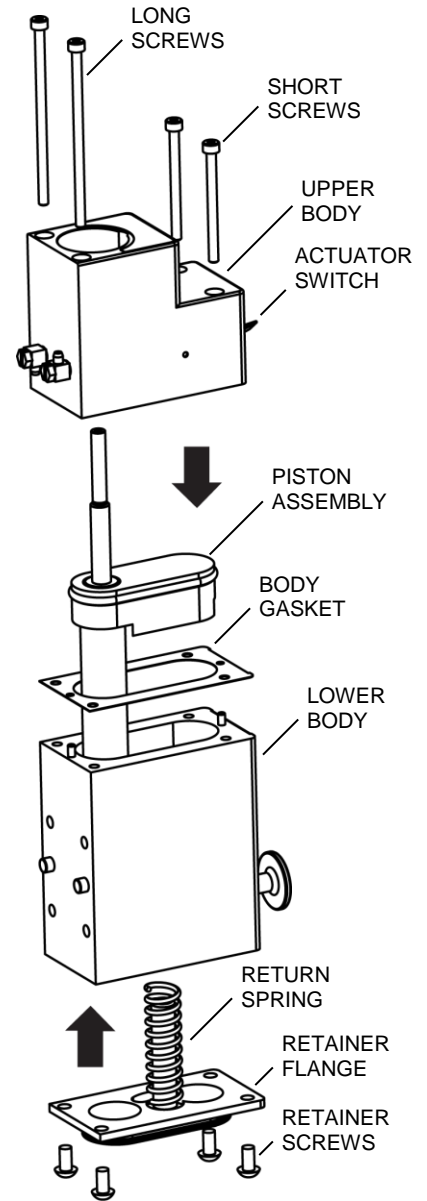


# DISASSEMBLY AND MAINTENANCE PROCEDURES

## To Reassemble Upper Body, Lower Body and Piston Assemblies

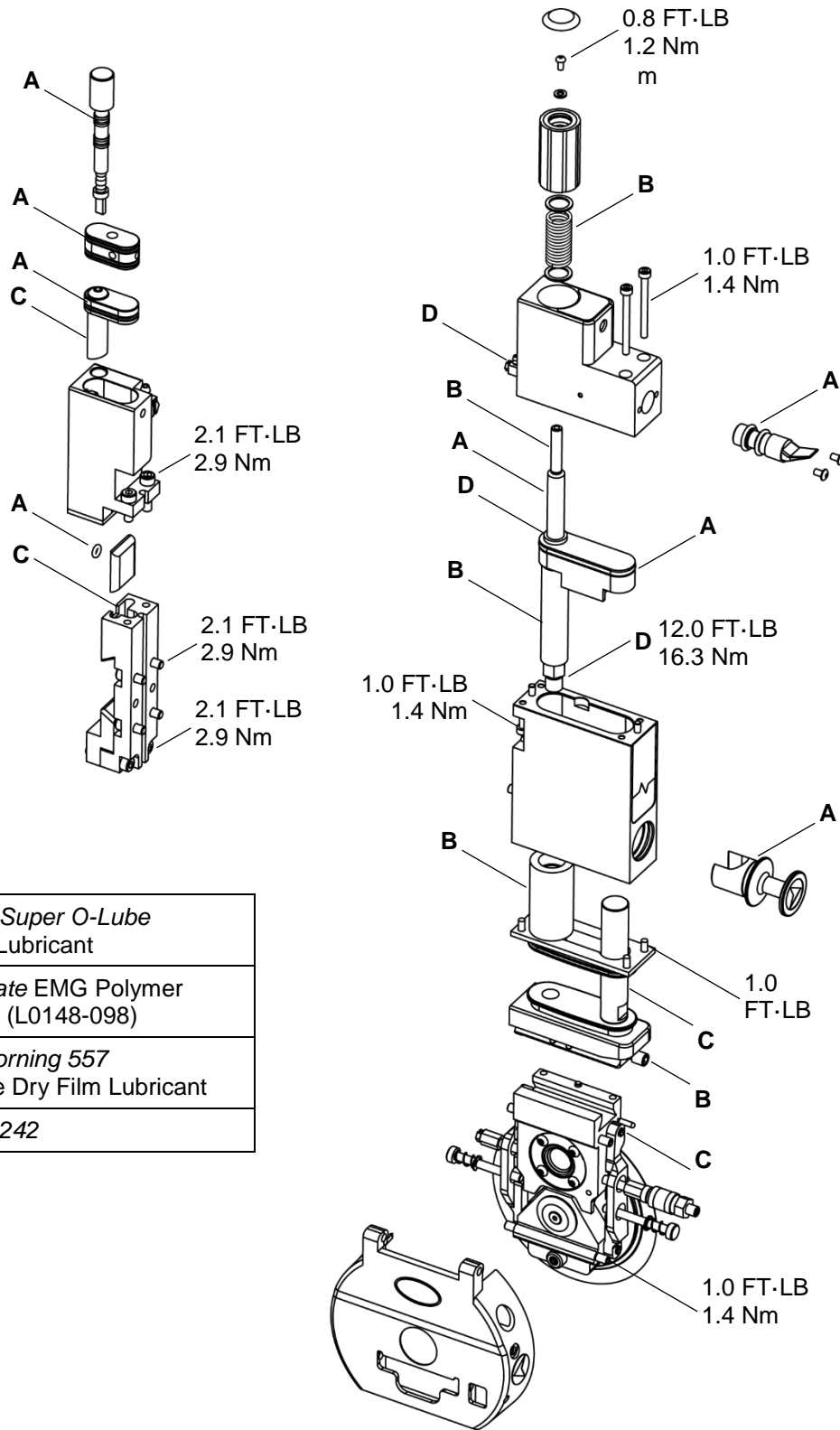
### Class II and III

1. Make sure the body gasket is in place on the lower body.
2. Carefully insert the upper body and piston assemblies into the lower body assembly from the top side.
3. Secure the upper body to the lower body with fasteners and tighten to the appropriate torque value:  
Class II ..... 2.1 ft·lb (2.85 Nm)  
Class III ..... 4.3 ft·lb (5.83 Nm)
4. With the return spring attached to the flange retainer, carefully and **firmly** press the flange retainer flush into the lower body and fasten with the retainer screws.
5. Apply and regulate air pressure to approximately 30 psi.
6. Extend the piston guide rod by toggling the actuator switch down.
7. Install the dovetail assembly. (See *Dovetail Reassembly*, p. 37.)



# LUBRICATION AND LOCTITE REFERENCE CHART

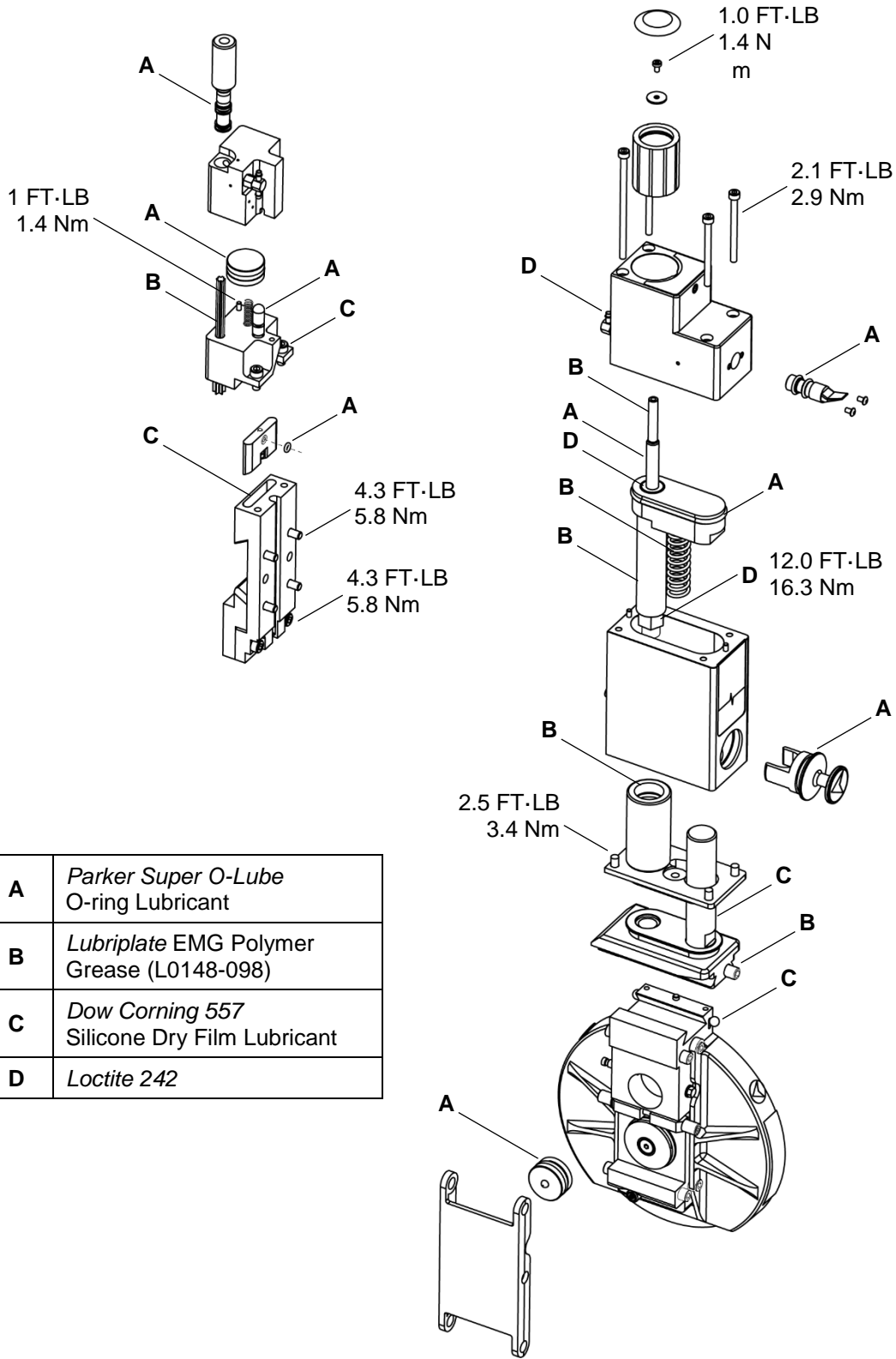
## Class I



<b>A</b>	<i>Parker Super O-Lube</i> O-ring Lubricant
<b>B</b>	<i>Lubriplate EMG Polymer</i> Grease (L0148-098)
<b>C</b>	<i>Dow Corning 557</i> Silicone Dry Film Lubricant
<b>D</b>	<i>Loctite 242</i>

