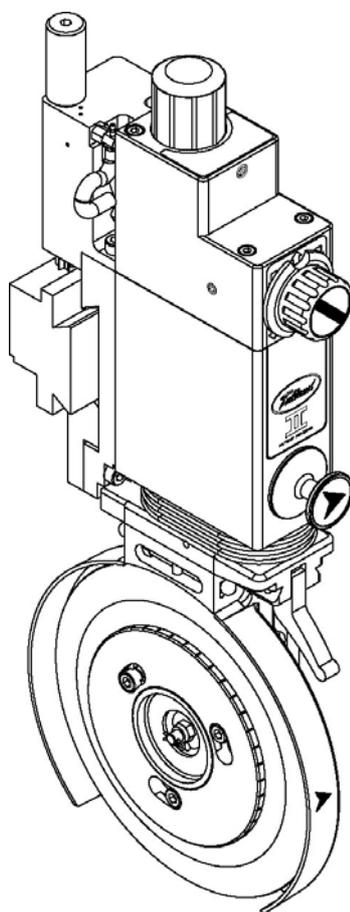


MAXCESS

TIDLAND

Tidland Performance Serie Automatic Knifeholder

Assembly / Operating instructions



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1 INTRODUCTION

Receiving and unpacking

- Handle and unpack the equipment carefully. Upon arrival, check shipment against the packing list.
- Promptly report to the carrier any damaged equipment.
- Equipment that will not be installed immediately should be stored in a clean, dry location.
- Be careful to prevent moisture, dust, and dirt from accumulating in storage and installation areas.
- Before operation, check for damaged or missing fasteners.
- If any fasteners are damaged or missing, please contact the equipment manufacturer or Fife-Tidland GmbH.

General

The Tidland Performance Series Knifeholder intended use is to produce a slit with a driven anvil ring system. There is no other intended purpose.

Fife-Tidland's performance knifeholder, henceforth referred to as knifeholder in short, has been built state-of-the-art and complies with the generally recognised and applicable safety regulations.



Read assembly and operating instructions

The assembly and operating instructions must be read and used by *all persons* who have the responsibility of installing, commissioning, operating and maintaining the sensor.



CAUTION

Failure to follow instructions may cause the knifeholder to function incorrectly and can cause serious injury.

About these assembly and operating instructions

These assembly and operating instructions are intended to help in successful and safe operation of the Tidland Knifeholder. The assembly and operating instructions contain important information on operating the Knifeholder safely, properly and efficiently.

Observing these instructions help to avoid dangers and increase the service life of the Knifeholder. No part of these or the following instructions should be construed as conflicting with or nullifying the instructions from other sources.

The assembly and operating instructions must be carefully kept and must always be available throughout the service life of the Knifeholder system. When using the Tidland Knifeholder, always follow basic safety precautions to reduce the risk of personal injury. Your company's safety instructions and procedures should always be followed.

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

Compliance with local and state safety requirements is your responsibility. Be familiar with the hazards and safety requirements in your work environment and always work safely.

This equipment is intended to be installed and used with a larger machine or factory. For compliance to EU machinery directive 2006/42/EC the end user should provide a complete risk analysis conducted per EU directives before putting this equipment into service.

Translation of the original assembly / operating Instructions:
These assembly / operating instructions are a translation. The original assembly / operating Instructions were composed in German.

EC Declaration of Incorporation

The Tidland Knifeholder has been designed and constructed in accordance with the standards and regulations of the European Union. A Declaration of Incorporation is attached to this documentation.

Proper usage

The Tidland Performance Serie knifeholder is intended exclusively for the cutting of webs in the direction of material feed. Fife-Tidland's performance knifeholder was designed and manufactured as a component of a processing plant. It may only be operated within the technical limits.

The Maximum operating air pressure for the knifeholder is 6,9 bar:

The ambient temperature for the knifeholder has to be 10°C up to 40°C.

The supplied compressed air has to be free of oil and water and has to be filtered with 5µm.

The knifeholder is designed for maximum speed of

- Class 1 with 1000 m/min,
- Class 2 with 1650 m/min and
- Class 3 with 3000 m/min.

Any other use is deemed as not being in accordance with the intended purpose.

The knifeholder may only be operated with those equipments which have been designated and cleared by Fife-Tidland GmbH.

The manufacturer will not be liable for any damage resulting from this improper use. The user/operator bears sole responsibility for the risk.

2 SAFETY INSTRUCTIONS

Important information

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

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

Please note the following:

- The content of these assembly and operating instructions
- The content of safety instructions for cutting units
- Notices and symbols directly attached to the cutting station, such as danger signs, operating signs, arrows indicating a direction of rotation, component identifications etc.
- The requirements of the machine manufacturer
- National, state and local requirements for accident prevention and environmental protection

Information about safety instructions

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



SIGNAL WORD

Source of danger and its results.

⇒ Avoiding dangers

Signal words

The signal word **DANGER** indicates an immediate danger of serious injury or death.

The signal word **WARNING** indicates a possible danger which could lead to serious injury or death.

The signal word **CAUTION** refers to a possible danger which could lead to slight to moderate injury.

The signal word **ATTENTION** refers to a possible danger which could lead to material damage.

Symbols

**Warning/caution – dangerous area**

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

**Warning/caution – danger due to crushing**

Refers to danger of injury caused by crushing.

**Warning/caution – danger due to cutting**

Refers to danger of injury caused by cutting.

**Grounded conductor**

This sign is affixed next to each grounding screw.

**Use protective gloves**

It is imperative to use cut-resistant protective gloves in addition to personal protective equipment.

**Eye protection**

Wear eye protection when working with compressed air.



Refers to general hazards that will result in damage to the device or system.

**Read operating instructions**

Follow these operating instructions for proper and safe use. Keep for future use.

**Note:**

Reference to important information.

Additional markings

– Bulleted list

• Instructions

1. Instructions which must be processed in the specified order

2. End of the instructions

→ Reference or cross-reference

Personnel requirements

The tasks listed in these assembly / operating instructions may only be carried out by appropriately qualified personnel commissioned by the operator. The responsibilities of the personnel for the work on the system must be clearly defined by the operator.

Transport, assembly, maintenance, troubleshooting, disassembly:

- Specialized staff
 - Mechatronics engineer, industrial mechanic, etc.

Electrical connection or disconnection:

- Specialized staff
 - Only by a qualified electrician

Control during operation:

- Specialized staff
 - Machine and system operators, etc.
- Personnel or trainees trained and supervised by the system operator

Repair:

- Specialized staff
- Service technician of Fife-Tidland GmbH

Residual risk

Risk reduction for the customer / operating company:

Locking device with separating protective devices prevents access to the hazard point during operation

- Even if all safety requirements are observed, a residual risk still remains when the slitting station is in operation. During setup and preparation work it may be necessary to remove customer protective devices. This results in various residual risks and potential hazards, which every operator must keep firmly in mind.
- The residual risks in the machine during operation are the hazard due to cutting and crushing on the knifeholder. After the electrical energy on the blade cartridge is turned off, the blades run-out .



Note:

When the machine starts up again, no persons are permitted in the area of the cutting process.

Safety concept

Note:

A locking device in combination with a separating protective device (guard door, fence) prevents access to the hazard point during operation. The plant operator protects the entire system in line with the safety concept.

The safety concept provides for movable and stationary separating protective devices. The following points normally apply:

- Separating protective devices can only be removed with a tool.
- Movable separating protective devices will not remain in the protective position if they are unsecured.
- Fastening material must be connected with the protective devices so it cannot be removed.

The safety function with access monitoring must be fulfilled by the overall system manufacturer in accordance with EN ISO 13849 (PLr) or IEC 61508/61511 (SIL).

Required performance level: PLr=c (according to EN ISO 13849)



Note:

Attach warning sign next to the electrical main switch:
"Actuating the electrical line disconnection switch does not also turn off the pneumatic energy supply"!



Note:

An interruption of the energy supply (electrical, pneumatic) brings all elements of the control system into a safe state. However, before switching on the main switches again, make sure that no unexpected movements will occur, especially with the pneumatics.

Notes for operating personnel



- There is a possibility of a hazard due to cutting on the knifeholder.



- During any work at the Knifeholder always wear cut resistant protective gloves, in addition to personal protective equipment!



- Danger of injury by crushing
⇒ All tasks must only be performed if the power is turned off and the machine is stopped and protected against being turned on again.
- Pneumatic components under pressure can cause injuries. Work on pneumatic equipment to be carried out by authorised professionals only. For all work on Fife-Tidland's performance knifeholder turn off pneumatic main switch. Secure knifeholder against unintended restarting.
- Blade run-out during E-stop.
Duration of blade rotation during emergency shutdown (activation of the E-stop button) is system-dependent.
- The operating company must ensure that all persons who work on or with the knifeholder are familiar with the residual risks.
- Follow the instructions, which prevent residual risks from leading to accidents or damage.
- During setup and preparation work it may be necessary to remove customer protective devices. This results in various residual risks and potential hazards, which every operator must keep firmly in mind.
- All assembly tasks must only be performed when there is no electrical power in the system, i.e. all work must be performed while main switch of the Fife-Tidland slitting station has been switched off.
- The assembly / operating instructions should be ready to hand at or near the slitting station at all times.

- The operating personnel has to wear their personal protective gear. This includes especially protective gloves / stainless steel mesh gloves, safety goggles e.g. during grinding work and protective clothing if necessary.
- Work may only be carried out by trained professionals or by instructed personnel.

Sound pressure level

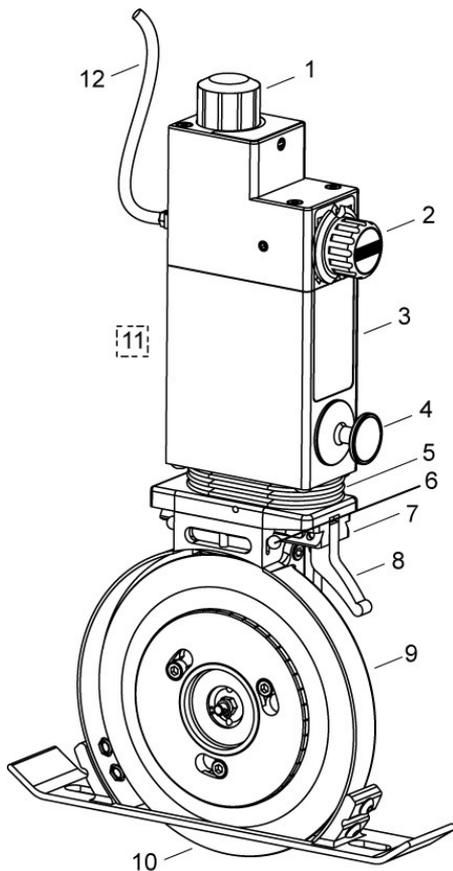
- A-weighted emission sound pressure level L_{pA} : $\leq 70\text{dB(A)}$
No hearing protection is required.
In combination with other machines of the customer, hearing protection may be required.

3 PRODUCT DESCRIPTION

Knifeholder Components



Note:
Complete illustrations and part number begin on [page 6-29](#).



Item	Description
1	Depth Control Knob Increase blade cartridge stroke - rotate counterclockwise Decrease blade cartridge stroke - rotate clockwise
2	Function Control Knob yellow arrow - setup (to position knifeholder) extends knifeholder blade cartridge for knifeholder positioning and locking to guide bar red arrow - retract (non-operating position) completely retracts knifeholder blade cartridge green arrow - run (operating position) extends knifeholder blade cartridge to Depth Control Knob setting Caution! Do not operate knifeholder in the setup position
3	Control Body
4	Cant Angle Key Blade cartridge angle control
5	Knifeholder bellows Prevents foreign matter from entering knifeholder
6	Safety Lock Pin (shown in locked position)
7	Dovetail (control body to blade cartridge interface)
8	Lever of the Dovetail (shown in locked position)
9	Blade Cartridge (shown with blade guard safety attachment)
10	Top blade
11	Guide Bar Mount Assembly (not shown)
12	Pneumatic supply Air Supply for control body and cartridge

Options:

- Class 1 Pneumatic 360° blade guard ; → [page 3-2](#)
- Class 2 / 3 Pneumatic 360° blade guard; → [page 3-4](#)

Specifications



Note:
Actual speed is dependent upon application and web material

	Class 1	Class 2	Class 3
Top blade diameter	3,54" (90 mm)	5,91" (150 mm)	7,87" (200 mm)
Minimum Slit Width	1,0" (25,4 mm)	2,0" (50,8 mm)	3,0" (76,2 mm)
Designed Maximum Speed	3.500 fpm (1.067 m/min.)	5.500 fpm (1.677 m/min.)	10.000 fpm (3.049 m/min.)
Recommended Operating Air Pressure	60–90 PSI (4.1–6.2 bar)	60–90 PSI (4.1–6.2 bar)	60–90 PSI (4.1–6.2 bar)

* If using the Class 1 360° Blade Guard , the minimum blade diameter required is 84 mm. CE requirement is <6 mm gap from blade edge to cartridge guard.

360° Blade Guard



Note:
For information about the new mechanical 360° Blade Guard Cartridge, call Customer Service of the Fife–Tidland GmbH.



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

Pneumatic 360° Blade Cartridge, class 1

Part-No. 718312

The guard protects the blade during handling and non-operation when air is not supplied to the knifeholder. The guard is to prevent bodily injury during handling or if the product is dropped.

The guard consists of the guard flap, a pneumatic cylinder, a wedge cam, cylinder mount and a return spring that keeps the guard closed when air is not supplied to the cylinder.

When air supply is off, the cylinder retracts and the flap exposes the blade for the slitting operation. The flap and knifeholder downstroke operation is staged so that the flap never interferes with the anvil ring.

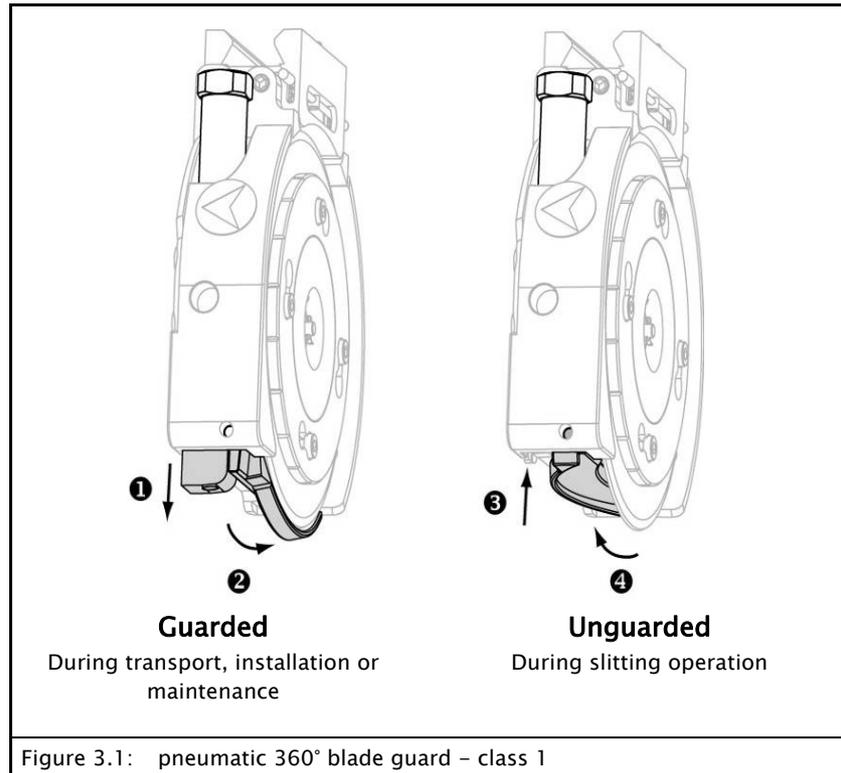


Figure 3.1: pneumatic 360° blade guard – class 1

If air supply is off or the function control knob is in the red (retract) position, the cylinder is extended (1) and the blade guard pivots into the guarded position (2) as the cartridge retracts.

If air supply is on and the knifeholder function control knob is turned to the setup (yellow) or engage (green) position, the cylinder retracts (3) and the blade guard pivots is in the unguarded position (4) .