# LUBRICATION AND LOCTITE REFERENCE CHART

## Class II and III

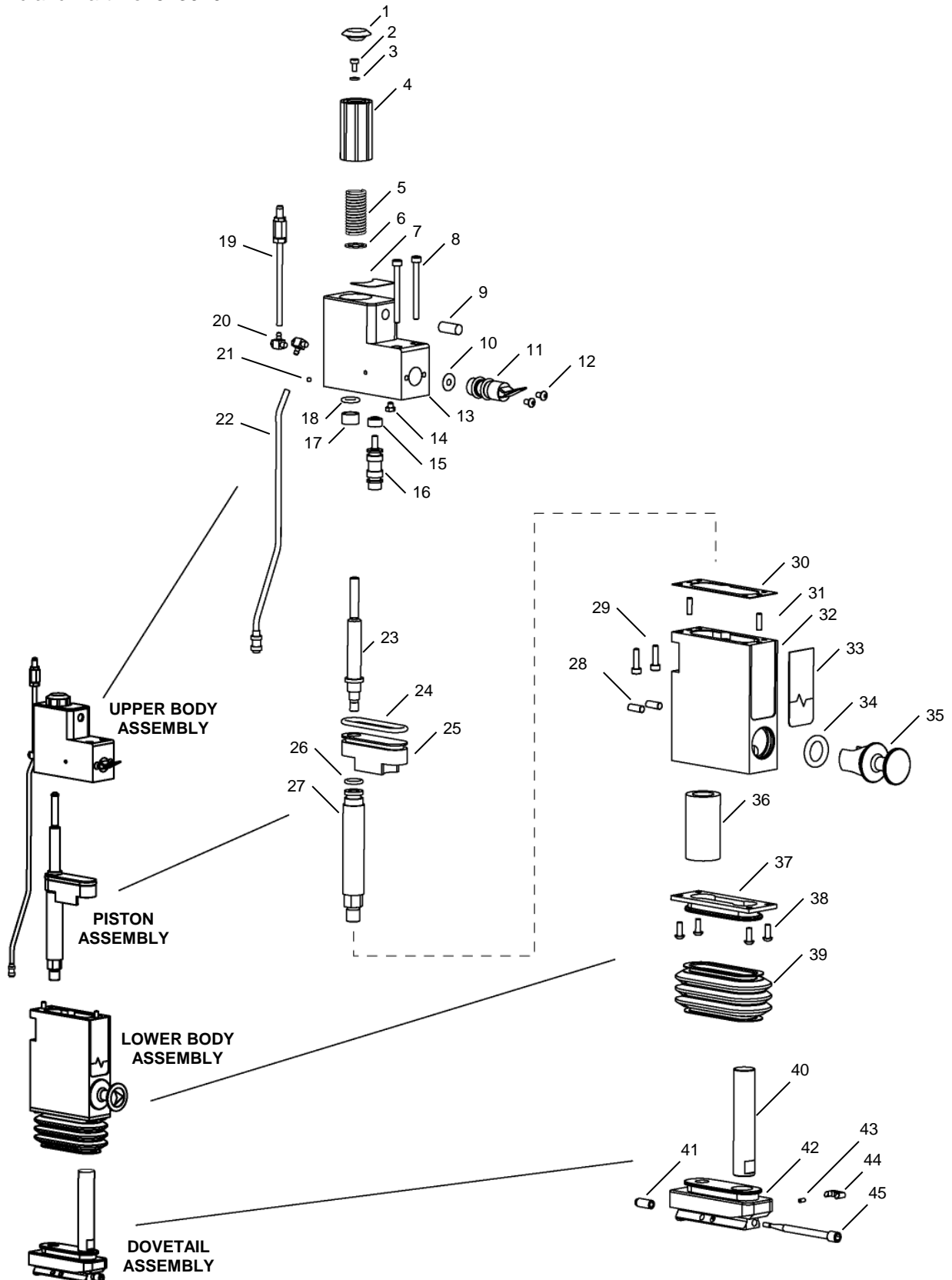


<b>A</b>	<i>Parker Super O-Lube</i> O-ring Lubricant
<b>B</b>	<i>Lubriplate EMG Polymer</i> Grease (L0148-098)
<b>C</b>	<i>Dow Corning 557</i> Silicone Dry Film Lubricant
<b>D</b>	<i>Loctite 242</i>

# KNIFEHOLDER PARTS

## Manual Control Body – Class I

Tidland Part No. 543919



# KNIFEHOLDER PARTS

## Manual Control Body – Class I

Tidland Part No. 543919

Item	Description	Part No.
	<b>Upper Body Assembly</b>	
1	Depth Control Knob Cap	536161
2	Socket Head Capscrew	536165
3	Flat Washer	536169
4	Depth Control Knob Assy	535334
5	Depth Control Spring	537767
6	Flat Washer	525004
7	Depth Control Label	548612
8	Socket Head Capscrew	536168
9	Detent, Ball	528781
10	Washer, Spring	560820
11	Air Valve w/ Switch (Actuator)	560848
12	Button Head Capscrew	530187
13	Upper Body	543784
14	Setscrew, Orifice Plug	543822
15	Valve Cap	524979
16	3-way Valve	528783
17	Stroke Stop Rod Bushing	524998
18	Valve O-ring	126119
19	Air Hose Assembly (Supply Air)	561042
20	Air Fitting	528697
21	Steel Ball	554256
22	Air Hose Assembly (Cartridge)	568817
	<b>Piston Assembly *</b>	
23*	Stroke Stop Rod	534810
24*	Piston O-ring	536164
25*	Piston	543666
26*	Piston Guide Rod O-ring	126119
27*	Piston Guide Rod	560523
	<b>Lower Body Assembly</b>	
28	Dowel Pin	545123
29	Socket Head Capscrew	133180
30	Gasket	524999
31	Dowel Pin	549542
32	Lower Body	524974
33	Label, Knifeholder Class	547733
34	Cant Key O-ring	126112
35	Cant Key	call
36	Piston Guide Rod Bushing	524977
37	Retainer Flange	524981
38	Button Head Capscrew	132371
39	Bellows	535074
	<b>Dovetail Assembly</b>	
40	Cant Key Guide Rod	560495
41	Taper Lock Shaft Stop	550457
42	Dovetail	560703
43	Dovetail Spring	546940
44	Wedge Lock	546919
45	Taper Lock Shaft	546909