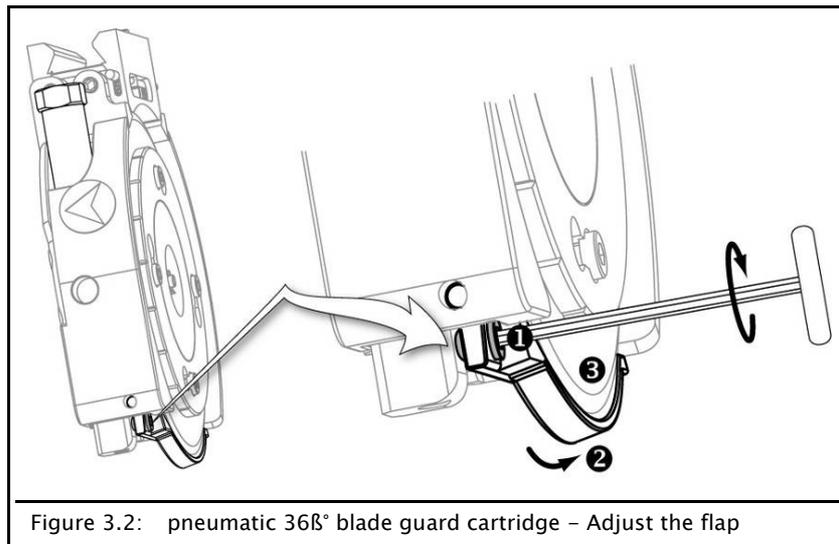
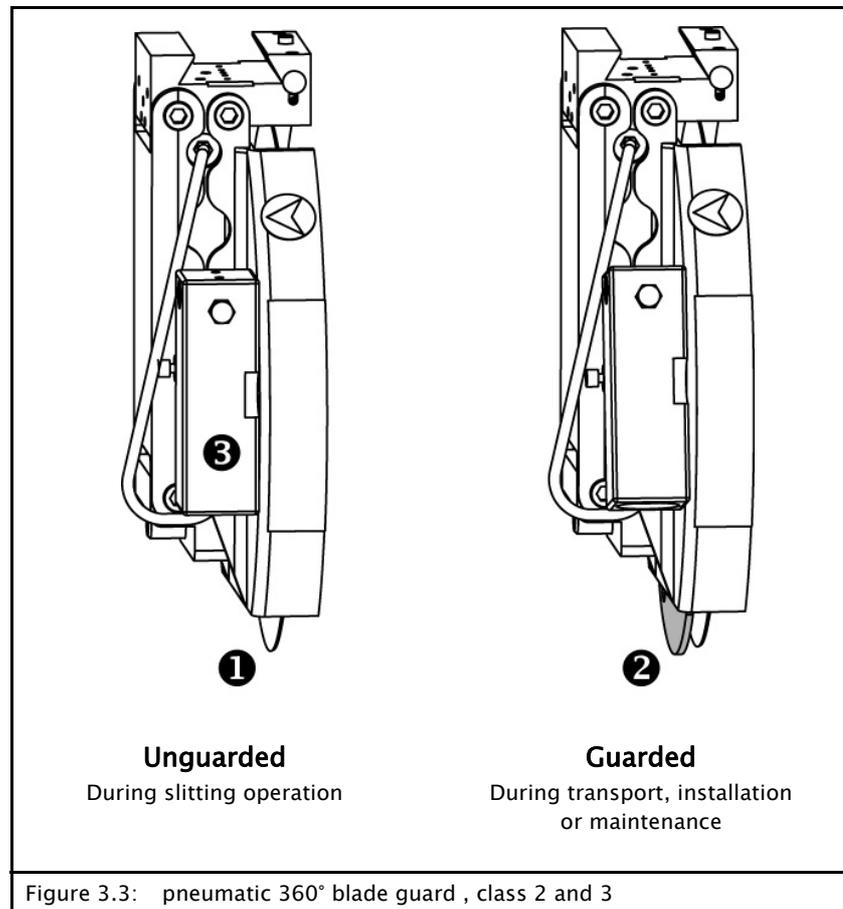


Figure 3.2: pneumatic 360° blade guard cartridge – Adjust the flap

To adjust the flap for a closer fit to the top blade, turn set screw (1) clockwise until the guard flap (2) just touches the top blade (3), and then back off one-quarter turn. The top blade should spin freely and smoothly on the bearing hub and not rub against the guard flap.

Pneumatic 360° blade guard cartridge, class 2 & 3

Class 2 – Part No. 548274,
Class 3 – Part No. 548275



Extending the Blade Guard

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

Flow Control Valve

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

Positions of the Function Control Knob

Yellow arrow

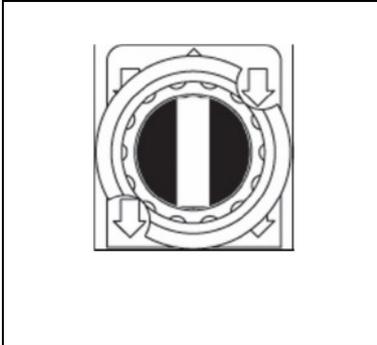


Figure 3.4: Set up

The blade cartridge extends to the selected depth and allows half of the available side stroke. Use when

- positioning knifeholder to anvil ring and
- afterwards lockup to guide bar

Red arrow

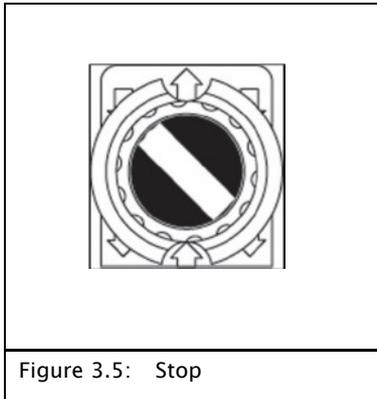


Figure 3.5: Stop

Reverses sidestroke movement, then retracts blade cartridge. Use when

- knifeholder is not in operation.
- adjusting depth control knob.
- traversing knifeholder with retracted blade cartridge to new slit position.

Green arrow

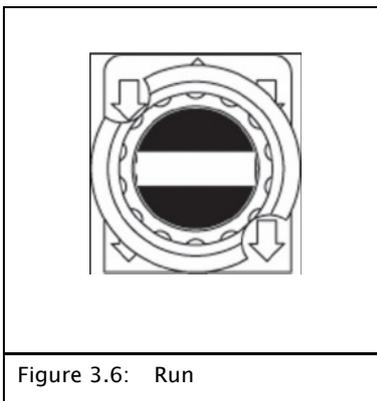


Figure 3.6: Run

The blade cartridge extends to the selected depth and allows full sidestroke, use when

- operating knifeholder

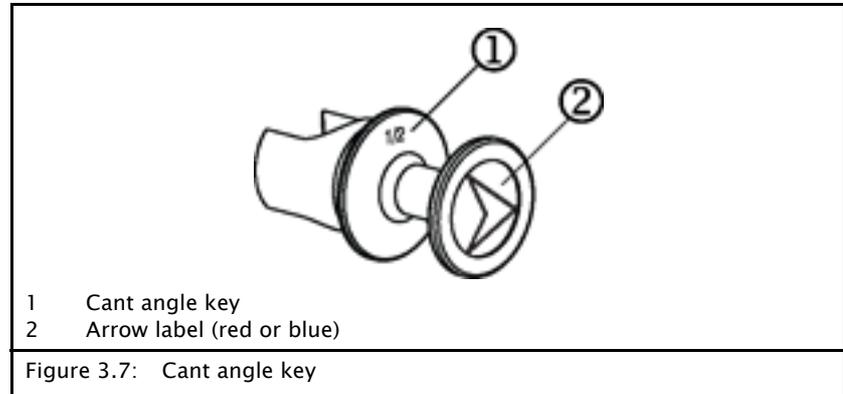
Cant angle key

Selection cant angle

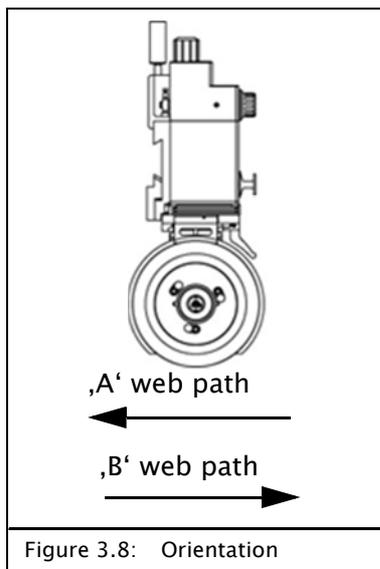
Cant angle options

0°, 0.25°, 0.5° or 1.0°

The angle is engraved in the key.



Orientation



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, Fife-Tidland recommends replacing the cant angle key with one of the correct color.

The arrow on the cant angle label should:

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

If the arrows point in opposite directions:

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

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

Web path

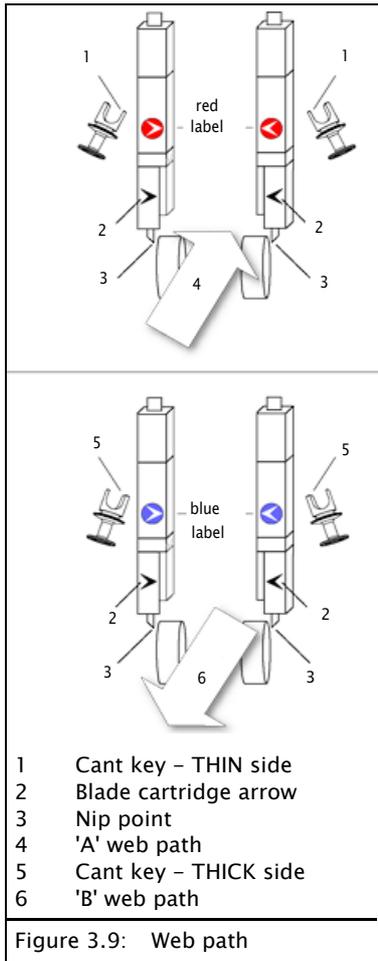


Figure 3.9: Web path

Web path 'A'

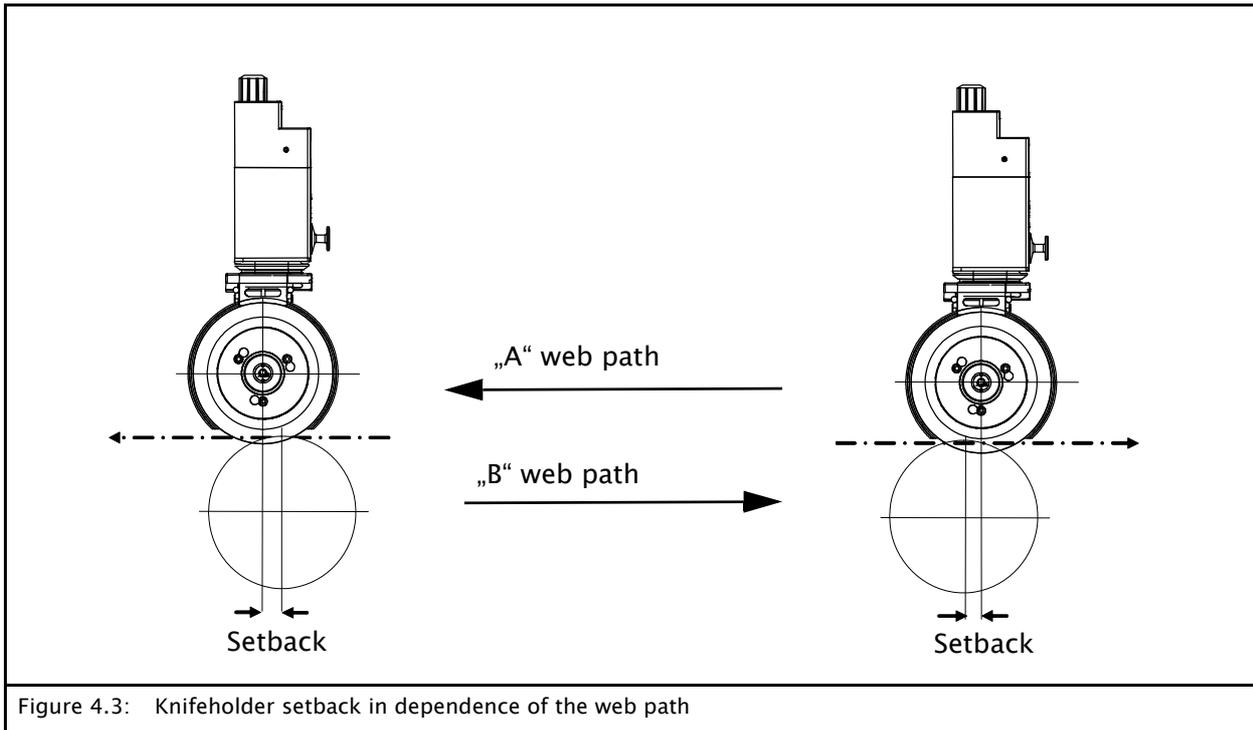
- Web moves from **control side of knifeholder** toward the guide bar mount
- Cant key label is **RED**.
- Cant key arrow points toward **THIN** side of the cant key.
- Blade cartridge arrow points to the nip point (contact side of anvil ring).

Web path 'B'

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

Knifeholder setback

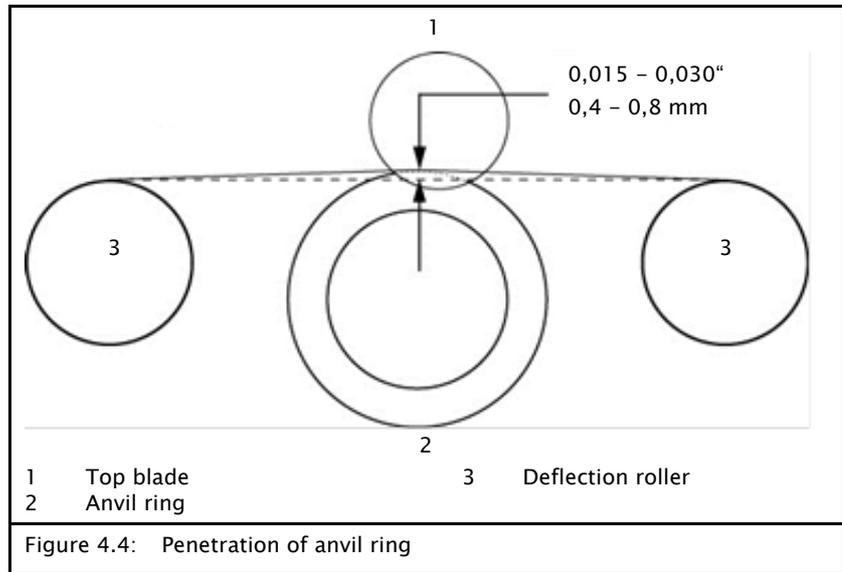
- For tangent slitting only.
- For best slit result, the web must be in contact with the lower anvil ring at the cut point. If the web contacts the top blade ahead of the cut point, the material will tear instead of slitting cleanly.
- Geometry shown is based on medium weight kraft paper. For assistance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



Recommended offset for paper-based products:		
Class 1	1/8"	3,2 mm
Class 2	1/4"	6,4 mm
Class 3	3/8"	9,6 mm

Web penetration

To maximize web stability at the cut point, Fife-Tidland recommends web penetration by the anvil ring of 0.4– 0.8 mm [.015"–.030"]. Check this measurement by laying a straight edge across the deflection rolls to represent the web. Measure how far the anvil ring "penetrates" the plane created by the straight edge.



Thicker web materials require more penetration, while thinner or sensitive materials may require no penetration. For a more detailed analysis call Fife-Tidland Service for assistance.

Dimensions

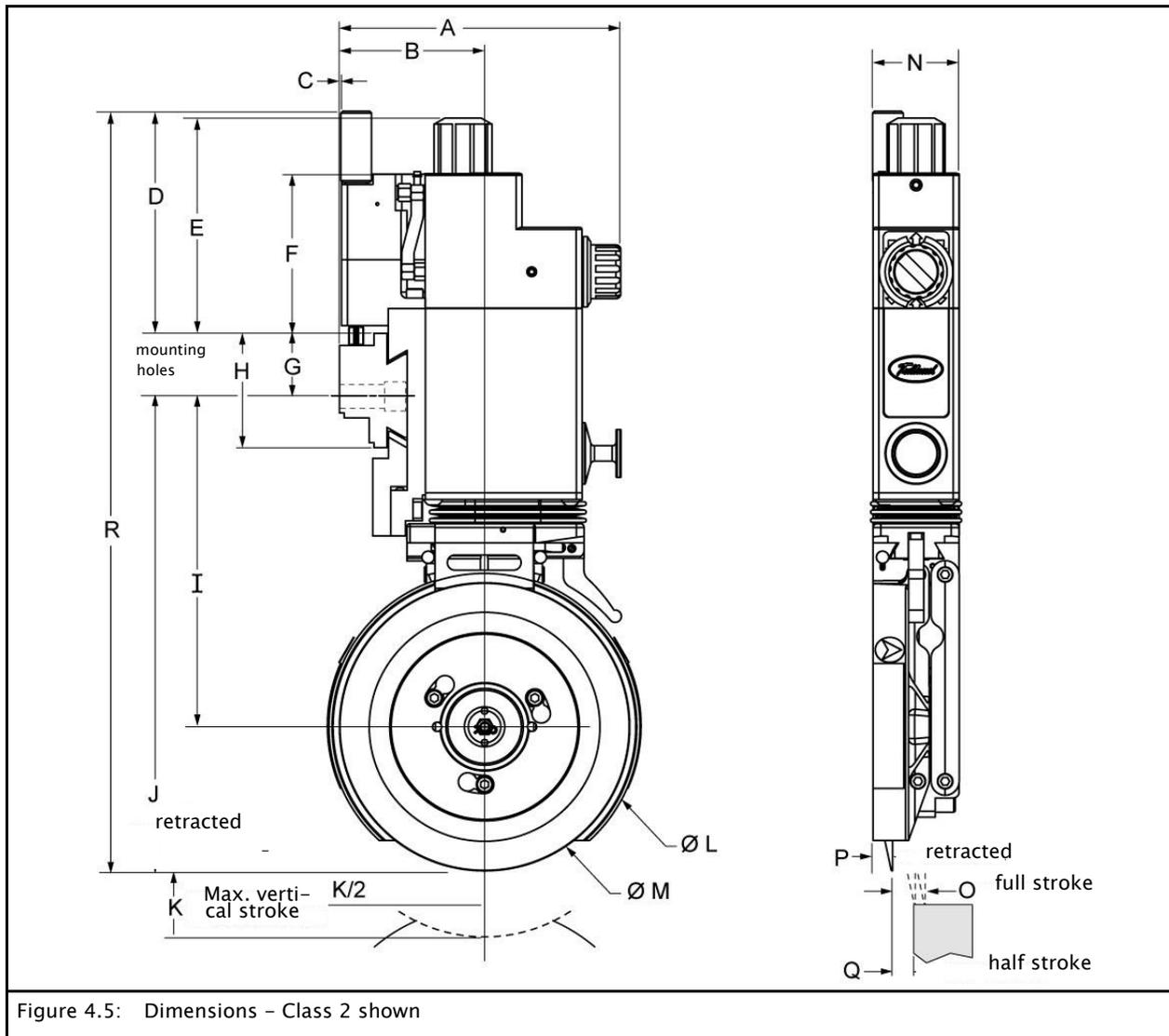


Figure 4.5: Dimensions - Class 2 shown

Class 1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Inch	4,74	2,44	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
mm	120,5	62,0	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
Class 2	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Inch	5,72	2,94	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
mm	145,3	75	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
Class 3	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Inch	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
mm	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

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

Determine mounting dimensions

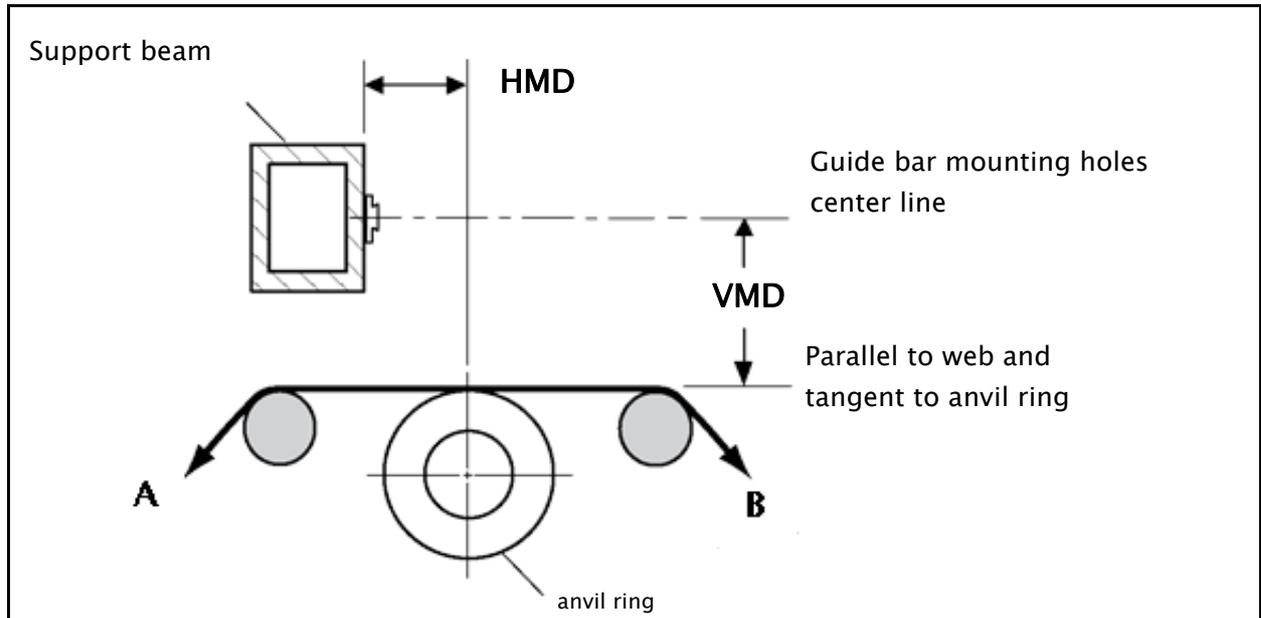


Figure 4.6: Mounting dimensions

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.

Tangential and wrap slitting:		
Class 1	6 ⁻²⁹ / ₃₂ "	175,4 mm
Class 2	10 ⁻³ / ₁₆ "	258,8 mm
Class 3	12 ⁻¹ / ₄ "	311,2mm

These dimensions reserve approximately half of blade cartridge stroke for top blade regrinding.

Horizontal mounting dimension – HMD

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

	Tangent slitting*		Wrap slitting**
	A web path	B web path	A or B web path
Class 1	2 ⁻⁹ / ₁₆ " (65,1 mm)	2 ⁻⁵ / ₁₆ " (58,7 mm)	2 ⁻⁷ / ₁₆ " (61,9 mm)
Class 2	3 ⁻⁷ / ₃₂ " (81,8 mm)	2 ⁻²³ / ₃₂ " (69,1mm)	2 ⁻³¹ / ₃₂ " (75,4 mm)
Class 3	3 ⁻²⁷ / ₃₂ " (97,6 mm)	3 ⁻³ / ₃₂ " (78,6mm)	3 ⁻¹⁵ / ₃₂ " (88,1mm)

* These dimensions will result in an offset as listed on [page 4-2](#).

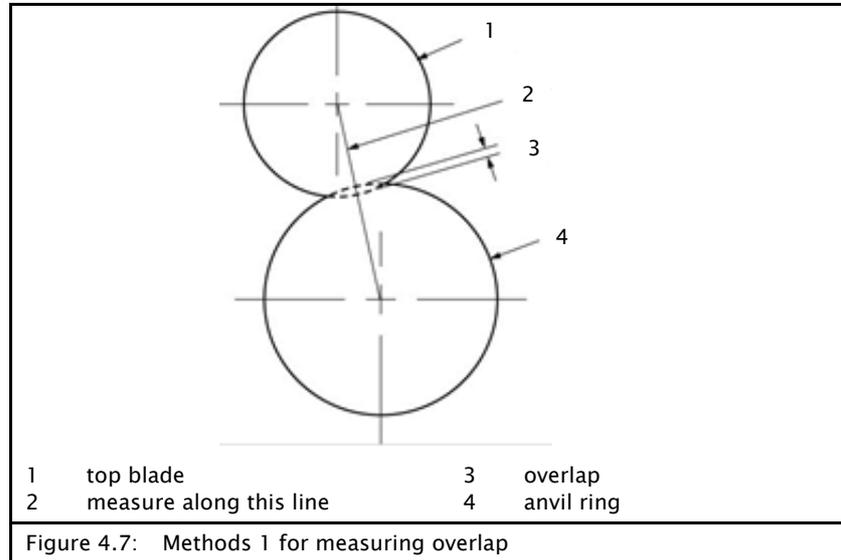
** These dimensions provide no setback.

Methods for measuring overlap

Knifemaker setup instructions, → [page 5-2](#) and following.

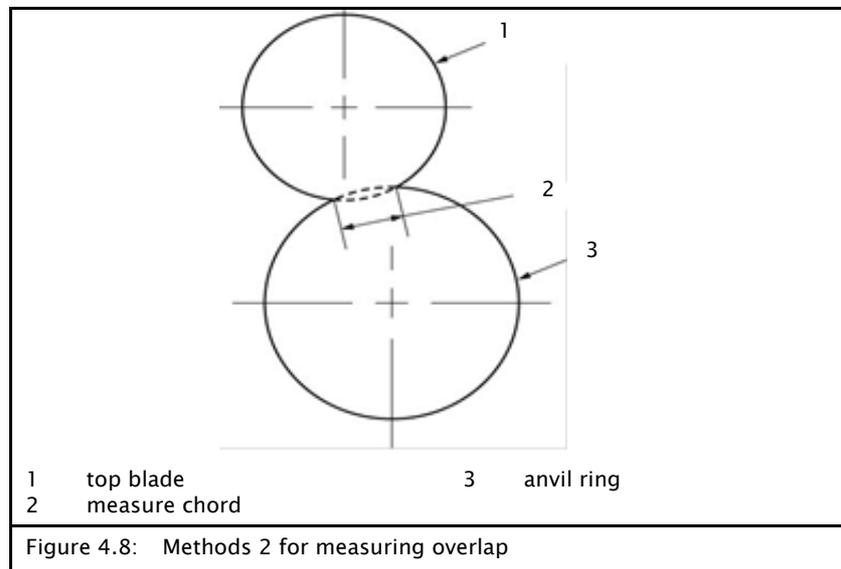
Method 1

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



Method 2

Measure the chord of the intersection between the top blade and anvil ring.

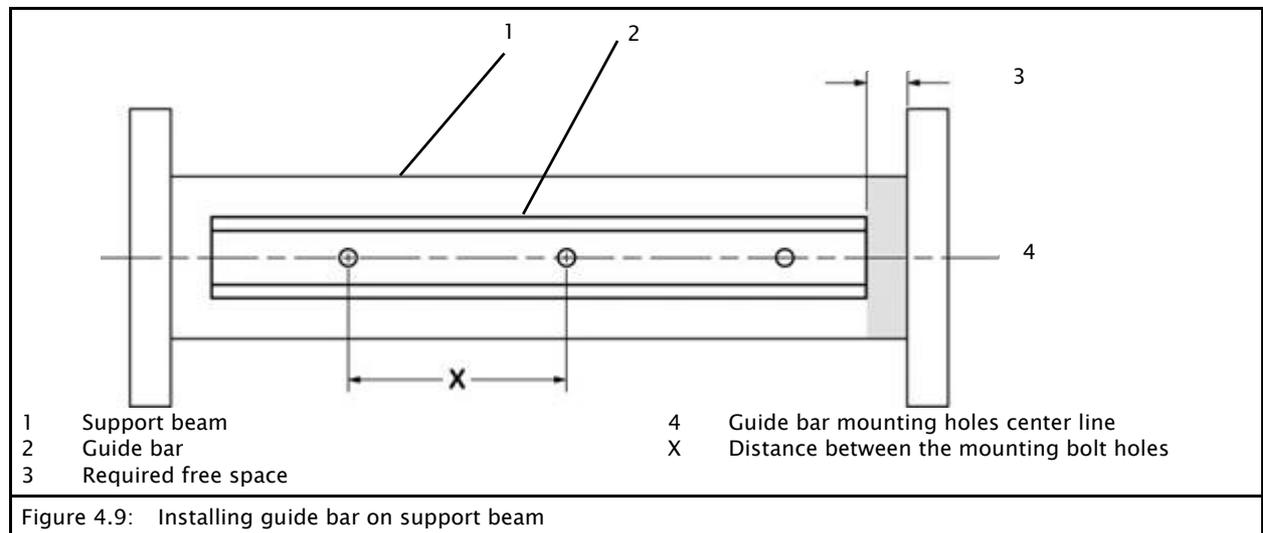


Installing guide bar on support beam



Note:

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



The maximum recommended drilling distance (X) between the fastening boreholes on the guide bar is 300mm.



Note:

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

	Recommended Free Space (Minimum)	
Class 1	2"	50,8 mm
Class 2	3"	76,2mm
Class 3	4"	101,6mm

Mounting the knifeholder on the guide bar

Knifeholder with manual lock



WARNING

Sharp blades cause cutting injuries to hands and arms !

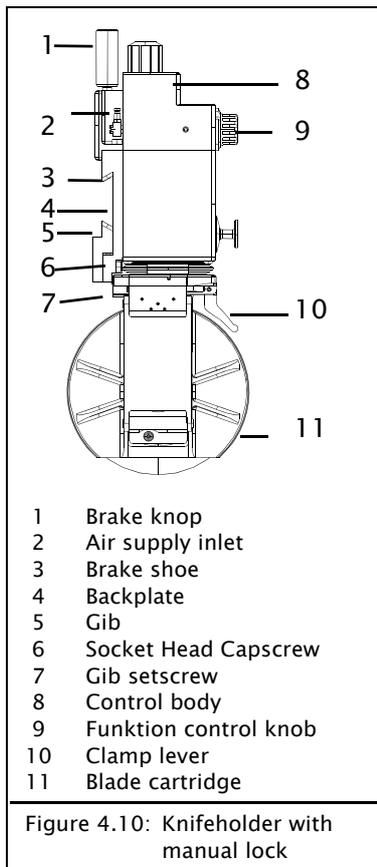
⇒ During any work at the Knifeholder always wear cut resistant protective gloves, in addition to personal protective equipment!



Note

Control body can be installed with the blade cartridge attached.

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 the backplate if protruding out.).
2. Align the backplate with the guide bar end.
3. Slide the knifeholder onto guide bar. If clearance is restricted, remove blade cartridge, → [page 6-3](#).

Note:

To adjust the gib, → [page 4-9](#), if necessary.

4. Turn the brake knob clockwise to secure the knifeholder in position.
5. Turn the function control knob to the RED position (retracted) and connect the air supply line.

Installation at center of guide bar

1. Remove the blade cartridge from the control body,
→ [page 6-3](#).
2. Remove the two socket head cap screws that secure the gib to the backplate.
3. Remove the gib.
4. Turn the brake knob counterclockwise to fully retract the brake shoe into the backplate.
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 backplate.
7. Install and tighten the socket head cap screws to secure the gib in place.
(Torque: Class 1 = 2,9 Nm; Class 2 and 3 = 5,8 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.
11. Turn the function control knob to red position and connect the air supply line.

Adjusting the gib

1. Loosen the two gib socket head cap screws.
2. Tighten or loosen the gib set screw to achieve a secure fit of the knifeholder on the guide bar, in order to move the knifeholder on the guide bar.
Recommended:
Gradually adjust the screws by $\frac{1}{4}$ turn.
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 1 = 2,9 Nm; class 2 and 3 = 5,8 Nm).
4. Readjust as necessary.

Knifeholder with pneumatic lock



WARNING

Sharp blades cause cutting injuries to hands and arms!

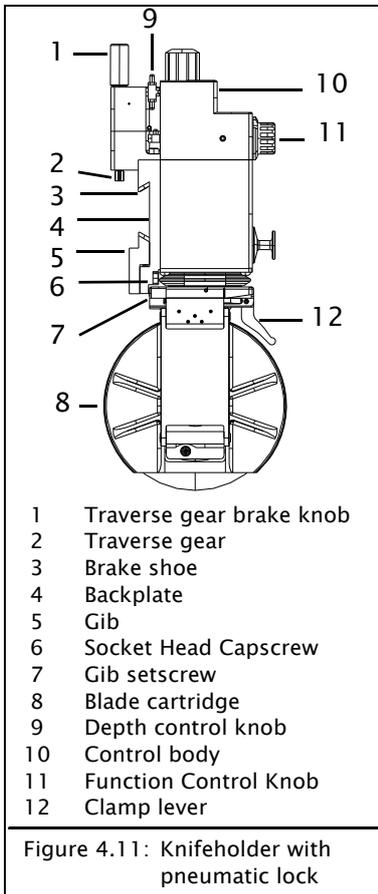
⇒ During any work at the Knifeholder always wear cut resistant protective gloves, in addition to personal protective equipment!



Note

Control body can be installed with the blade cartridge attached.

Installation at end of guide bar (recommended)



1. Align the backplate and traverse gear with the guide bar end and gear rack.
2. Make sure the traverse gear brake knob is in the unlocked (up) position (Push the brake shoe up into the backplate if protruding out.)
3. Slide the knifeholder with the backplate onto the guide bar. If clearance is restricted, remove the blade cartridge, → [page 6-3](#).
4. Turn the traverse gear brake knob to move the knifeholder into position

Note:

To adjust the gib, → [page 4-9](#), if necessary.