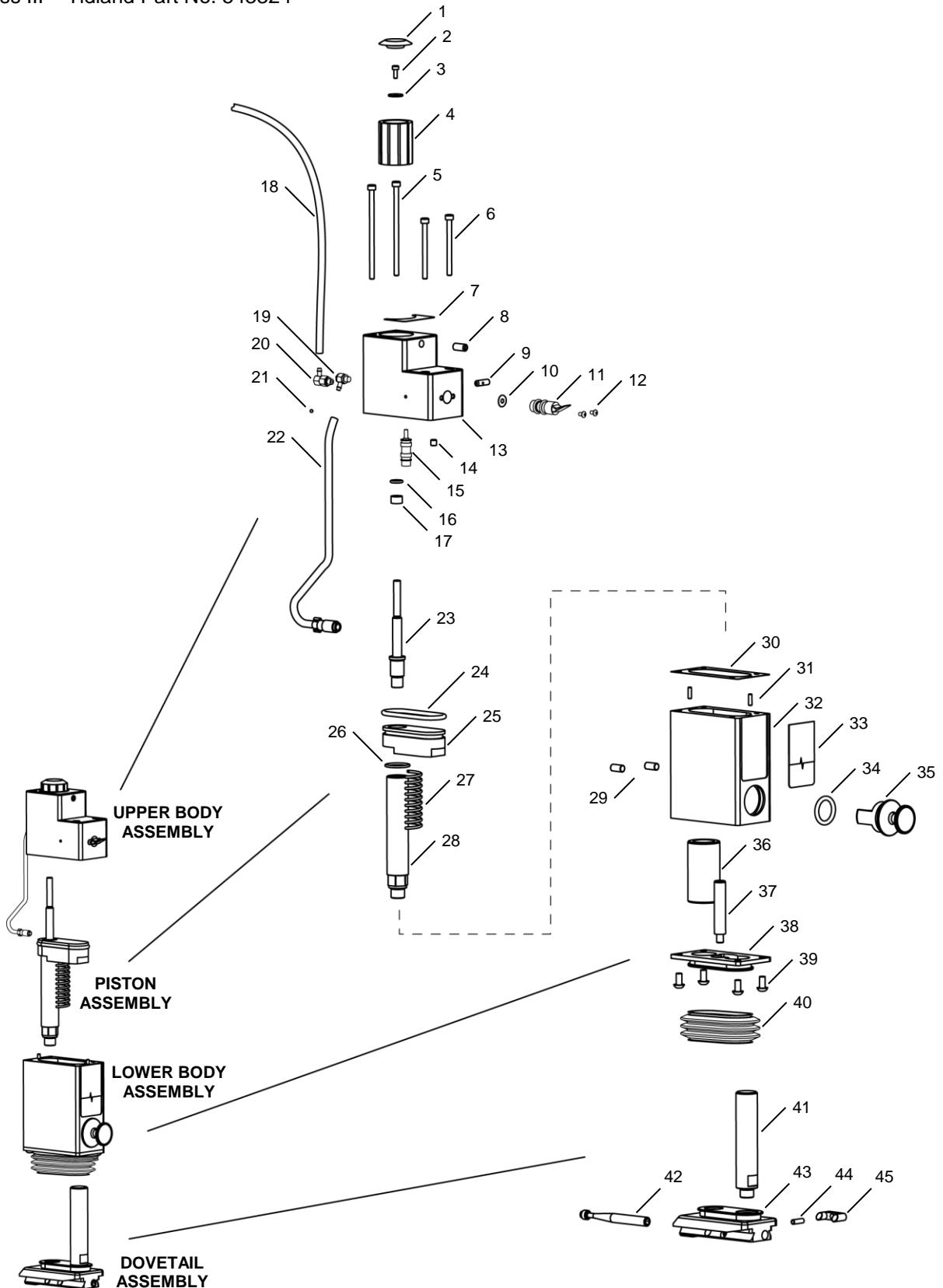
\* These parts supplied as an assembly only. Do not attempt further disassembly except to lubricate the piston o-ring.

# KNIFEHOLDER PARTS

## Manual Control Body – Class II and III

Class II – Tidland Part No. 535761

Class III – Tidland Part No. 543324



# KNIFEHOLDER PARTS

## Manual Control Body – Class II and III

Class II – Tidland Part No. 535761

Class III – Tidland Part No. 543324

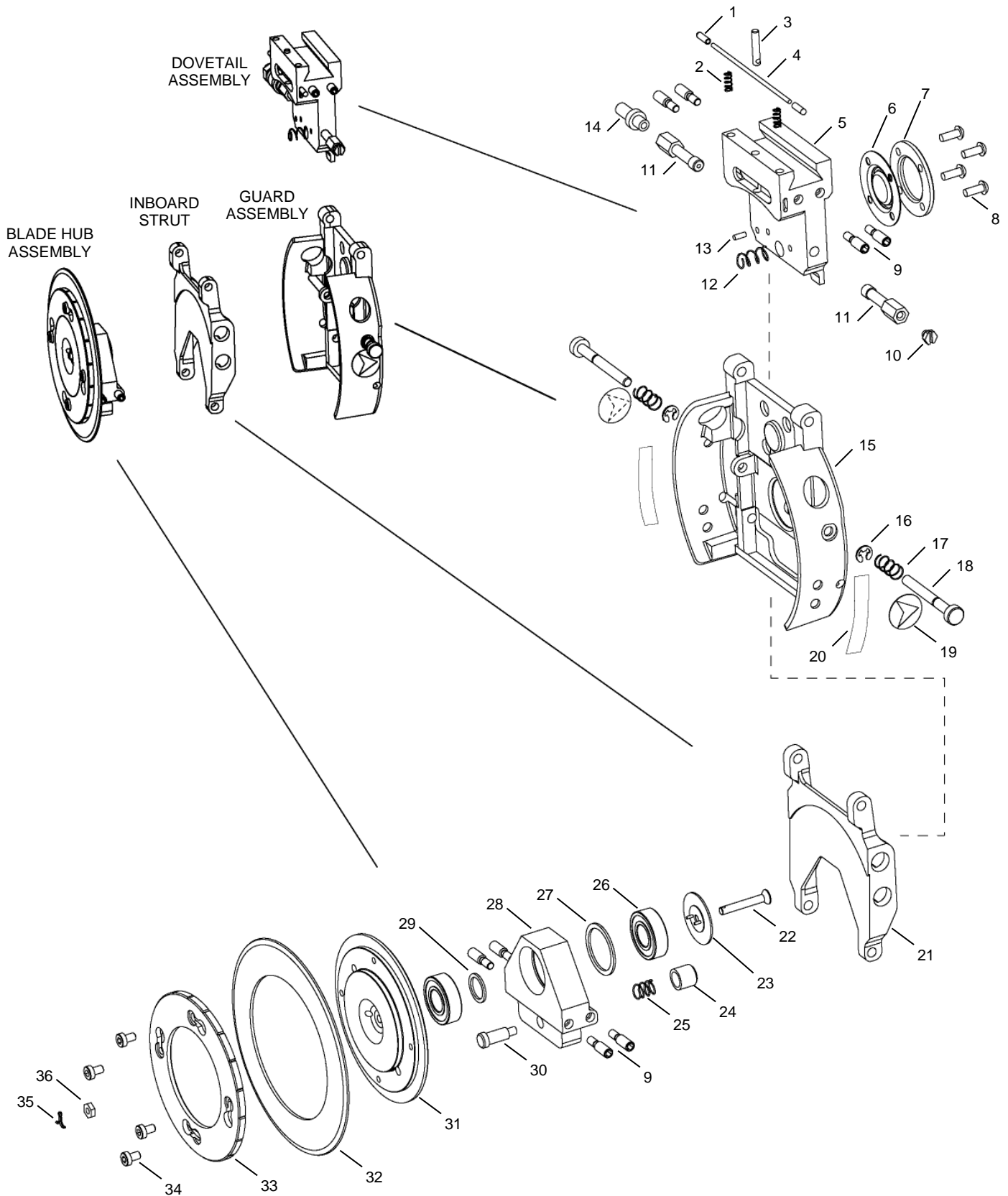
Item	Description	Part No.	
		Class II	Class III
	<b>Upper Body Assembly</b>		
1	Depth Control Knob Cap	530186	530186
2	Socket Head Cap Screw	130728	130728
3	Washer	535183	535183
4	Depth Control Knob	530536	530536
5	Socket Head Capscrew	531126	130144
6	Socket Head Capscrew	531127	551477
7	Depth Control Label	548629	548637
8	Detent Ball	528781	528781
9	Setscrew	557458	559785
10	Washer	560820	560820
11	Air Valve w/ Switch	560848	560848
12	Button Head Capscrew	530187	530187
13	Upper Body	543314	543328
14	Setscrew	544354	544354
15	3-way Valve	528783	528783
16	Valve O-ring	126119	126119
17	Stroke Stop Rod Bushing	524998	524998
18	Tubing	128898	128898
19	Air Fitting	610473	610473
20	Air Fitting	251535	251535
21	Steel Ball	554256	554256
22	Air Hose Assembly	561043	561043
	<b>Piston Assembly *</b>		
23*	Stroke Stop Rod	557519	557519
24	Piston O-ring	530352	536239
25*	Piston	557559	559610
26*	Piston Guide Rod O-ring	130186	536190
27*	Piston Return Spring	535146	535146
28*	Piston Guide Rod	557322	558948
	<b>Lower Body Assembly</b>		
29	Dowel Pin	544998	544998
30	Gasket	530715	528829
31	Dowel Pin	549542	549542
32	Lower Body	548837	548899
33	Lower Body Label	547567	547675
34	Cant Key O-ring	578331	578331
35	Cant Key	call	call
36	Piston Guide Bushing	528787	528943
37	Return Spring Support	533775	533775
38	Retainer Flange	530528	528817
39	Button Head Cap Screw	250580	130467
40	Bellows	528809	528827
	<b>Dovetail Assembly</b>		
41	Cant Key Guide Rod	557357	557357
42	Taper Lock Shaft	545855	545832
43	Dovetail	557423	559032
44	Dovetail Spring	545715	545715
45	Dovetail Wedge Lock	545577	545577

\* These parts supplied as an assembly only. Do not attempt further disassembly except to lube piston o-ring.

# KNIFEHOLDER PARTS

## Manual Swing Cartridge – Class I

Tidland Part No. 596429





# KNIFEHOLDER PARTS

## Manual Swing Cartridge – Class I

The Class I cartridge was redesigned in 2003 for improved durability. The previous design is no longer available as a complete assembly.

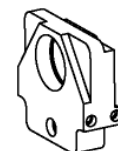
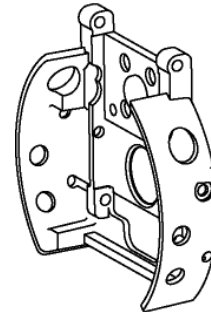
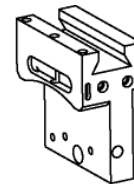
To **update** the previous design to the current design, you will need to order four new parts to use with your existing cartridge: dovetail block, blade guard, inboard strut and bearing housing. Use the (Current) part number listed below.

To **repair** the previous design, use the (Previous) part number listed below. These parts are available by special order only.