5. Turn the function control knob to the red position and connect the air supply line.
6. Push down the traverse gear brake knob to lock the knifeholder to the guide bar. Pull up the traverse gear brake knob to unlock and traverse the knifeholder.

Installation at center of guide bar

1. Remove the blade cartridge , → [page 6-3](#) .
2. Remove the two socket head cap screws that secure the gib to the backplate.
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 backplate.
6. Install and tighten the socket head cap screws to secure the gib in place.
Torque:
 - Class 1: 2,9 Nm;
 - Class 2/3: 5,8 Nm
7. Adjust the gib, if necessary, → [page 4-9](#).
8. Turn the traverse gear brake knob to move the knifeholder into position.
9. Reinstall the blade cartridge onto the control body .
10. Turn the function control knob to red position and connect the air supply line.
11. Push down the traverse gear brake knob to lock the knifeholder to the guide bar.

Mounting *Easy Glider* linear bearing

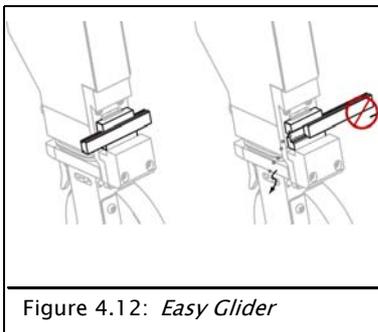


Figure 4.12: *Easy Glider*

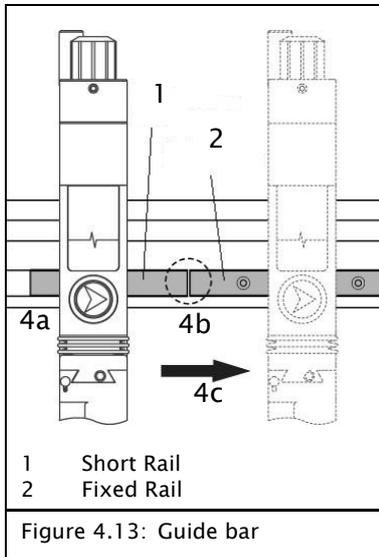
- Do not remove the factory-installed short rail section from the linear bearing: you will use it to install the knifeholder onto the guide bar rail.
⇒ Failure to use this rail section when installing the knifeholder may result in bearing damage and **void bearing warranty** .
- Mounted linear bearing is factory preset to be loose in the knifeholder backplate.
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 guide bar the bearing movement will cease.

Mount knifeholder with *Easy Glider*



Note

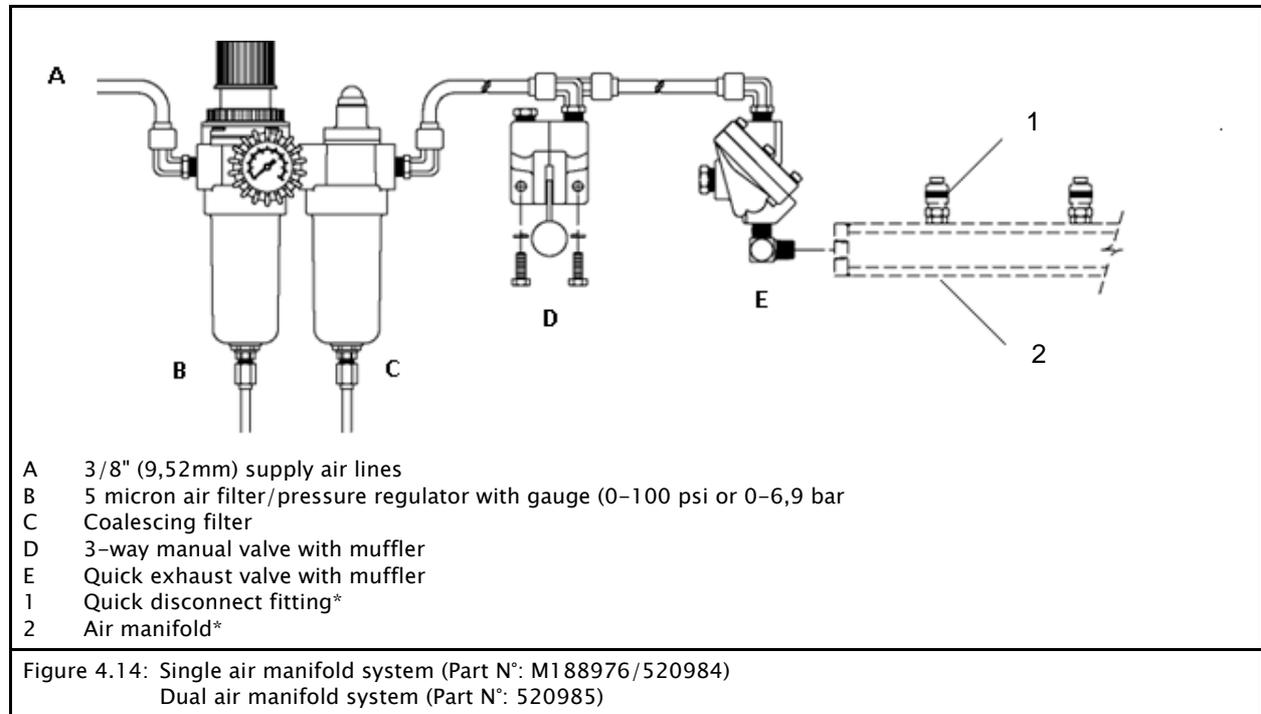
Remove blade cartridge(s) from knifeholder(s) before handling.



1. At the mounting end only, locate and remove the socket head cap screw on the face of the 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 gear brake knob (Push the brake shoe up into the backplate if protruding out.)
4. Hold the short rail section securely in the knifeholder,
 - a. Place rail section, with knifeholder, 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 fixed bearing rail.
 - d. Save the short rail piece for future use when removing knifeholders from the guide bar.
5. After all knifeholders are installed, reinstall the socket head cap screw in guide bar.
6. Reinstall blade cartridge(s) on knifeholder(s).
7. Turn the function control knob to red position on all knifeholder(s).

Installation of the Pneumatic System

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.



* 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)

Internal hoses may rupture if maximum air pressure is exceeded.



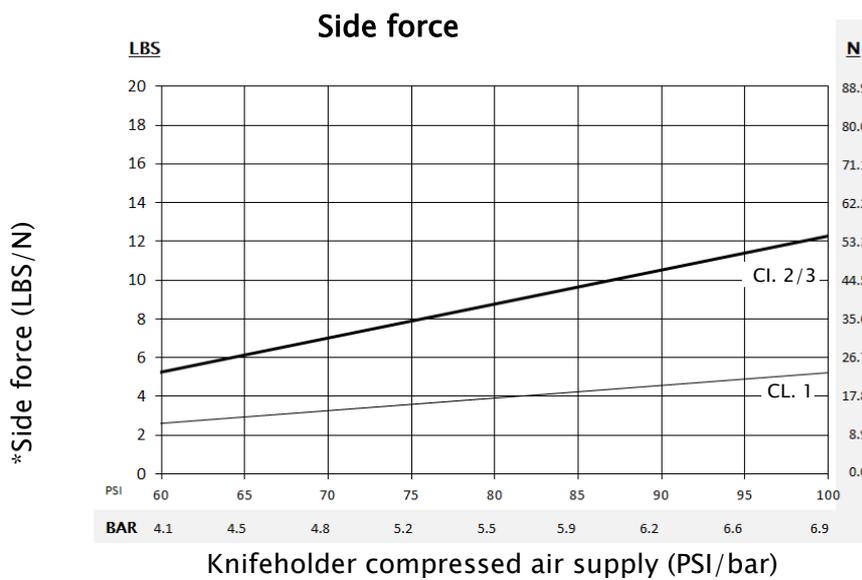
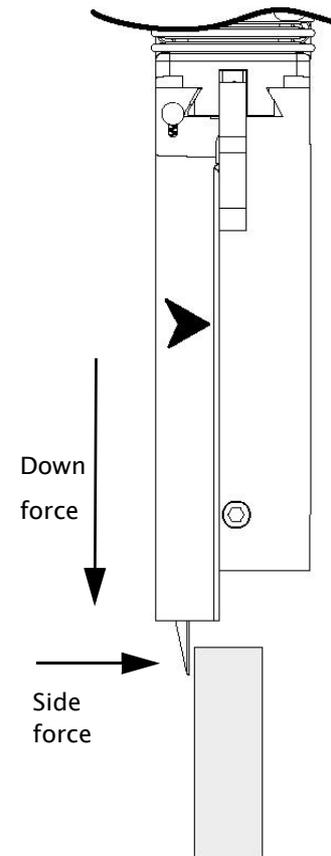
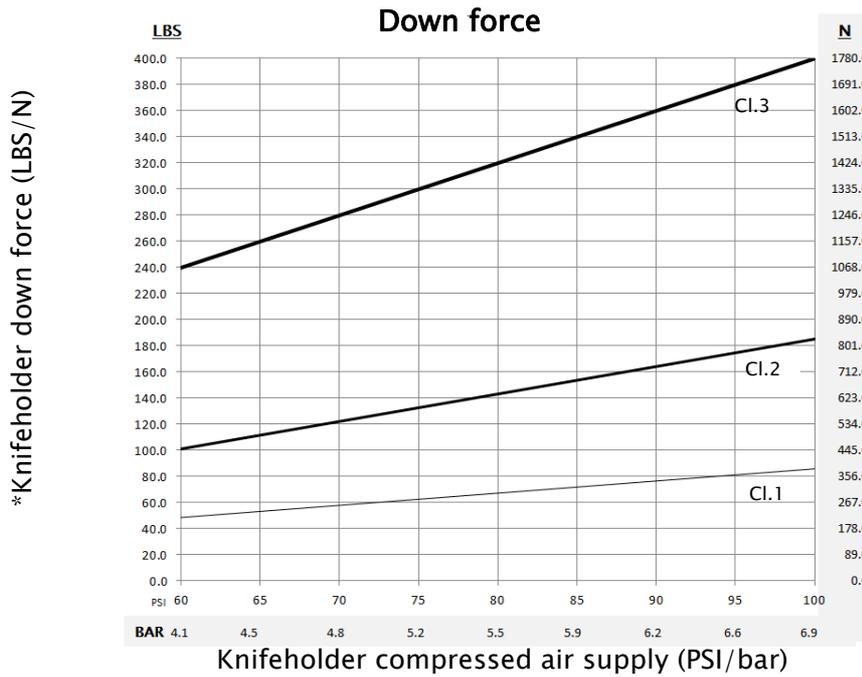
Clean, filtered, non-lubricated, dry air is required for optimal performance of the knifeholder.

- Before operating, make sure that the air lines from the air manifold to the knifeholder are securely connected.

5 OPERATION

Down Force and Side Force

Recommended operating air pressure: 4.1–6.2 bar (60–90 psi)
 System air pressure: max. 6.9 bar (100 psi)



* Knifeholder loads will vary slightly from averages shown.

Knifeholder with manual lock



WARNING

Sharp blades cause cutting injuries to hands and arms !

⇒ During any work at the Knifeholder always wear cut resistant protective gloves, in addition to personal protective equipment!



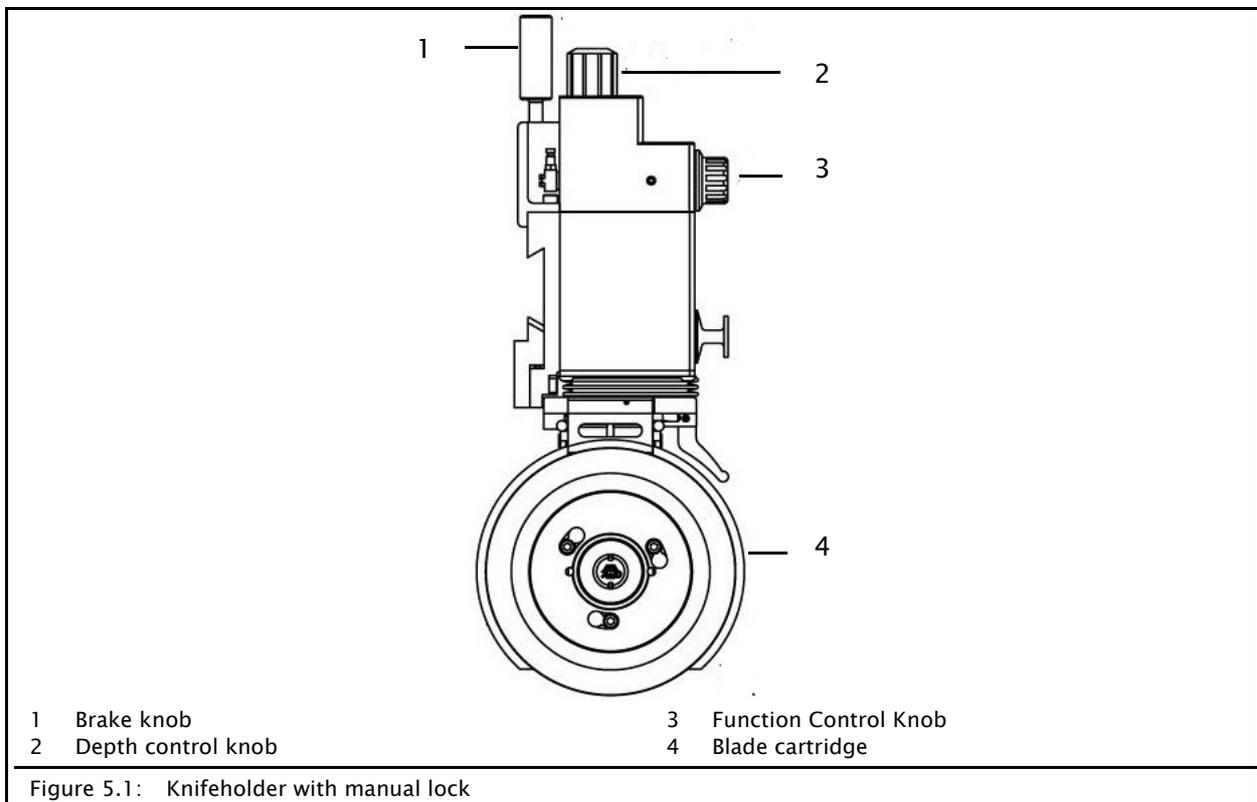
Note:

Keep knifeholders and blade cartridges free of dust and debris during operation. Maintenance schedule is dependent upon machine environment.

Mounting

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. Turn the function control knob to the red position.
2. Loosen the brake knob. Knifeholder is ready to move.



Note:

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

3. **For first time operation or for use with a new full diameter blade, adjust the depth control knob to one-half its total stroke.**
4. Manually slide the knifeholder along the guide bar until the top blade is close to the anvil ring and almost touches it (about 6mm lateral gap between the top blade and the anvil ring).



⇒ Ensure that the top blade is not directly over the anvil ring in order to prevent damage by collision when you continue with the setup (point 5).

Setup

5. Turn the function control knob to the yellow position to extend the knifeholder blade cartridge.
6. Manually slide the knifeholder along the guide bar until the top blade and the anvil ring just touch.
7. Tighten the brake knob to lock the knifeholder to the guide bar, top blade and anvil ring should be touching.
8. Observe overlap of top blade and anvil ring. If the overlap is correct – 0.8mm (–0.030") – the knifeholder is ready to slit: go to Step 10.
If the overlap is incorrect, go to the next step to make adjustments. (Some web products may require more or less overlap).



Note:

All depth control adjustments must be made in the red position.

9. Turn the function control knob to the red position (retracted), before starting to adjust the blade overlap.
 - To increase the overlap, turn the depth control knob counterclockwise.
 - To decrease the overlap, turn the depth control knob clockwise.



Note:

One click increases or decreases the overlap **0,1 mm** (0,004").
One complete turn increases or decreases the overlap **1,0mm** (0,04").

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



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.

Operation

10. When overlap is correct,

- turn function control knob to the red (retract) position, if necessary, to retract the blade cartridge,
- then turn it to the green position (run), extending the blade cartridge.
- The knifeholder is ready to slit.

Mounting with pneumatic lock



WARNING

Sharp blades cause cutting injuries to hands and arms!

⇒ During any work at the Knifeholder always wear cut resistant protective gloves, in addition to personal protective equipment!