The two cartridge designs are interchangeable with the control body, if you prefer to order a complete new cartridge assembly. When ordering, please locate the part number on your cartridge assembly and have it ready when you call.

Item	Description	Cartridge Part No.	Cartridge Part No.
		596429 (Current)	551430 (Previous)
<b>Dovetail Assembly</b>			
1	Latch Pin Cap	528680	
2	Safety Lock Spring	131119	
3	Safety Lock Pin	528681	
4	Safety Latch Pin	528691	
5	<i>Dovetail Block</i>	<i>596438</i>	<i>551432</i>
6	Diaphragm	528677	
7	Diaphragm Plate	528678	
8	Button Head Capscrew	529354	
9	Strut Stud	545948	
10	Extension Plug	551702	
11	Extension	551693	
12	Return Spring	552070	
13	Setscrew	549830	
14	Plug, Q.D.	567945	
<b>Guard Assembly</b>			
15	<i>Blade Guard</i>	<i>596457</i>	<i>551691</i>
16	Snap Ring	555646	
17	Half Stroke Spring	559540	
18	Setup Button	551899	
19	Cartridge Arrow Label	547637	
20	Cartridge Warning Label	130923	
21	<i>Inboard Strut</i>	<i>596436</i>	<i>551692</i>
<b>Blade Hub Assembly</b>			
22	Flat Head Capscrew	528668	
23	Bearing Cap Assembly	528664	
24	Blade Lock Cap	133962	
25	Blade Lock Pin Spring	528672	
26	Ball Bearing	528663	
27	Bearing Spacer	528669	
28	<i>Bearing Housing</i>	<i>596437</i>	<i>528667</i>
29	Snap Ring	528675	
30	Blade Lock Pin	133963	
31	Blade Hub	528671	
32	Knife Blade	131937	
33	Blade Clamp	579833	
34	Socket Head Capscrew	635047	
35	Cotter Pin	528673	
36	Jamnut	528674	

Previous part designs shown below  
(special order only)