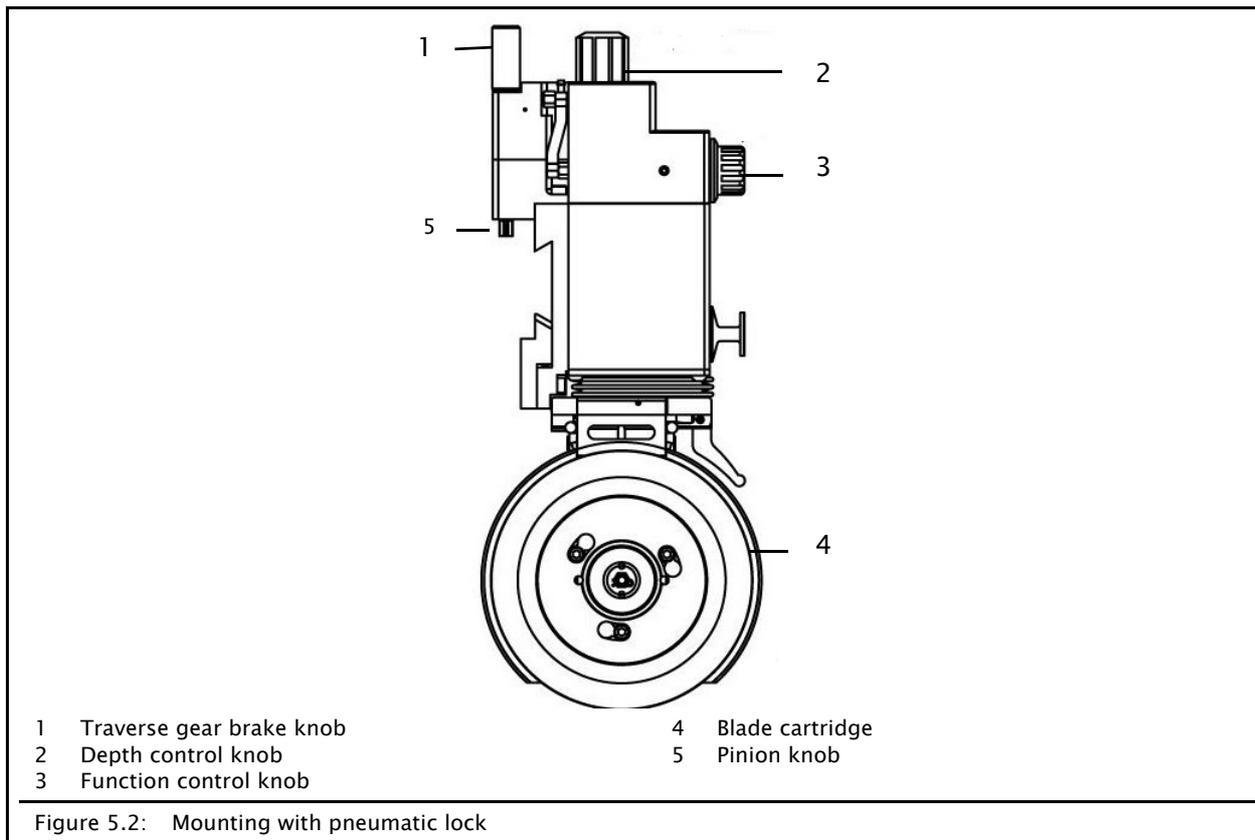
Note:

Keep knifeholders and blade cartridges free of dust and debris during operation. Maintenance schedule is dependent upon machine environment.

Mounting

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. Turn the function control knob to the red (retract) position.



Note:

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

2. Lift the traverse gear brake knob. Knifeholder is ready to move.
3. **For first time operation or for use with a new full diameter blade, adjust the depth control knob to one-half its total stroke.**
4. Manually slide the knifeholder along the guide bar until the top blade is close to the anvil ring and almost touches it (about 6mm lateral gap between the top blade and the anvil ring).



⇒ Ensure that the top blade is not directly over the anvil ring in order to prevent damage by collision when you continue with the setup (point 5).

Setup

5. Turn the function control knob to the yellow position to extend the blade cartridge.
6. Turn the traverse gear brake knob to move the knifeholder along the guide bar until the top blade and the anvil ring just touch.
7. Press down on the traverse gear brake knob to lock the knifeholder to the guide bar. Make sure that the knifeholder remains perpendicular to the guide bar and that the top blade and anvil ring make contact.
8. Observe overlap of top blade and anvil ring.
If the overlap is correct — 0,8mm (0,030") — , the knifeholder is ready to slit: go to Step 10.
If the overlap is incorrect, go to the next step to make adjustments (Some materials require a smaller or larger overlap).



Note:

All depth control adjustments must be made in the red (retract) position.

9. Turn the function control knob to the red position (retracted), before starting to adjust the blade overlap.
 - To increase the overlap, turn the depth control knob counterclockwise.
 - To decrease the overlap, turn the depth control knob clockwise.



Note:

One **click** increases or decreases the overlap **0,1 mm** (0,004").
One **complete turn** increases or decreases the overlap **0,1 mm** (0,04").

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



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.

Operation

10. When overlap is correct,

- turn function control knob to the red (retract) position, if necessary, to retract the blade cartridge,
- then turn it to the green position (run), extending the blade cartridge.
- The knifeholder is ready to slit.

6 MAINTENANCE

Preventive maintenance



WARNING

Sharp blades cause cutting injuries to hands and arms !

⇒ During any work at the Knifeholder always wear cut resistant protective gloves, in addition to personal protective equipment!

This recommended maintenance schedule is dependent upon machine use and environment.

- Keep anvil rings and top blades clean and balanced.
- Do not use oil lubricants in knifeholder. Oil lubricants may cause the knifeholder to function improperly. Use only those lubricants recommended in this assembly / Operating instructions.

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.
- Check hose connections to the knifeholders for leaks or cracks.
- DO NOT IMMERSE knifeholders in solvents. Wipe the outer surfaces with a clean, dry rag.



Caution

Danger to the eyes.

⇒ When working with compressed air, wear appropriate eye protection.

Weekly

- Check knifeholder air pressure. Knifeholder air pressure requirements: 28 Liters/Minute at 4,1 – 6,2 bar.
- Use compressed air to remove dust build-up from the blade cartridge

- Check hose connections to the knifeholders for leaks or cracks.
- Inspect control body dovetail assembly o-rings. Replace if damaged or missing.
- Check function of automatic half stroke to the blade cartridge.

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.

Every 6 months

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



Note:

Even if no defects are found, the pneumatic hose lines must be replaced at the latest after 6 years.

Recommended tools and supplies

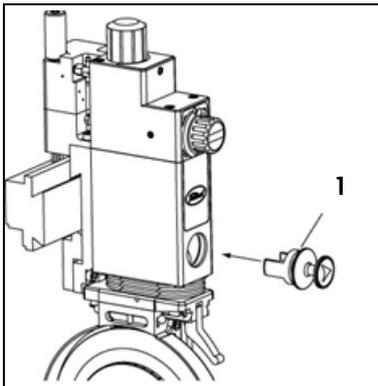
- Dow Corning Molykote® 557 Silicone Dry Film Lubrication
- Parker Super O-lube O-ring Lubricant (no substitutes)
- Hex key wrenches, metric
- 9" hex key wrench, 2 mm

Guide bar

Periodically wipe the guide bar clean and lubricate with a silicone dry film lubricant.

Fife-Tidland GmbH recommends using *Dow Corning 557 Silicone Dry Film* or comparable lubricants. The regular cleaning of the guide bar assures smoother knifeholder movement.

Cant key – O-Ring



1 O-ring

Figure 6.1: Cant key o-ring

If the cant key becomes loose in the body or if cracks in the o-ring (1) are visible, replace the o-ring.

Replacing the o-ring

1. Pull the cant key 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. Lubricate the new o-ring and the cant key o-ring groove. Use only *Parker Super O-Lube* (no substitutes).
4. Push the new O-ring into the groove of the cant key without damage.
5. Select the correct arrow orientation
→ [Orientation, page 3-6](#).
6. Push the cant key straight into the control body.

Mounting and dismounting of the blade cartridge



WARNING

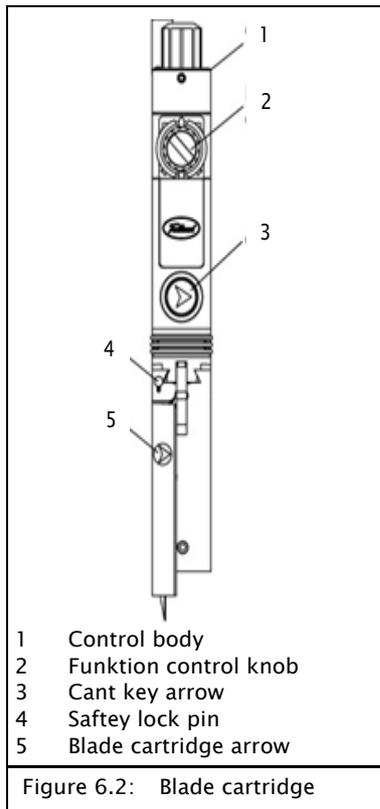
Sharp blades cause cutting injuries to hands and arms !

⇒ During any work at the Knifeholder always wear cut resistant protective gloves, in addition to personal protective equipment!

Dismounting of the blade cartridge

1. Turn the function control knob to the red position.
2. Pull the clamp lever up to unlock the blade cartridge.
3. Press and hold down the safety lock pin and slide the blade cartridge off the control body.

Mounting of the blade 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. Pull the lock lever down to lock the blade cartridge to the control body.
4. Confirm that the arrow on the blade cartridge is pointing in the same direction as the arrow on the cant key.

Reversing the blade cartridge

1. Remove the blade cartridge , → [page 6-3](#).
2. Then slide the blade cartridge, rotated 180°, back onto the dovetail of the control body.
The safety lock pin will 'snap' into place when the blade cartridge is in the correct position.
3. Pull the clamp lever down to lock the blade cartridge to the control body.
4. 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,
→ [Orientation, page 3-6](#).

Mounting and dismounting of the top blade



WARNING

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WARNING

Keep hands away from moving knifeholder parts.

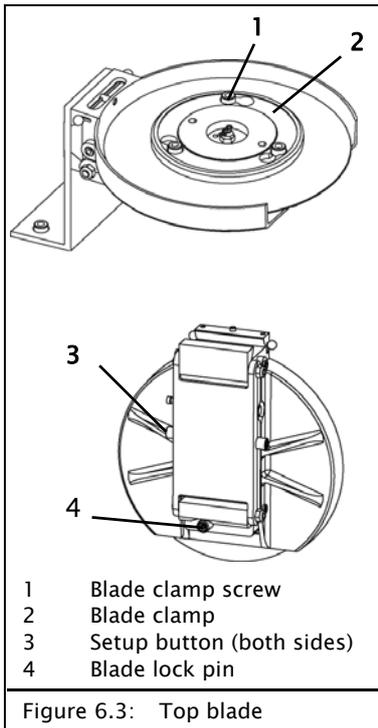
⇒ potentially leading to the severest of injuries.



Note:

Mount the blade cartridge to a Tidland bench fixture for ease and safety of blade removal.

Dismounting top blade



1. Remove the blade cartridge , → [page 6-3](#).

2. Press the blade lock pin and rotate the blade clamp until it stops. Keep the blade lock pin pressed all the time.

3. Loosen the three blade clamp screws.

4. Rotate the blade clamp counterclockwise and slide it off the blade hub when the clearance holes are aligned with the blade clamp screw heads.

5. Remove the top blade.

Mounting top blade

1. Make sure the blade cartridge is held securely.

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 top 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 1 : 1,0 Nm
 - Class 2, 3: 5,1 Nm
6. Reinstall the blade cartridge onto the dovetail,
→ [page 6-3](#).

Regrinding knives and surface quality



WARNING

Sharp blades cause cutting injuries to hands and arms !

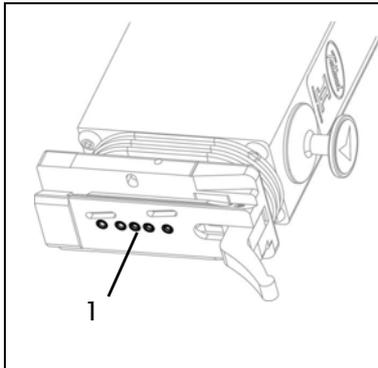
⇒ During any work at the Knifeholder always wear cut resistant protective gloves, in addition to personal protective equipment!



Note:

Observe the notes and work steps in the instructions of *MI4051, Blade grinding and Finishing*

Replacing the o-rings of the dovetail



1 O-rings

Figure 6.4: O-rings of the dovetail

- Visually inspect o-rings of the dovetail, if any of the o-rings are damaged or missing, they have to be replaced.

1. Remove the blade cartridge from the control body, → [page 6-3](#). The dovetail o-rings (1) are located on the underside of the control body dovetail.
2. Using a sharp object, such as a scratch or piercing awl, remove the damaged o-ring(s).
3. Completely clean out the o-ring pocket with rubbing alcohol.
4. Make sure the o-ring pocket is dry and is free from residues.
5. Use a toothpick to apply a small amount of LOCTITE® 480 to the pocket only.



Note:
Keep LOCTITE out of the air supply hole.

6. Push the new o-ring into the o-ring pocket by hand.

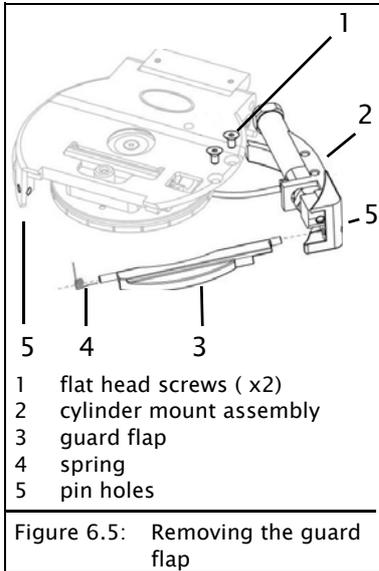


Note:
Make sure the o-ring is seated flat in the pocket.

7. Let the o-ring set for a minimum of one hour.
8. Apply a light film of Dow Corning 55 O-Ring Lube over each O-Ring.
9. Confirm that each o-ring hole is not plugged with LOCTITE.
10. Remount the blade cartridge , → [page 6-4](#).

360° Blade Guard – class 1

Removing the guard flap

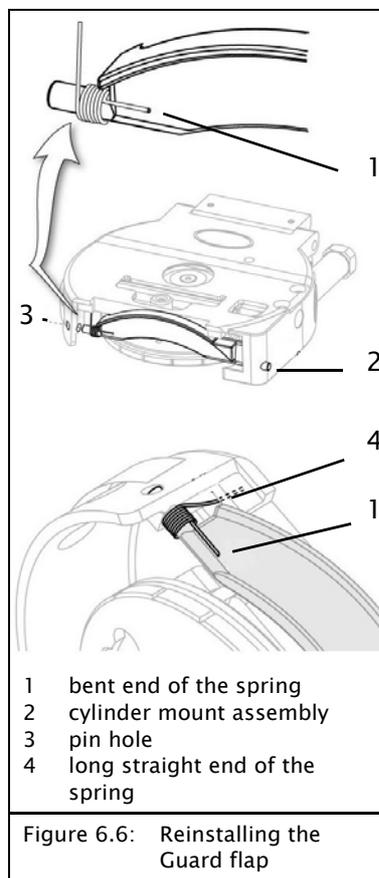


1. Disconnect the air supply to the knifeholder.
2. Remove the top blade from the blade cartridge.
3. Remove two flat head screws (1) from the blade cartridge body.
4. Slide the cylinder mount assembly (2) away from the cartridge body to detach the guard (3) and spring (4) from the pin holes (5).

Inspecting the parts

- Inspect spring; replace if broken.
- Clean blade cartridge thoroughly. Inspect pin holes for debris buildup. To reduce dust buildup and contamination, do not lubricate the pin holes.
- Inspect the guard and cylinder mount assembly for damage. Bent components may not function correctly.

Reinstalling the Guard flap



1. Orient the spring on the guard as shown.
2. Insert guard pivot pin into the pin hole in the cylinder mount block (2).
3. Insert the pivot pin at the other end of the guard into the mating pin hole (3).
4. Spring must be oriented as shown:
 - The bent end (1) is on the inside of the guard when in guarded position.
 - The long straight end (4) must bend up inside the interior wall of the blade cartridge in order to provide spring tension.
5. Connect the air supply and test guard operation before putting unit back into production.
6. Reinstall the top blade in the blade cartridge.

Dismounting the knifeholder



WARNING

Sharp blades cause cutting injuries to hands and arms !

⇒ During any work at the Knifeholder always wear cut resistant protective gloves, in addition to personal protective equipment!



WARNING

Keep hands away from moving knifeholder parts.

⇒ potentially leading to the severest of injuries.

Required Tools:

- Class 1: 2mm or 2.5mm hex wrench
Class 2: 4mm hex wrench
Class 3: 4mm and 5mm hex wrench
- *Parker Super O-lube O-ring Lubricant*

Dismounting with manual and pneumatic lock

1. Turn the function control knob to the RED position (retracted).
2. Disconnect air supply hose at the manifold.
3. Remove knifeholder from guide bar.
4. Remove blade cartridge from control body.
5. Place control body on workbench.
6. Remove gib by loosening and removing the two socket head cap screws.
7. Remove the guide bar mount assembly by loosening and removing the four socket head cap screws.
8. Guide Bar Mount (Manual Lock or Pneumatic Lock) disassembly is complete.

Removing the knifeholder with an *Easy Glider Mount* (Linear Bearing)

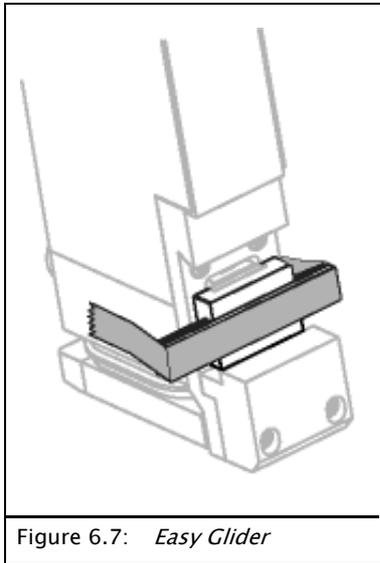


Figure 6.7: *Easy Glider*

1. Remove the blade cartridge.
2. Choose at which end of the guide bar the knifeholder will be removed; move the knifeholder just to the end of the fixed rail on the guide bar.
3. Locate and remove the screw from the end stop on the face of the guide bar.
4. 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.
5. 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.

Lubrication scheme and torques

Class 1

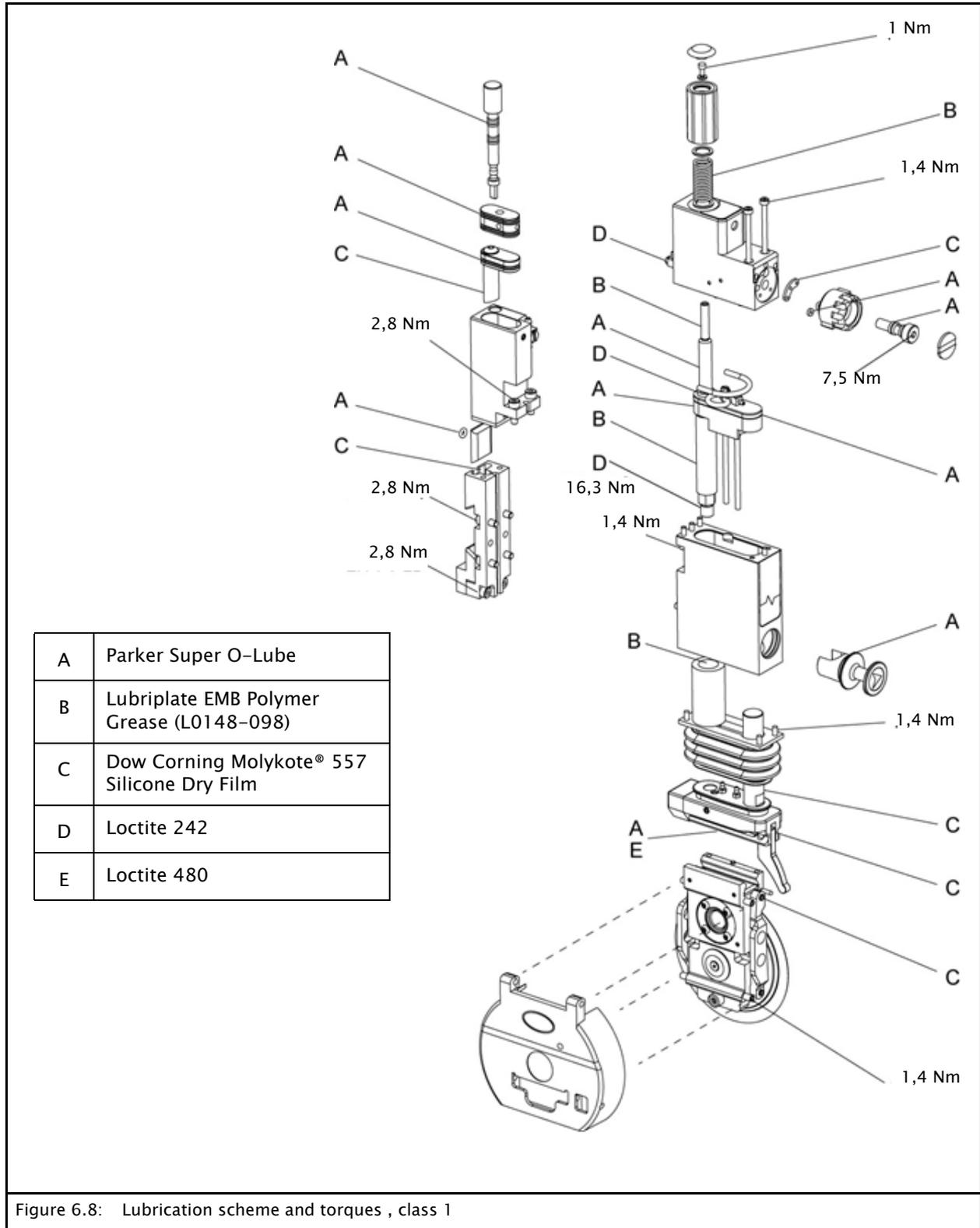
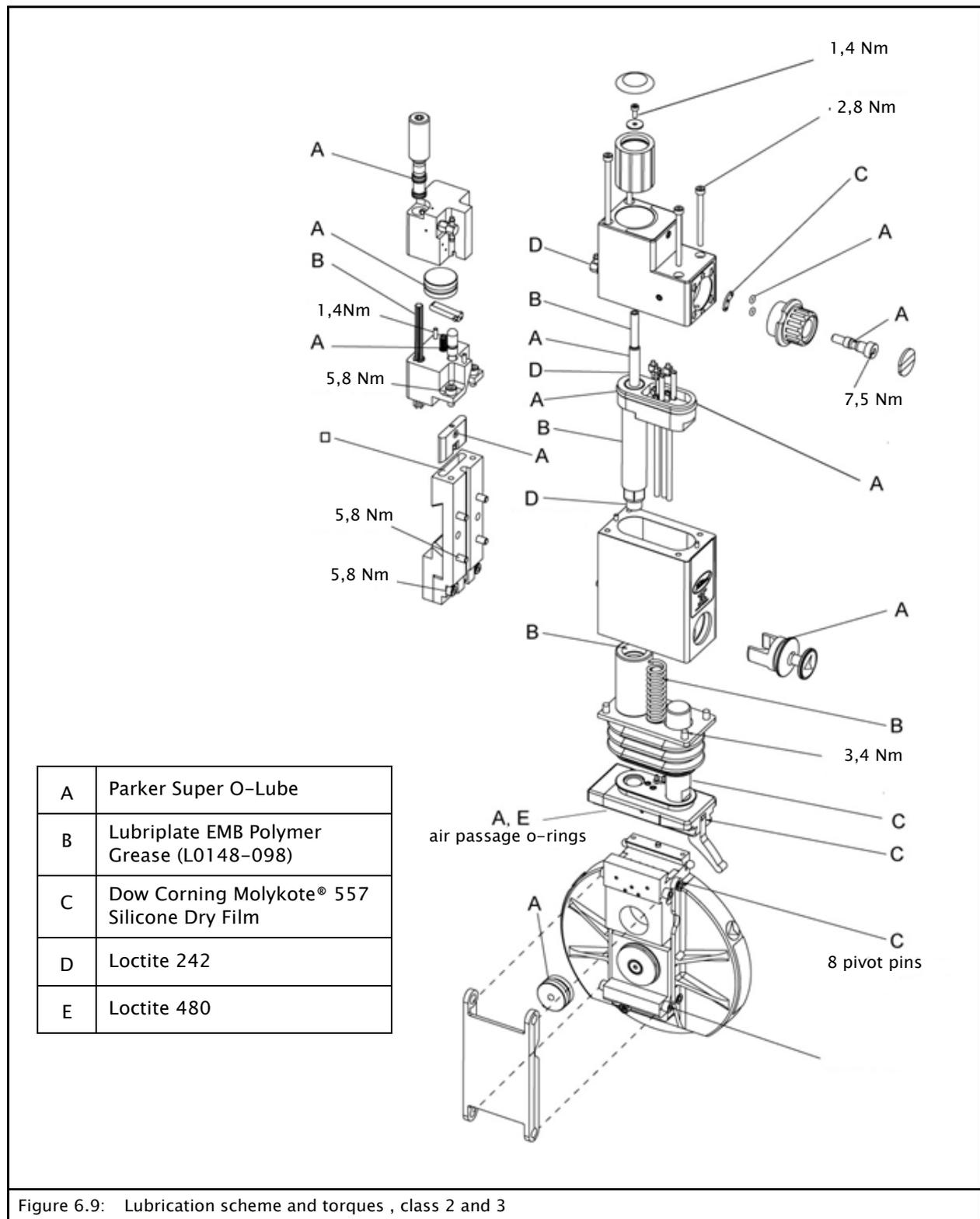


Figure 6.8: Lubrication scheme and torques , class 1

Class 2 and 3



Handling of the disassembly and maintenance



Note:

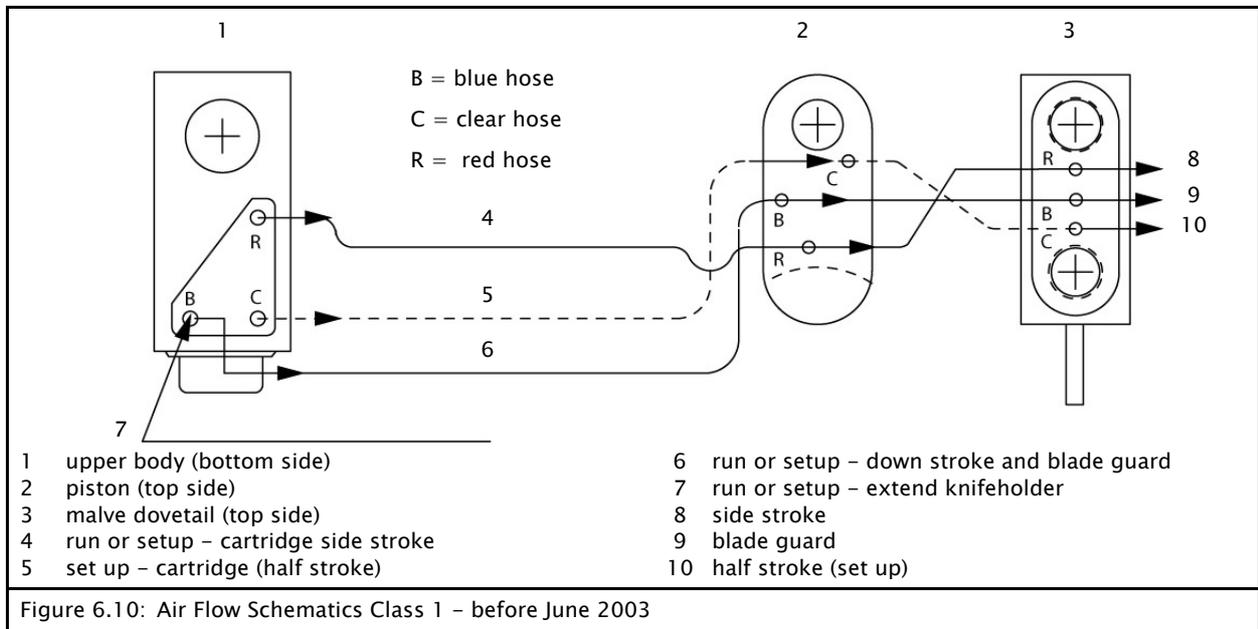
The disassembly instructions in this manual are for your safety and protection. They are a guide for selective sub-assembly inspection, maintenance and part replacement. Follow all instructions as written. To avoid warranty violations, consult with a Tidland Knifemaker Service Technician for any disassembly not covered in this publication.

Air Flow Schematics

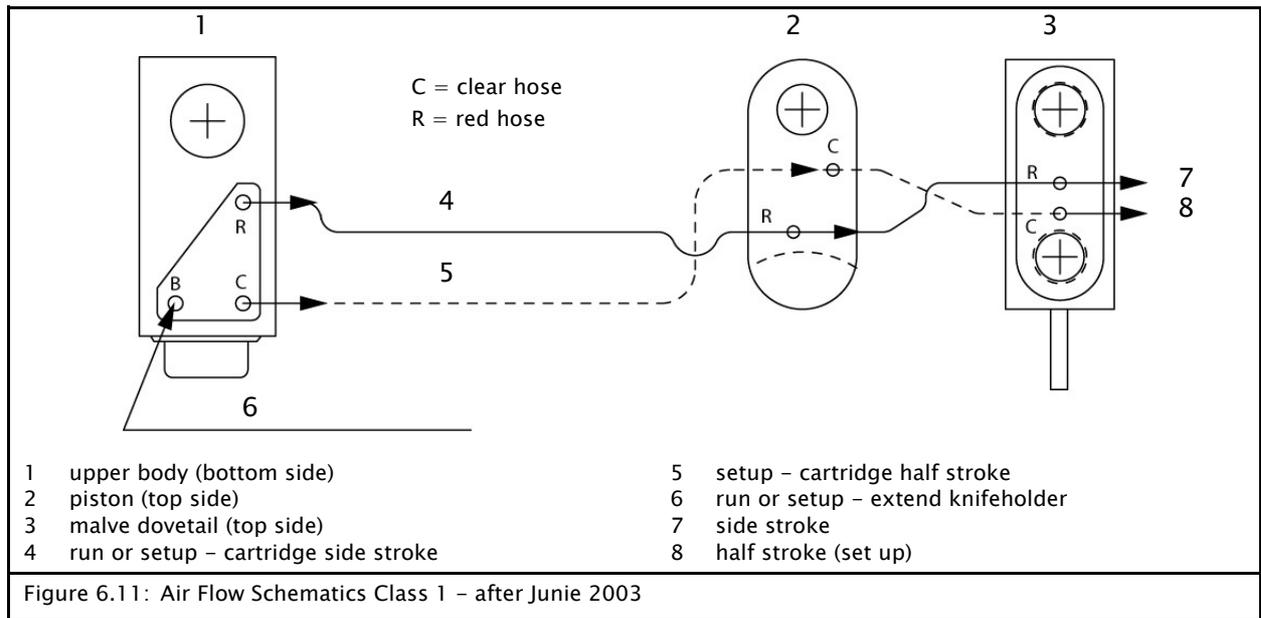
Before beginning any disassembly, refer to the chart below to match your knifemaker model with the correct Air Flow Schematic. Lift the knifemaker bellows to see the hose layout for your model. Use the appropriate figure of your hose number.

class 1	before 06/2003	3 hoses	fig. 6.10
	after 06/2003	2 hoses	fig. 6.11
	after 09/2010	2 to 3 hoses	fig. 6.12
class 2		3 hoses	fig. 6.13
class 3		3 hoses	fig. 6.13