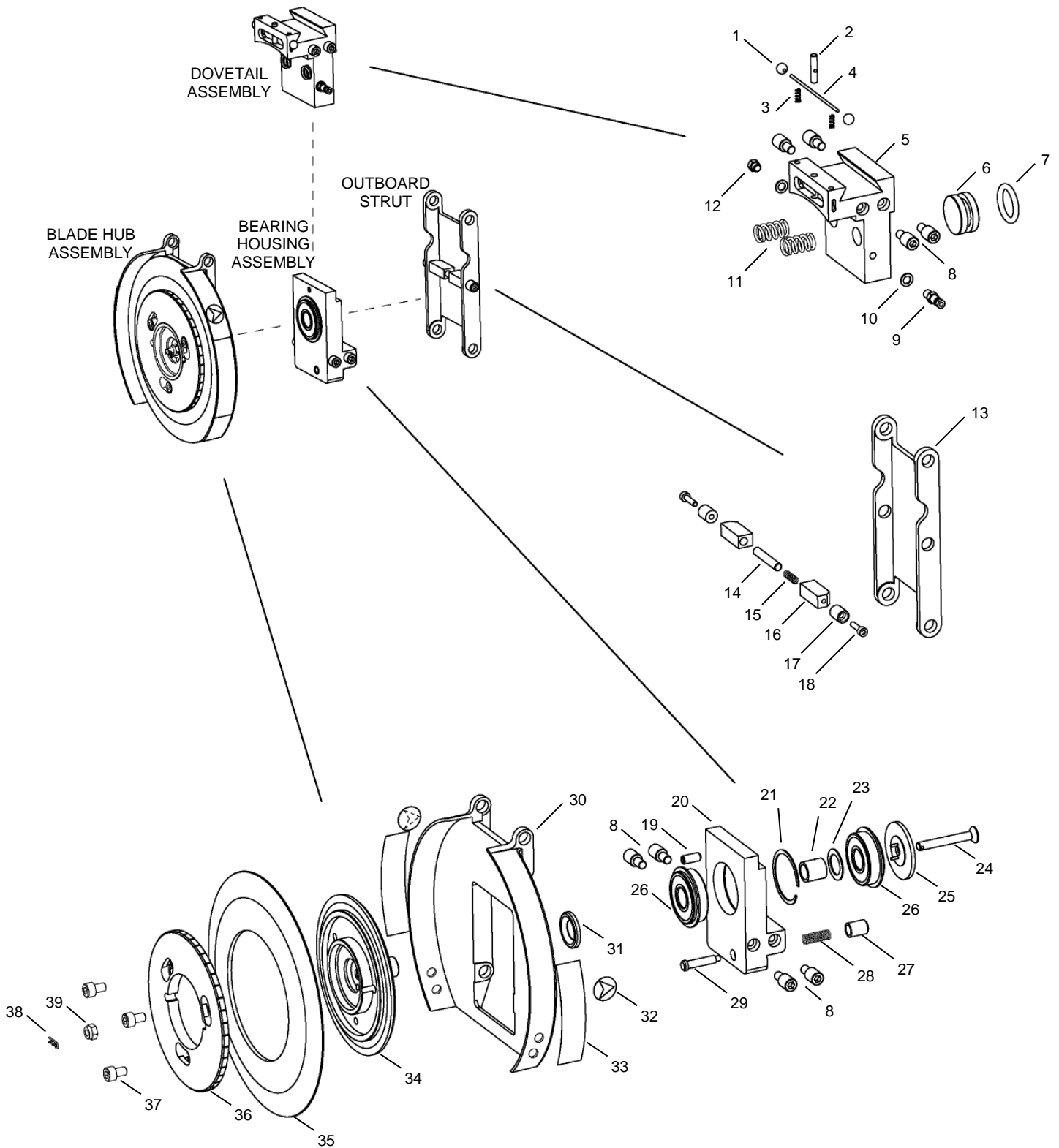


# KNIFEHOLDER PARTS

## Manual Swing Cartridge – Class II and III

Class II – Tidland Part No. 569393

Class III – Tidland Part No. 569394



# KNIFEHOLDER PARTS

## Manual Swing Cartridge – Class II and III

Class II – Tidland Part No. 569393

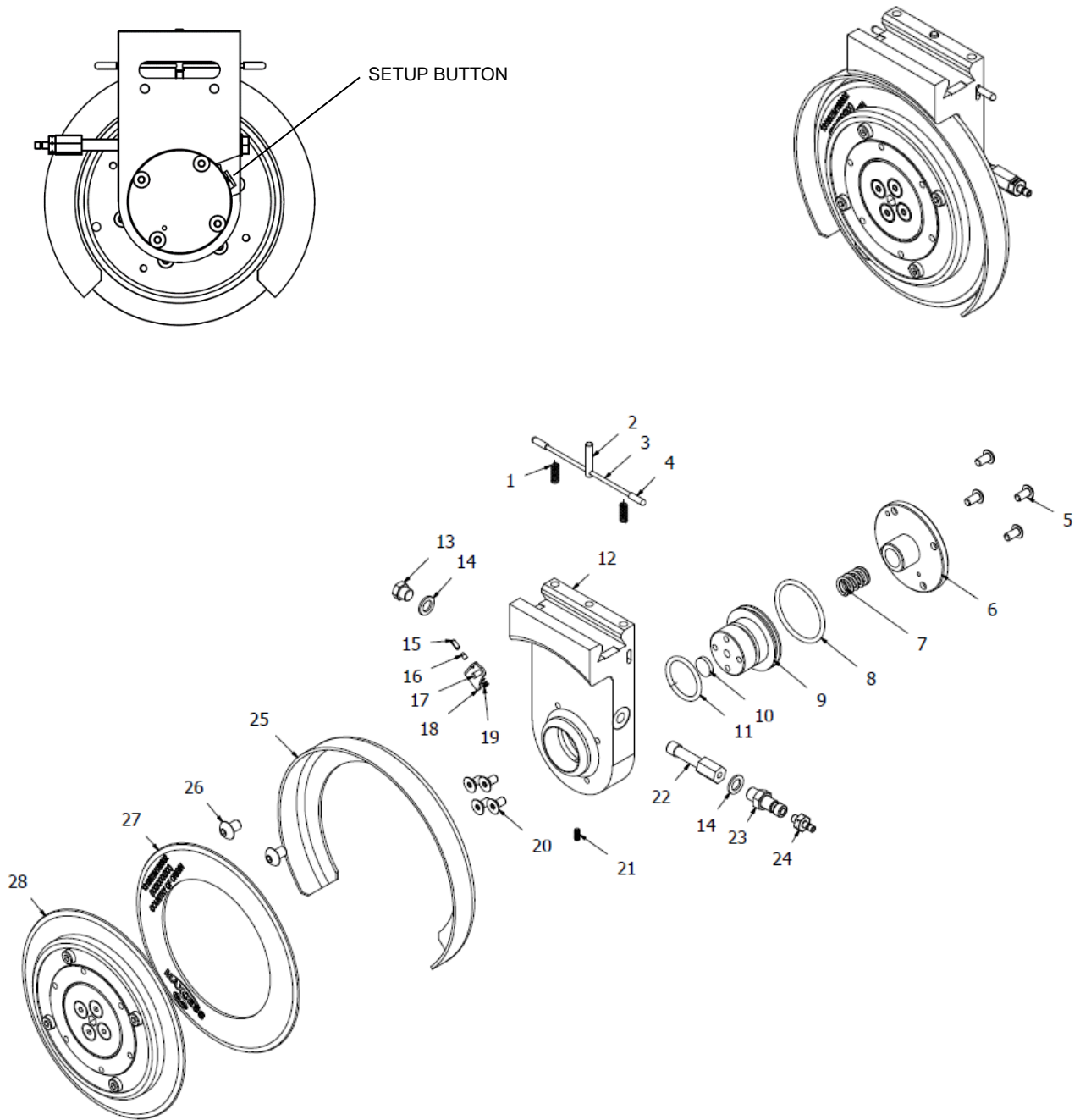
Class III – Tidland Part No. 569394

Item	Description	Part No.	
		Class II	Class III
	<b>Dovetail Assembly</b>		
1	Safety Latch Knob	131116	131116
2	Safety Lock Pin	131114	131114
3	Safety Lock Spring	131119	131119
4	Safety Latch Pin	131115	132891
5	Dovetail Block	570264	570282
6	Piston	131108	131108
7	O-ring, Piston	126479	126479
8	Strut Pivot Stud	535263	535263
9	Plug, Q.D.	130285	130285
10	Gasket	133720	133720
11	Return Spring	131118	131118
12	Air Inlet Plug	130185	130185
	<b>Outboard Strut</b>		
13	Strut, Outboard	570281	570283
14	Half Stroke Guide Pin	131110	131110
15	Half Stroke Spring	510105	510105
16	Half Stroke Stop	131112	132894
17	Setup Button	131111	131111
18	Socket Head Capscrew	133180	133180
	<b>Bearing Housing Assembly</b>		
19	Set Screw	133201	133084
20	Bearing Housing	524542	536837
21	Snap Ring	134305	134305
22	Bearing Spacer	n/a	133184
23	Shim Spacer	134304	134304
24	Flat Head Capscrew	524549	518520
25	Bearing Cap Assembly	515511	515511
26	Ball Bearing	131121	131121
27	Blade Lock Pin Cap	130173	130173
28	Blade Lock Pin Spring	130179	130179
29	Blade Lock Pin	130172	130172
	<b>Blade Hub Assembly</b>		
30	Blade Guard Strut	528098	536838
31	Shoulder Ring	631251	631251
32	Label, Cartridge	547637	547637
33	Label, Warning	130921	130920
34	Blade Hub	524544	135009
35	Knife Blade*	128401	129833
36	Blade Clamp	524543	135010
37	Soc Hd Capscrew	549838	130168
38	Cotter Pin	133710	133710
39	Locknut, M5	133235	133235

# KNIFEHOLDER PARTS

## Manual High Side Force Cartridge – Class I

Class I – Tidland Part No. 270039388



## KNIFEHOLDER PARTS

### Manual High Side Force Cartridge – Class I

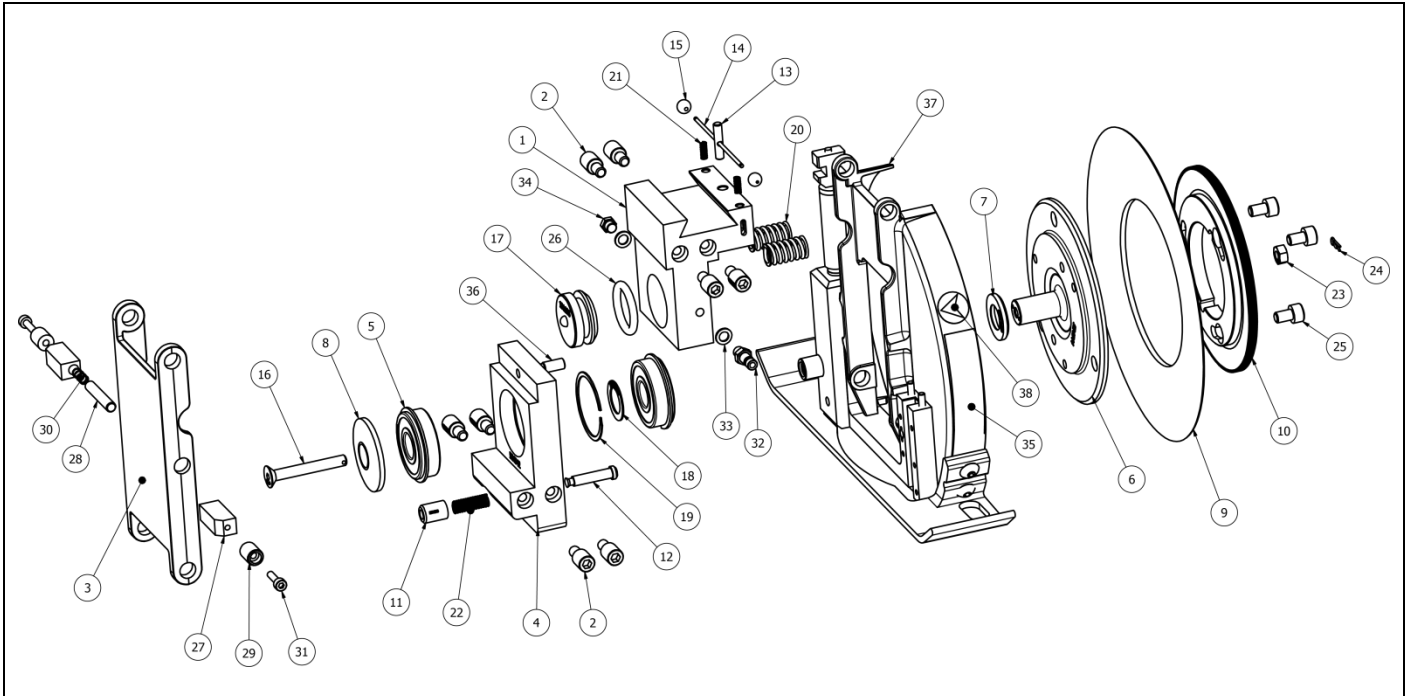
Class I – Tidland Part No. 270039388

Item	Description	Part No.
1	Safety Lock Spring	131119
2	Safety Lock Pin	528681
3	Safety Latch Pin	528691
4	Safety Latch Pin Cap	528680
5	Button Head Capscrew	130740
6	Bearing End Cap	130720
7	Side Shift Spring	270040174
8	O-Ring	130726
9	Lower Body Piston	130719
10	Dust Filter	132654
11	O-Ring	130727
12	Blade Strut	270039389
13	Air Inlet Plug	130185
14	Gasket	133720
15	Spring Centering Pin	130724
16	Set Stop Pivot Pin	130722
17	Set Stop	130721
18	Set Stop Spring	130723
19	Flat Head Capscrew	132270
20	Set Screw	130742
21	Extension	551693
22	Plug, QD	130285
23	Plug, QD	567945
24	Blade Guard	133863
25	Button Head Capscrew	131159
26	Knife Blade	131937
27	Blade Hub Assembly	130731

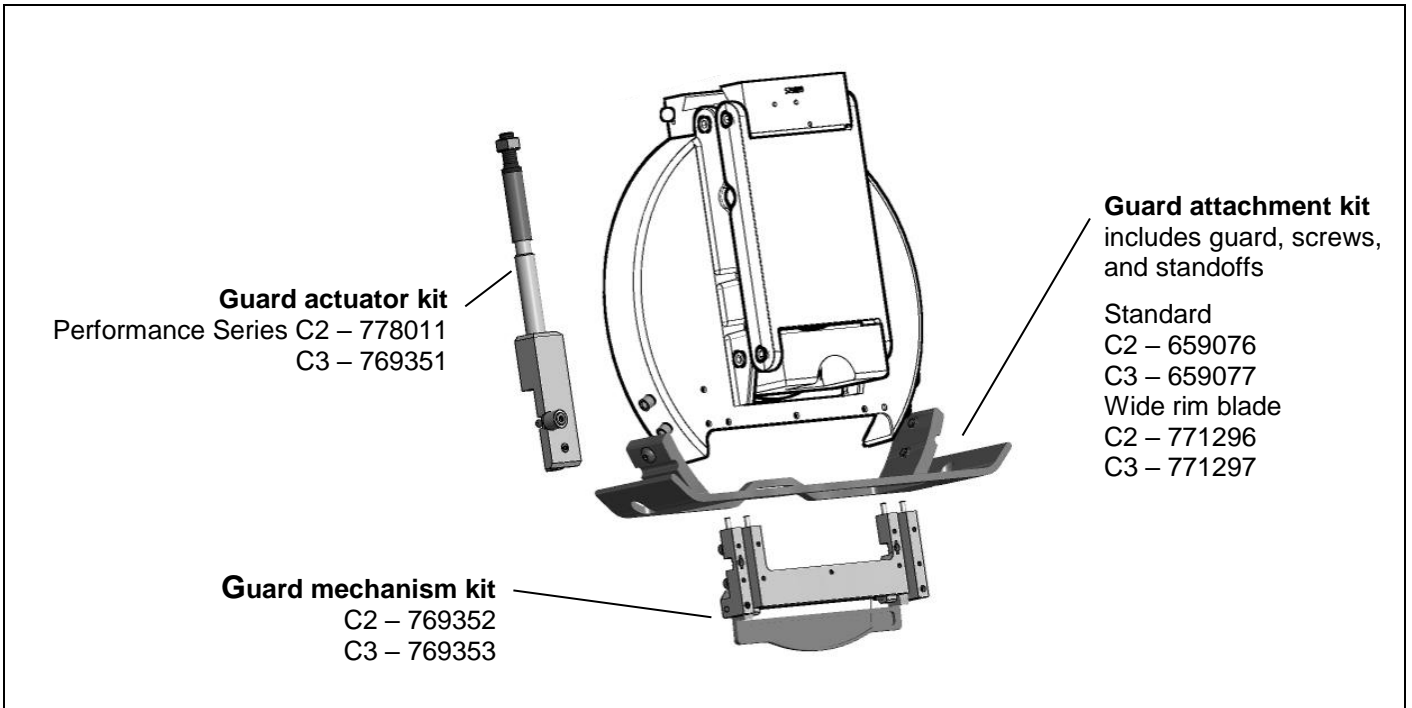
# KNIFEHOLDER PARTS

## 360° Blade Guard – Mechanical

Class II - Tidland Part No. 769816  
 Class III – Tidland Part No. 769817



Item 37 is a sub-assembly that contains the following replaceable parts:



# KNIFEHOLDER PARTS

## 360° Blade Guard – Mechanical

Class II - Tidland Part No. 769816

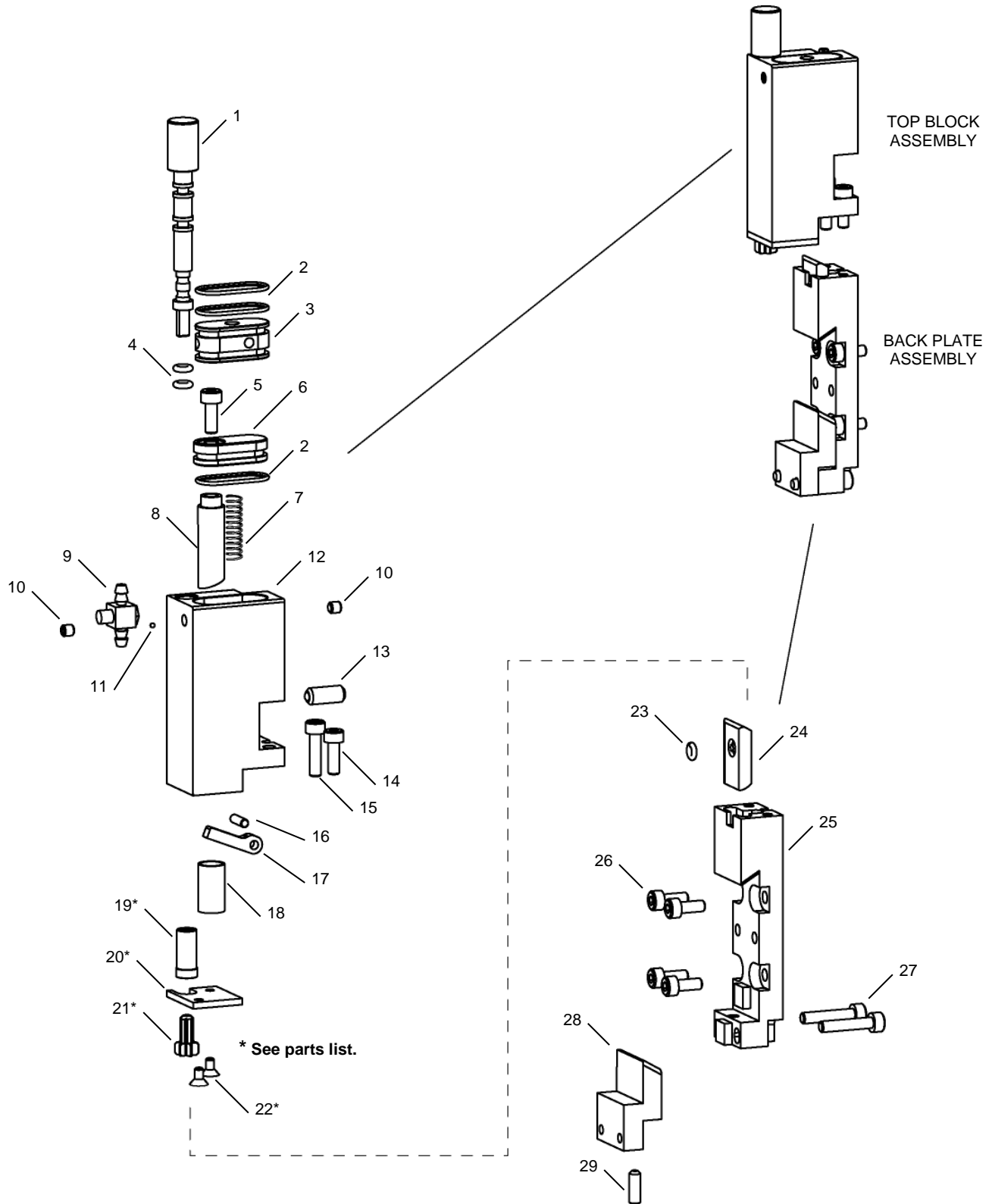
Class III – Tidland Part No. 769817

ITEM	DESCRIPTION	CLASS II	CLASS III
1	DOVETAIL-FEMALE CL2 PS MANUAL SHEAR	570264	570282
2	CLASS 2/3 PIVOT PIN STUD	535263	535263
3	CLASS 2 OUTBOARD STRUT	570281	570283
4	CLASS 2 BEARING HOUSING	524542	536837
5	BEARING	131121	131121
6	CLASS 2 BLADE HUB	524544	135009
7	CLASS 2/3 SHOULDER RING BLADE HUB	631251	631251
8	BEARING CAP ASSY	515511	515511
9	CLASS 2 KNIFE BLADE D-2	128401	129833
10	CLASS 2 BLADE CLAMP	524543	135010
11	CLASS 2/3 BLADE LOCK PIN CAP	130173	130173
12	CLASS 2/3 BLADE LOCK PIN	130172	130172
13	CLASS 2/3 SAFETY LOCK PIN	131114	131114
14	CLASS 2 SAFETY LATCH PIN	131115	132891
15	CLASS 2/3 SAFETY LATCH KNOB	131116	131116
16	FLAT HEAD CAPSCREW - BEARING RETAINER	524549	518520
17	CLASS 2/3 PISTON	131108	131108
18	SHIM WASHER 3/4 OD x 1/2 ID x .025"	134304	134304
19	SNAP RING	134305	134305
20	CLASS 2/3 RETURN SPRING	131118	131118
21	CLASS 2/3 SAFETY LOCK SPRING	131119	131119
22	CLASS 2/3 BLADE LOCK PIN SPRING	130179	130179
23	LOCK NUT M5 x 0.8 PREVAILING TORQUE HEX	133235	133235
24	HAIR PIN WESTERN WIRE PRODUCTS #226-P	133710	133710
25	SOC HD CPSCR M5 x 0.8 x 8mm ZINC PLATE	549838	130168
26	O-RING PARKER #2-210	126479	126479
27	HALF STROKE STOP C2 SWING CTG	131112	132894
28	HALF STROKE GUIDE PIN	131110	131110
29	HALF STROKE BUTTON	131111	131111
30	COMPRESSION SPRING CLASS 3 SWING	510105	510105
31	SOC HD CPSCR M3 x 0.5 x 12mm ZINC PLATE	133180	133180
32	QD PLUG RECTUS	130285	130285
33	WASHER, FLAT NYLON .187 ID X .312 OD X .031 THK	133720	133720
34	PLUG	130185	130185
35	WARNING LABEL - CL2	130921	130920
36	SET SCR M5 X 0.8 X 12mm LG DOG PT NYLOC	133201	133201
37	BLADE GUARD, 360 DEGREE, SUB-ASSY	778141	749589
38	LABEL, CANT/CARTRIDGE ARROW	547635	547635
39	BEARING SPACER	n/a	133184

# KNIFEHOLDER PARTS

## Guide Bar Mount with Pneumatic Lock – Class I

Tidland Part No. 550306





# KNIFEHOLDER PARTS

## Guide Bar Mount with Pneumatic Lock – Class I

Tidland Part No. 550306

Item	Description	Part No.
	<b>Top Block Assembly</b>	<b>55539</b>
1	Traverse Knob	550314
2	Piston O-ring	130186
3	Piston Cap	550310
4	Traverse Knob O-ring	550319
5	Socket Head Capscrew	542945
6	Piston	550316
7	Piston Spring	554681
8	Piston Rod	550317
9	Air Fitting	550731
10	Setscrew	130147
11	Steel Ball	539093
12	Top Block	550309
13	Detent Ball	528781
14	Socket Head Capscrew	130145
15	Socket Head Capscrew	132619
16	Roll Pin	549542
17	Lever	550315
18	Bronze Bushing	557189
	<b>Traverse Gear Assembly</b>	<b>550307</b>
* 19	Gear Adapter	557216
* 20	Traverse Plate	550312
* 21	Traverse Pinion Shaft	550311
* 22	Flat Head Capscrew	130745
	<b>Back Plate Assembly</b>	<b>550708</b>
23	Brake Shoe O-ring	130136
24	Brake Shoe	537972
25	Mounting Plate	537970
26	Socket Head Capscrew	130184
27	Socket Head Capscrew	250048
28	Gib	537974
29	Setscrew	130149

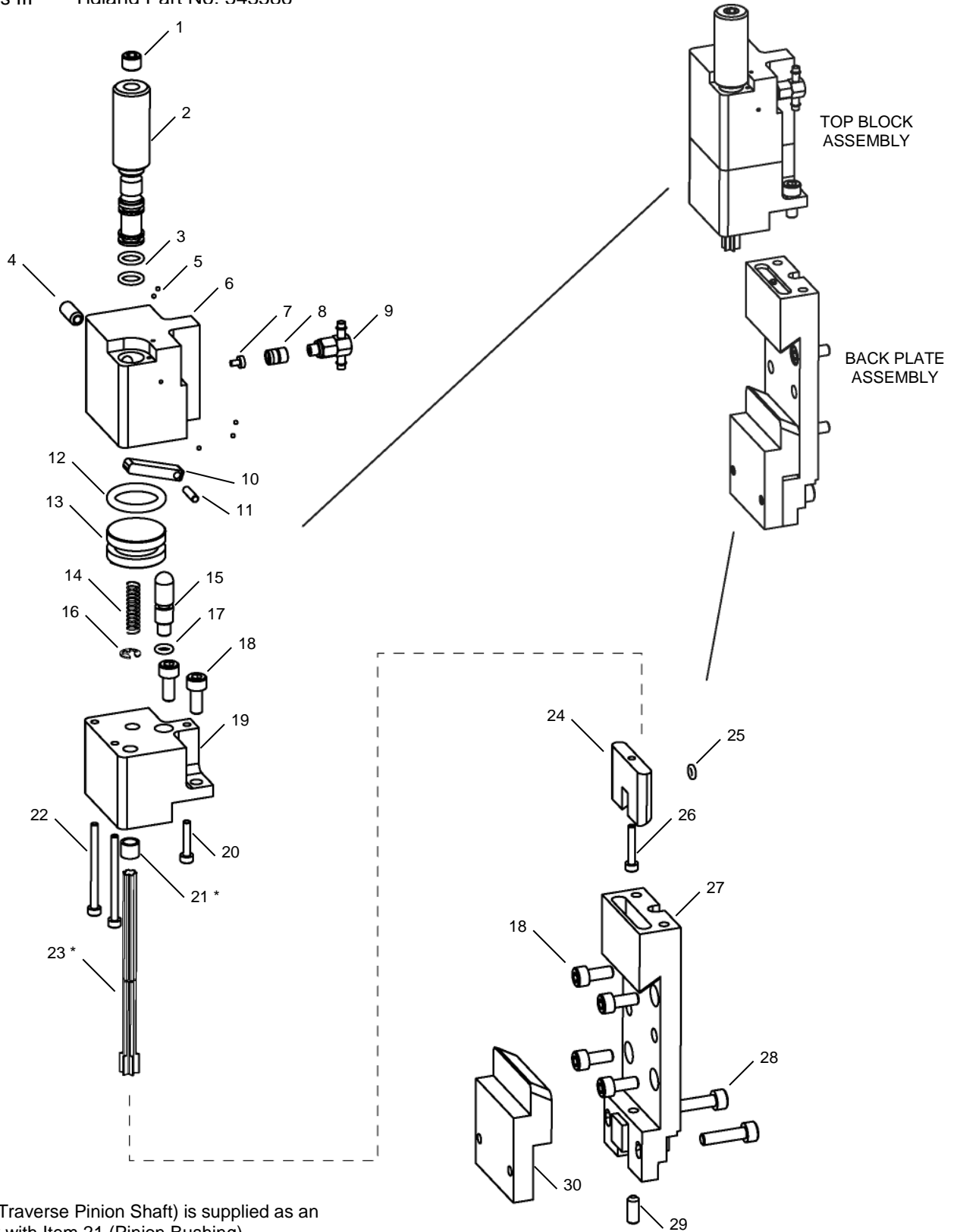
\* These parts are supplied only as an assembly.  
Do not attempt further disassembly.

# KNIFEHOLDER PARTS

## Guide Bar Mount with Pneumatic Lock – Class II and III

Class II – Tidland Part No. 531756

Class III – Tidland Part No. 543586



\* Item 23 (Traverse Pinion Shaft) is supplied as an assembly with Item 21 (Pinion Bushing)  
 Items 16, 21, and 23 are not required for Easy Glider mounts.

# KNIFEHOLDER PARTS

## Guide Bar Mount with Pneumatic Lock – Class II and III

Class II – Tidland Part No. 531756

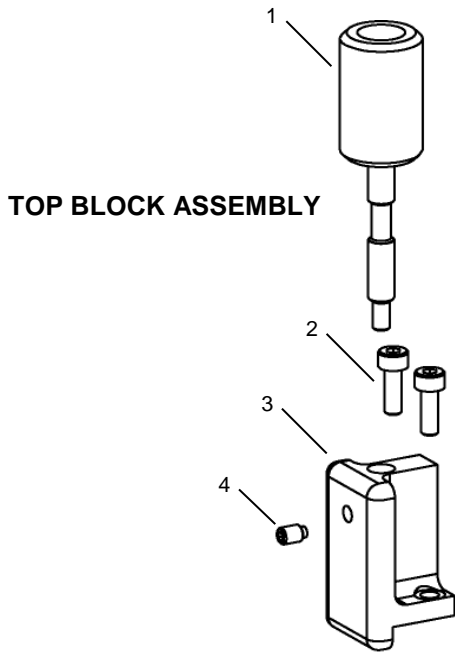
Class III – Tidland Part No. 543586

Item	Description	Part No.	
		Class II	Class III
	<b>Top Block Assembly</b>	<b>550707</b>	<b>550707</b>
1	Setscrew	132957	132957
2	Traverse Knob	539088	539088
3	Traverse Knob O-ring	554026	554026
4	Detent Ball	528781	528781
5	Steel Ball	539093	539093
6	Piston Block	539083	539083
7	Check Valve Insert	573782	573782
8	Retainer, Check Valve	573779	573779
9	Air Fitting Tee	251536	251536
10	Lever	544312	544312
11	Dowel Pin, Lever	544308	544308
12	Piston O-ring	126479	126479
13	Piston	131108	131108
14	Spring	554681	554681
15	Piston Pin	539086	539086
16	E-ring	549833	549833
17	Piston Pin O-ring	126443	126443
18	Socket Head Capscrew	130467	130467
19	Top Block	539084	539084
20	Socket Head Capscrew	250049	250049
21	Bushing, Pinion *	564861	564861
22	Socket Head Capscrew	549832	549832
23	Traverse Pinion Shaft *	539081	539081
	<b>Back Plate Assembly</b>	<b>550709</b>	<b>550710</b>
24	Brake Shoe	531758	531758
25	Brake Shoe O-ring	130136	130136
26	Adjustment Screw	598977	598977
27	Backplate	531759	538153
28	Socket Head Capscrew	544155	544155
29	Setscrew	130470	130470
30	Gib	531749	531749

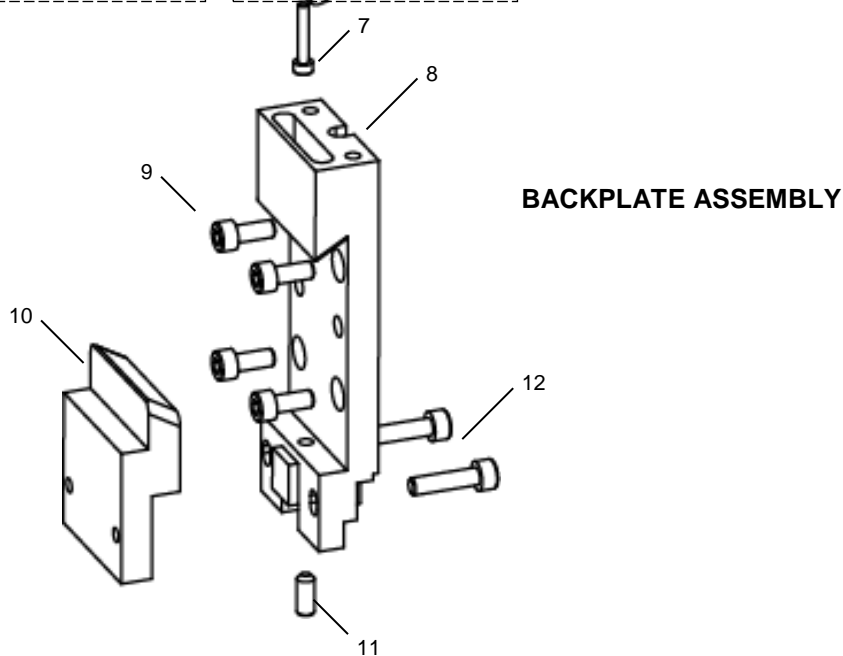
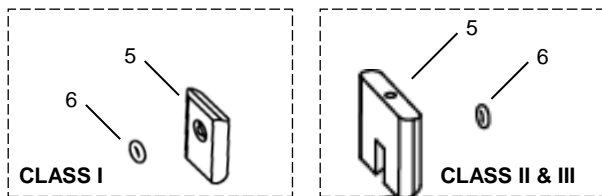
\* Item 23 is supplied as an assembly with Item 21.