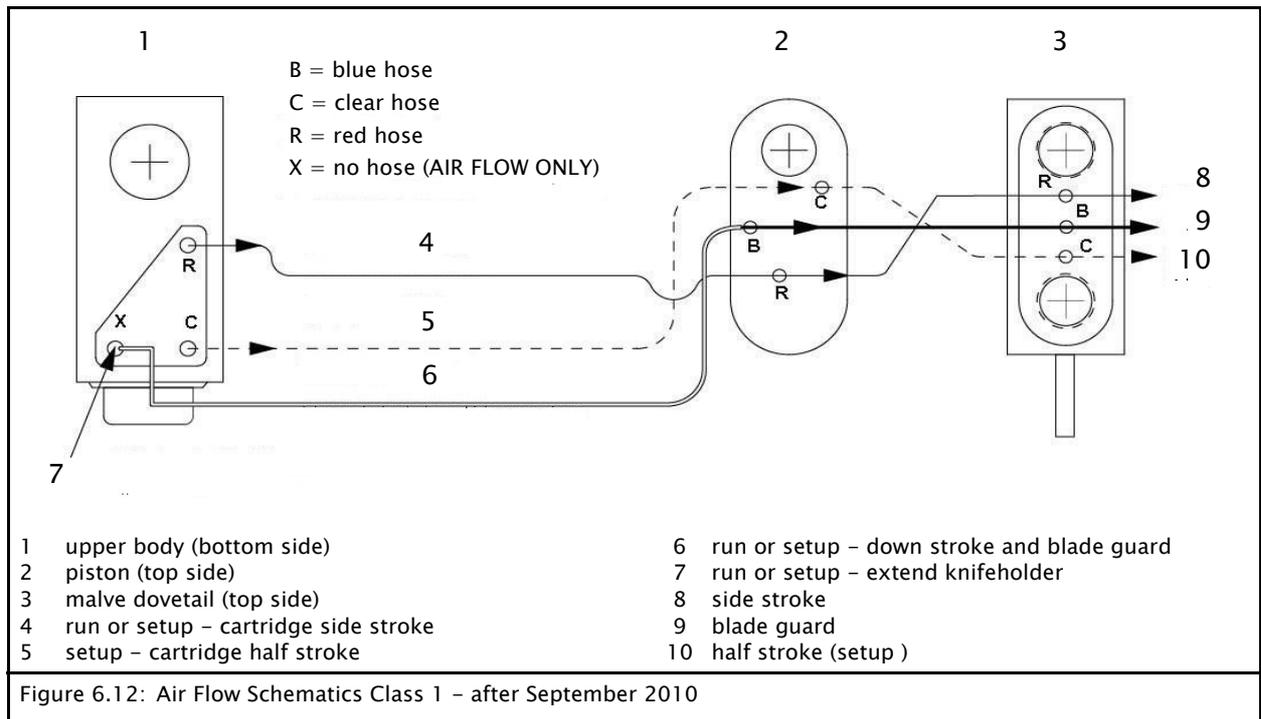
Class 1 (before June 2003)



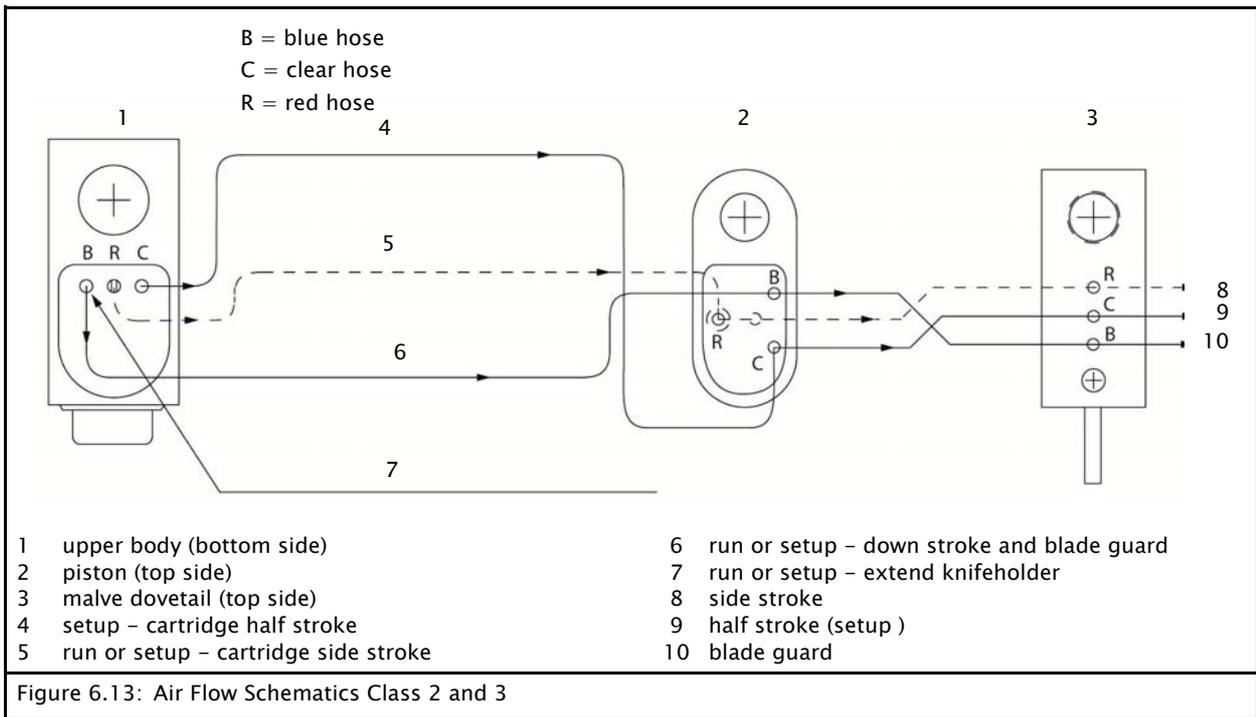
Class 1 (after June 2003)



Class 1 (after Sept. 2010)

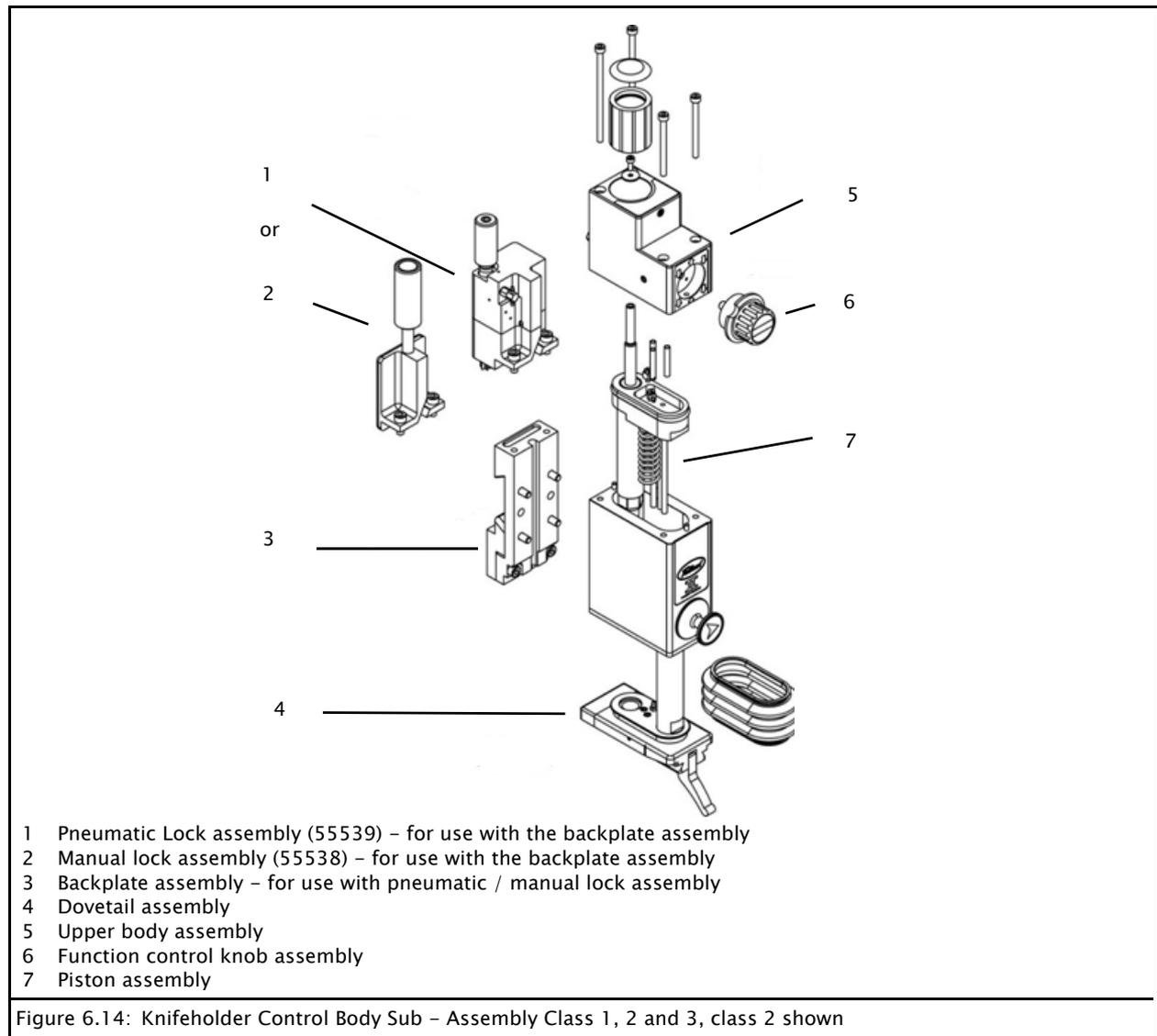


Class 2 and 3



Knifeholder Sub-Assembly

Class 1, 2 and 3



Control body –Sub–Assemblies identification	Class 1	Class 2	Class 3
Guide bar mount assembly (Manual Lock)			
Manual Lock assembly	555538	544156	544156
Backplate assembly	550708	550709	550710
Guide bar mount assembly (Pneumatic Lock)			
Pneumatic Lock Assembly	555539	550707	550707
Backplate assembly	550708	550709	550710
Dovetail assembly	524970	528797	529514
Upper body assembly	536437	531133	535900
Piston assembly	536439	530353	535902
Function control knob assembly	536436	530354	530354
Lower body assembly	536438	531132	535901

Guide Bar Mount Assembly

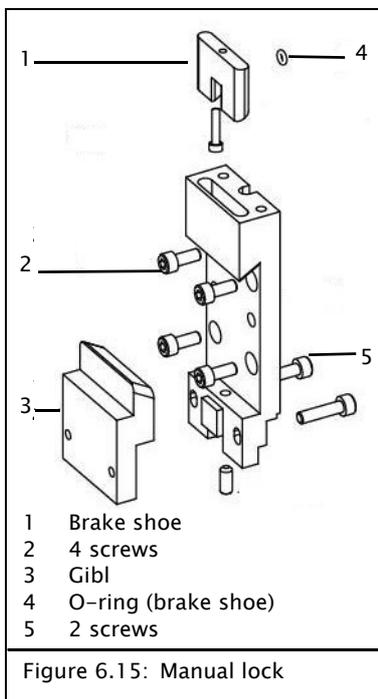
Required Tools:

- Class 1: 2mm or 2.5mm hex wrench
- Class 2: 4mm hex wrench
- Class 3: 4mm and 5mm hex wrench
- *Parker Super O-lube O-ring Lubricant*

Dismounting for manual lock

1. Disconnect air supply hose at the manifold.
2. Remove knifeholder from guide bar, → [page 6-7](#).
3. Remove blade cartridge from control body, → [page 6-3](#).
4. Place control body on workbench.
5. Remove gib by loosening and removing the two socket head cap screws.
6. Remove the guide bar mount assembly by loosening and removing the four socket head cap screws.
7. Guide Bar Mount (Manual Lock) disassembly is complete.

Mounting for 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 1 (M4) 2,9Nm
 - Class 2 (M5) 5,8Nm
 - Class 3 (M6) 9,9Nm
2. Place the control body on the guide bar and reinstall the gib with two socket head cap screws. Tighten fasteners to the appropriate torque value:
 - Class 1 (M4) 2,9Nm
 - Class 2 (M5) 5,8Nm
 - Class 3 (M5) 5,8Nm
3. Reinstall blade cartridge on control body.

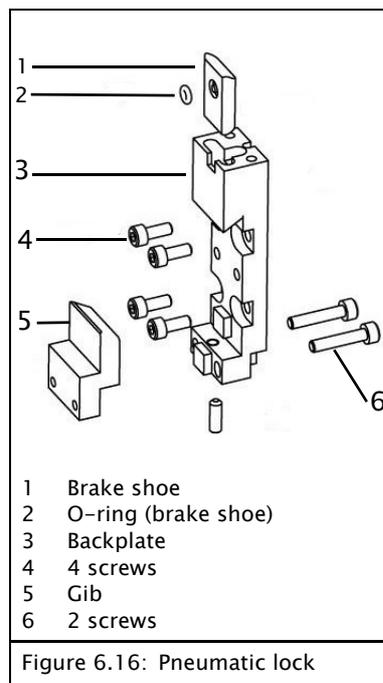
Recommended Maintenance

- 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*, → [figure 6.15](#).

Dismounting for pneumatic lock

1. Disconnect air supply hose at the manifold.
2. Remove knifeholder from guide bar, → [page 6-9](#).
3. Remove blade cartridge from control body, → [page 6-3](#).
4. Place control body on workbench.
5. Remove gib by loosening and removing the two socket head cap screws.
6. Remove the guide bar mount assembly by loosening and removing the four socket head cap screws.
7. Guide Bar Mount (Pneumatic Lock) disassembly is complete.

Mounting for pneumatic lock



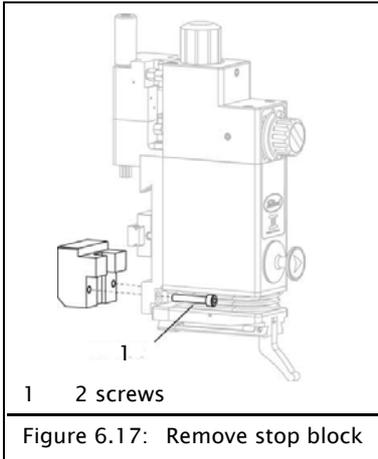
1. Reinstall the guide bar mount assembly on the control body and tighten four socket head cap screws to the appropriate torque value:

Class 1	2,9Nm
Class 2 (M5)	5,8Nm
Class 3 (M6)	9,9Nm
2. Place the control body on the guide bar and reinstall the gib with two socket head cap screws. Tighten to appropriate torque value:

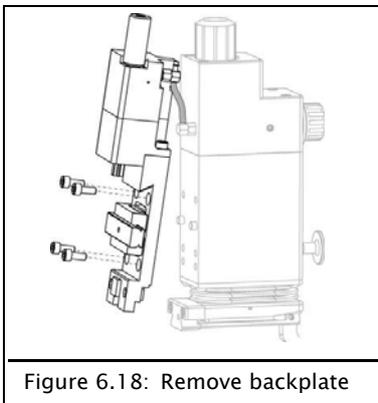
Class 1	2,9Nm
Class 2 (M5)	5,8Nm
Class 3 (M5)	5,8Nm
3. Reinstall blade cartridge on control body.

Recommended Maintenance

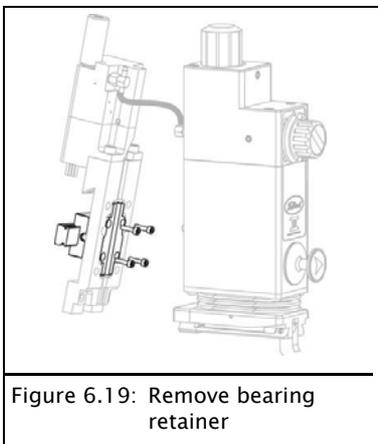
- If the brake shoe becomes lodged inside the body mount, remove the brake shoe.
- Wipe off and lubricate the brake shoe o-ring with *Parker Super O-Lube*, → [fig. 6.16](#).

Dismounting *Easy Glider*

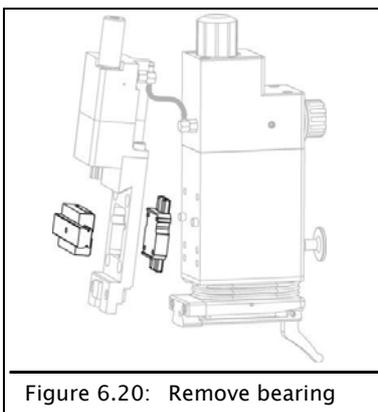
1. Remove the screws of the stop block with a 4 mm hex wrench.



2. Remove the 4 screws in the backplate with a 4 mm hex wrench.
3. Gently pry the backplate assembly from the control body .
4. Then remove the screws from the carriage.



5. Remove the 4 screws in the bearing retainer.



6. The bearing is free to remove.
7. Reassemble the knifeholder with the new bearing.

Dovetail Assembly

Recommended Tools:

- 2mm or 2.5mm hex wrench
- Small flat blade screwdriver
- Small needlenose pliers
- External air supply to extend knifeholder
- thin open end wrench

Class 1	10mm
Class 2	16mm
Class 3	26mm

Dismounting the Dovetail Assembly



Note:

It is not necessary to remove the dovetail assembly from the control body to replace the o-rings that interface with the blade cartridge.