# KNIFEHOLDER PARTS

## Guide Bar Mount with Manual Lock – Class I, II and III



Item	Description	Part No.		
		Class I	Class II	Class III
	<b>Top Block Assembly</b>	<b>555538</b>	<b>544156</b>	<b>544156</b>
1	Manual Brake Knob	537973	531754	531754
2	Socket Head Capscrew	130145	130467	130467
3	Top Block	537971	531750	531750
4	Set Screw	134011	130304	130304
	<b>Back Plate Assembly</b>	<b>550708</b>	<b>550709</b>	<b>550710</b>
5	Brake Shoe *	537972	531758	531758
6	Brake Shoe O-ring	130136	130136	130136
7	Socket Head Capscrew	n/a	598977	598977
8	Back Plate	537970	531759	538153
9	Socket Head Capscrew	130184	130467	250116
10	Gib	537974	531749	538154
11	Set Screw	130149	130470	130470
12	Socket Head Capscrew	250048	544155	544155

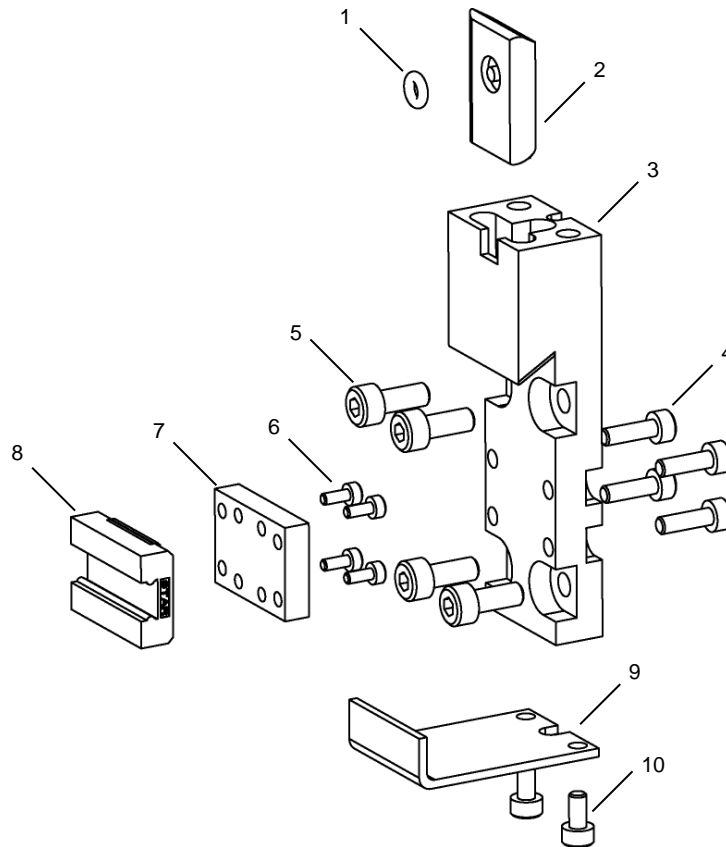


# KNIFEHOLDER PARTS

## Easy Glider Mount – Class I

The Easy Glider Mount shown is used with the same top blocks as the standard knifeholder mounts.

Class I Pneumatic Lock Top Block – page 54



Item	Description	Qty	Part No.
	<b>Back Plate Assembly</b>		<b>689497</b>
1	O-ring	1	130136
2	Brake Shoe	1	537972
3	Backplate	1	662078
4	Socket Head Cap Screw	4	130163
5	Socket Head Cap Screw	4	130184
6	Socket Head Cap Screw	4	662169
7	Bearing Spacer	1	662079
8	Linear Bearing	1	662081
9	Safety Latch	1	662080
10	Socket Head Cap Screw	2	130247
	Guide Bar		661590
	Linear Bearing Rail		662082

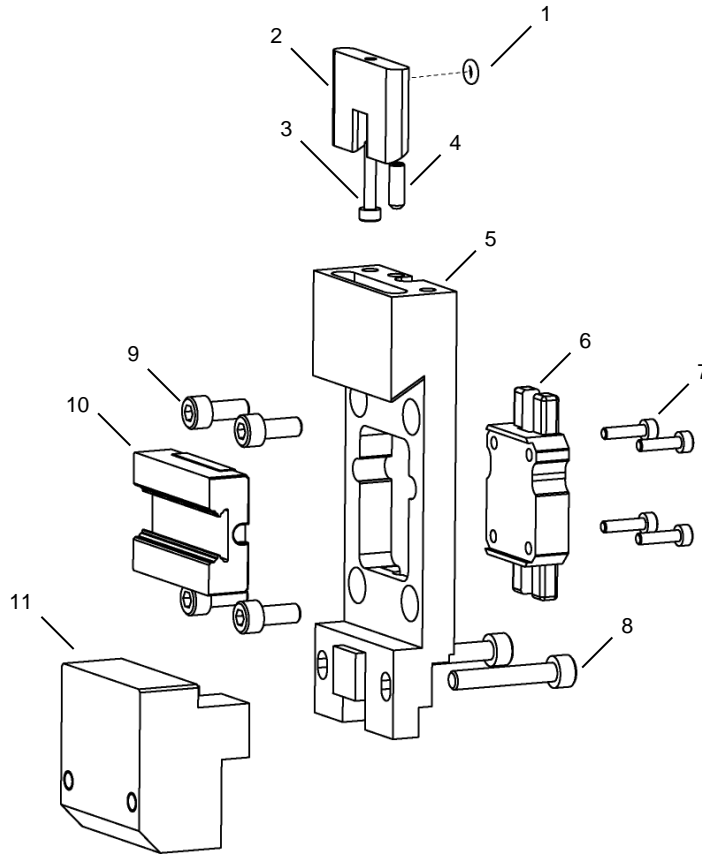
# KNIFEHOLDER PARTS

## Easy Glider Mount – Class II and III

The *Easy Glider Mount* shown is used with the same top blocks as the standard knifeholder mounts.

Class II and III Pneumatic Lock Top Block – page 58

Class II and III Manual Lock Top Block – page 60



Item	Description	Qty	Class II	Class III
	<b>Back Plate Assembly</b>		<b>615576</b>	<b>618966</b>
1	O-ring	1	130136	130136
2	Brake Shoe	1	531758	531758
3	Socket Head Cap Screw, Patch Lock	1	598977	598977
4	Set Screw, Nyloc	1	130149	130149
5	Backplate	1	595748	619001
6	Bearing Retainer	1	595703	595703
7	Socket Head Cap Screw	4	133180	133180
8	Socket Head Cap Screw	2	132265	132265
9	Socket Head Cap Screw	4	130467	250116
10	Linear Bearing	1	621879	621879
11	Stop Block	1	575766	619027
	Guide Bar		608330	608330
	Linear Bearing Rail		621880	621880

## Performance Series and C Series – Class I, II and III

### Tidland e-Knifeholder – Class II and III

NOTE: Use of any other combinations may cause damage to knifeholder or blade cartridge and void warranty.

# CARTRIDGE TO CONTROL BODY COMPATIBILITY CHART

## Performance Series and C Series – Class I, II and III

### Tidland e-Knifeholder – Class II and III

NOTE: Use of any other combinations may cause damage to knifeholder or blade cartridge and void warranty.

CLASS I			CONTROL BODY						
			CS Shear*	CS Crush*	PS Shear Automatic	PS Shear Manual	PS Crush	e-KH	
BLADE CARTRIDGE	Description	Pt No	131892	131902	536160	543919	608763 608879	(pending)	
	PS Swing Automatic Shear	547613			✓				
	PS Swing Automatic Shear w/ 360 Degree Blade Guard - <b>Pneumatic</b>	718312			✓				
	PS Swing Manual Shear	551430 596429	N/A			✓			
	PS Crush	568412		N/A	✓	✓	✓		
	PS Razor	566769			✓	✓			
	PS Rigid High Side Force (HSF)	270039388				✓			
CLASS II			CONTROL BODY						
			CS Shear*	CS Crush*	PS Shear Automatic	PS Shear Manual	PS Crush	e-KH	e-KH (2013)
BLADE CARTRIDGE	Description	Pt No	131921	131922	530527	535761	590191 607694	700173	762359
	PS Swing Automatic Shear	524508			✓				
	PS Swing Automatic Shear w/ 360 Degree Blade Guard - <b>Pneumatic</b>	548274			✓				
	PS Swing Manual Shear	569393	✓			✓			
	PS Swing Automatic Shear w/ 360 Degree Blade Guard - <b>Mechanical</b>	766913			✓				
	PS Swing Manual Shear w/ 360 Degree Blade Guard - <b>Mechanical</b>	769816				✓			
	PS Crush	568924		✓	✓	✓	✓		
	e-Knifeholder - w/ 360 guard blade	749142						✓	✓
	e-Knifeholder Swing Cartridge	696317						✓	✓
CLASS III			CONTROL BODY						
			CS Shear*	CS Crush*	PS Shear Automatic	PS Shear Manual	PS Crush CL 2 MOD	e-KH	e-KH (2013)
BLADE CARTRIDGE	Description	Pt No	131923	131923	528812	543324	N/A	708403	762358
	PS Swing Automatic Shear	535264			✓				
	PS Swing Automatic Shear w/ 360 Degree Blade Guard - <b>Pneumatic</b>	548275			✓				
	PS Swing Manual Shear	569394	✓			✓			
	PS Swing Automatic Shear w/ 360 Degree Blade Guard - <b>Mechanical</b>	766915			✓				
	PS Swing Manual Shear w/ 360 Degree Blade Guard - <b>Mechanical</b>	769817				✓			
	PS Swing Automatic Shear High Side Force	650453			✓				
	PS Crush	569508		✓		✓	✓		
	e-Knifeholder - w/ 360 guard blade	753161						✓	✓
e-Knifeholder Swing Cartridge	700518						✓	✓	
* C Series Knifeholders are obsolete and discontinued. Convert to Performance Series if possible.									



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