1. Disconnect air supply hose at the manifold.
2. Remove knifeholder from guide bar, → [page 6-9](#).
3. Remove blade cartridge from control body, → [page 6-3](#).
4. Place control body on workbench.
5. Make sure that the Function Control Knob is in the RED (RETRACT) position.
6. Using small flat blade screwdriver, carefully pry off and remove depth control knob cap.
7. Remove the locking cap screw and washer from inside the depth control knob.
8. Remove depth control knob by hand, rotating counterclockwise.
 - Class 1:
Remove the depth control spring and two flat washers; go to Step 9
 - Class 2/3:
Spring not accessible; go to Step 9.
9. Extend the knifeholder:
 - Class 1:
No air supply needed. By hand, pull the dovetail assembly out of the control body
 - Class 2 / 3:
With external air supply set at approximately 2 bar and the setup knob in the YELLOW (SETUP) or GREEN (RUN) arrow position, extend the dovetail assembly.
10. Lift or remove the bellows.
11. Mark the location of the colored hoses for your model, → ["Air Flow Schematics"](#).

12. Using small needlenose pliers, detach the hoses from the air supply fittings mounted to the dovetail.



Note:

Grab hose firmly above (not on) fittings and pull off, being careful not to rupture the hoses.



Note:

Class 2 and 3, Air will flow from the disconnected hoses.

13. With the dovetail assembly extended, place an open-end wrench on the flats of the piston guide rod and turn counterclockwise to loosen it completely from the dovetail.



Note:

Use care so as not to damage the air supply fittings.



Note:

It is not necessary to remove the guide bar of the cant key from the dovetail assembly.

14. Retract the piston guide rod after dovetail assembly removal is complete

Class 1:

Push piston guide rod by hand.

Class 2 and 3:

Turn function control knob to RED (retract) position to retract the piston guide rod.

Mounting the dovetail assembly

1. Extend the piston guide rod of the control body.

Class 1:

Without air supply extend the piston guide rod by hand.

Class 2 and 3:

Extend the piston guide rod using the function control knob knob in the yellow (setup) or green (run) position.

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 1	16,3Nm
Class 2	47,4Nm
Class 3	94,9Nm

4. Reinstall the air hoses as shown on the Air Flow Diagram.
5. Replace the bellows.
6. Class 1:
With the function control knob in the red (retract) position, push the dovetail assembly into the lower body and reinstall the flat washers, return spring and depth control knob.

Class 2 and 3:

With the hoses connected and the bellows in place, turn the function control knob to the red (retract) position.

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 1 1,0Nm
Class 2/ 3 1,4Nm
8. Reinstall the depth control knob cap.
9. Verify blade cartridge half and full stroke functionality before using the knifeholder for operation.

Upper Body and Piston Assemblies – class 1

Recommended Tools :

- 2.5mm hex wrench
- *Parker Super O-Lube O-ring Lubricant*
- *Lubriplate EMB Polymer Grease (L0148-098)*



Note:

The upper body and piston assemblies are connected together with three hoses. Be careful not to disconnect, rupture or loosen these connections.

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)*.

Dismounting Upper body and piston, class 1

1. Disconnect air supply hose at the manifold.
2. Remove control body from guide bar, → [page 6-9](#).
3. Remove blade cartridge from control body, → [page 6-3](#).
4. Place control body on workbench.
5. Remove dovetail assembly, → [page 6-20](#).
6. Remove guide bar mount assembly with pneumatic lock , → [page 6-18](#). Removal of guide bar is not required with manual lock.
7. Remove four socket head cap screws that attach upper and lower bodies to each other.
8. Lay control body flat on one side and carefully push (toward upper body) the piston guide rod into and through the guide rod bushing. This allows simultaneous removal of both the upper body and piston assemblies from the lower body.
9. Disassembly is complete.

Mounting Upper body and piston, class 1

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.



Note:

When guiding the piston guide rod thru the bushing be careful not to trap or kink the hoses attached to the lower side of the piston.

3. Secure the upper body with the cylinder head screws and torque 1.4 Nm on the lower body.
4. Extend the piston assembly by pulling out the piston guide rod. Ensure that the attached air hoses are protruding through the lower body.
5. Attach the dovetail assembly, → [page 6-21](#).
6. Reassemble the guide bar mount with pneumatic lock assembly.
7. Attach the air supply hose and blade cartridge.
8. Verify blade cartridge half and full stroke functionality before reinstalling the unit for operation.

Lower Body Assembly, class 1

Recommended Tools:

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

Recommended Maintenance

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

Dismounting Lower body, class 1

1. Disconnect air supply hose at the manifold.
2. Remove knifeholder from guide bar, → [page 6-9](#).
3. Remove blade cartridge from control body, → [page 6-3](#).
4. Place control body on workbench.

5. Remove dovetail assembly, → [page 6-20](#).
6. Remove guide bar mount with pneumatic lock assembly , → [page 6-18](#). Removal of guide bar is not required with manual lock.
7. Remove upper body and piston assemblies, → [page 6-23](#).
8. Loosen the four screws.
9. Remove the retainer flange.
10. Remove piston guide rod bushing if replacement is necessary.



Note:

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

11. Disassembly is complete.

Mounting Lower body, class 1

1. Replace the piston guide rod bushing into the lower body and fasten the flange retainer in place with the four screws.
2. Carefully insert the upper body and piston assemblies into the lower body assembly, → [page 6-24](#).
3. Reassemble the dovetail assembly, → [page 6-21](#).
4. Reassemble the guide bar mount with pneumatic lock assembly, → [page 6-18](#).
5. Reinstall the blade cartridge, → [page 6-4](#).
6. Attach the air supply hose.
7. Verify cartridge half and full stroke functionality before reinstalling the unit for operation.

Upper Body, Lower Body and Piston Assemblies, class 2 and 3

Recommended Tools:

- Class 2: 3mm hex wrench
- Class 3: 4mm hex wrench
- *Parker Super O-Lube* O-ring Lubricant
- *Lubriplate EMB Polymer Grease (L0148-098)*



Note:

The Upper Body and Piston assemblies are connected together with three hoses. Be careful not to disconnect, rupture or loosen these connections.

Recommended Maintenance

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

Dismounting Upper Body, Lower Body and piston , class 2 and 3

1. Disconnect air supply hose at the manifold.
2. Remove knifeholder from guide bar, → [page 6-9](#).
3. Remove blade cartridge from control body, → [page 6-3](#).
4. Place control body on workbench.
5. Remove dovetail assembly, → [page 6-20](#).
6. Remove guide bar mount with pneumatic lock assembly, → [page 6-18](#). Removal of guide bar is not required with manual lock.
7. Carefully remove the retainer flange and spring.



Note:

The flange retainer is under spring pressure. Hold the flange retainer firmly to the lower body when removing the four fasteners.

8. Remove the four socket head cap screws that attach the upper and lower bodies to each other.

9. Lay control body flat on one side and carefully push (toward upper body) the piston guide rod into and through the guide rod bushing . This allows simultaneous removal of both the upper body and piston assemblies from the lower body.

10. Upper Body, the Lower Body and Piston disassembly is complete.

Mounting Upper body, Lower body and piston assemblies, class 2 and 3

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.
3. Secure the upper body to the lower body with fasteners and tighten to the appropriate torque value of 2,9Nm (class 2) or 5,8Nm (class 3).
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.



Note:

When guiding the piston guide rod thru the bushing be careful not to trap or kink the hoses attached to the lower side of the piston.

5. Reinstall and 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.
6. Reinstall the depth control knob cap.
7. Apply and regulate air pressure to approximately 2 bar (30PSI).
8. Extend the piston guide rod by placing the function control knob in the YELLOW or GREEN arrow position.
9. Install the dovetail assembly, → [page 6-21](#).
10. Reinstall the guide bar mount with pneumatic lock assembly.
11. Reinstall blade cartridge.
12. Attach air supply hose.
13. Verify blade cartridge half and full stroke functionality before using the knifeholder for operation.

Function Control Knob Assembly

Recommended Tools:

- Small flat screwdriver
- 4mm hex wrench
- *Parker Super O-Lube O-Ring Lubricant*

Recommended Maintenance

- Inspect the o-rings on the function control knob bolt for cracks or chips and replace if necessary.

Dismounting function control knob

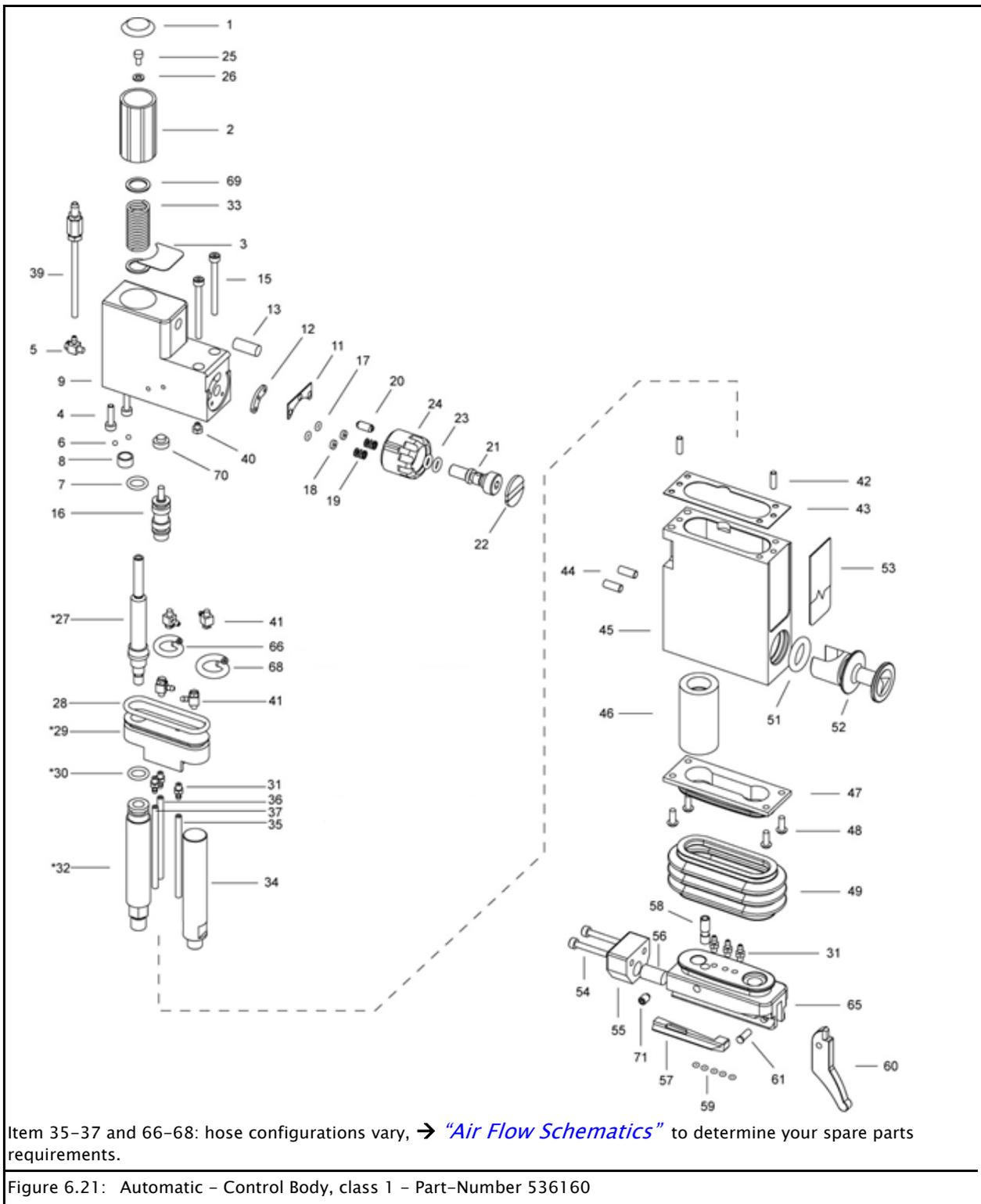
1. Disconnect air supply hose at the manifold.
2. Remove knifeholder from guide bar, → [page 6-9](#) .
3. Remove blade cartridge from control body, → [page 6-3](#).
4. Lay the control body on its backside on workbench.
5. Rotate the function control knob to the RED arrow position.
Note: The function control knob disc should be at approximately the 10:00 position
6. Remove the function control knob disc using a small flat blade screwdriver.
7. Pry off the disc carefully – part is reusable.
8. Hold the function control knob firmly in the RED position to keep it from rotating while removing the function control knob bolt. Turn the bolt counterclockwise to remove.
9. Carefully lift out the function control knob assembly: Note that it is in the RED position.
10. Function Control Knob disassembly is complete.

Mounting function control knob

1. Apply a light coat of *Parker Super O-Lube* to the o-rings before reassembly.
2. Ensure the function control knob is in the same RED (RETRACT) position as when it was removed in step 9.
3. Hold function control knob firmly in position while reinstalling the bolt.
4. Tighten the bolt to 7.5 Nm for Class 1, 2 and 3.

Lists of Spare Parts

Control body, class 1

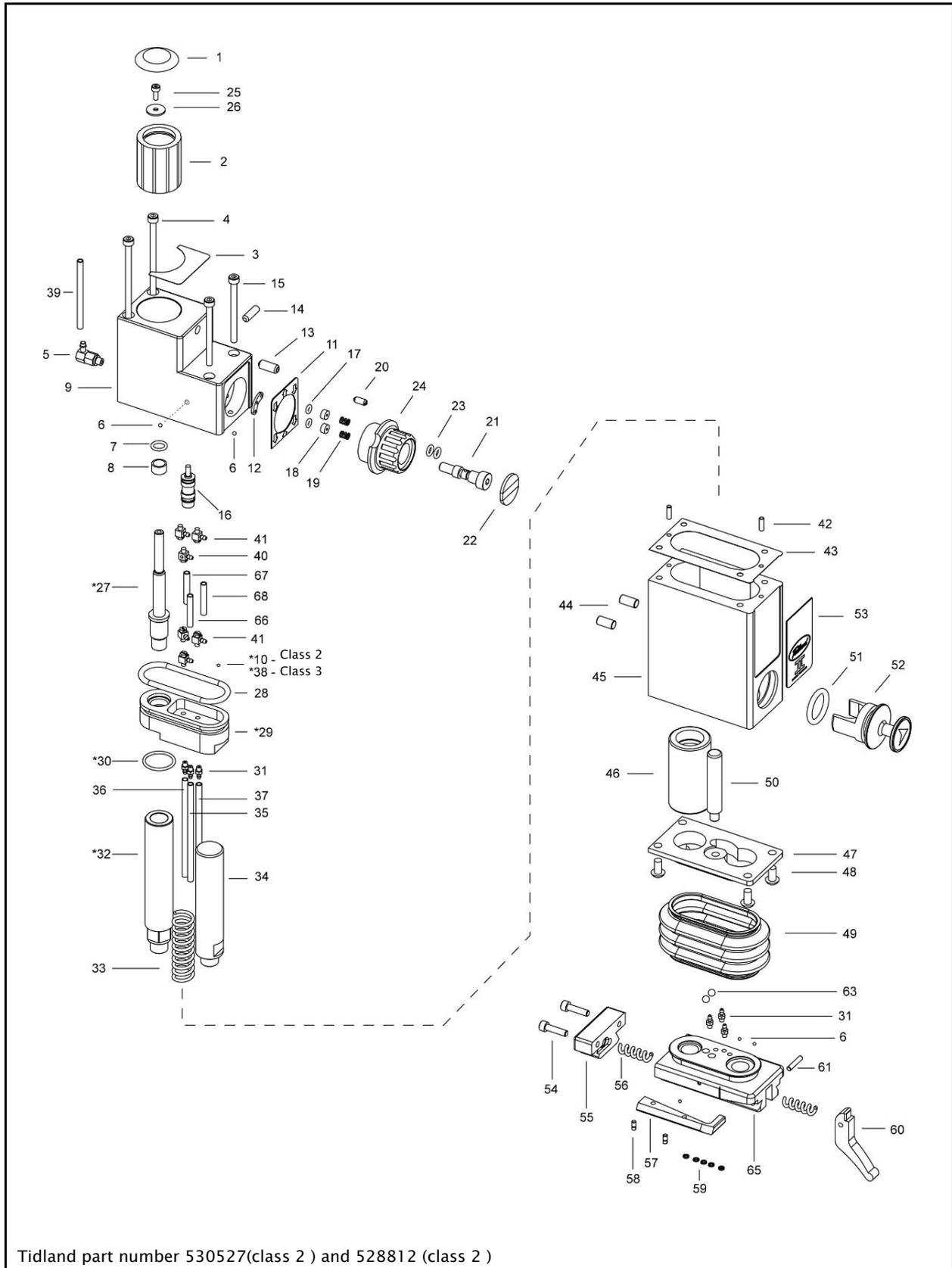


* Tidland recommends that these parts be ordered as the piston sub-assembly.

Item	Description	Part-Number	Qty	Item	Description	Part-Number	Qty
1	Depth Knob Cap	536161	1	38	n/a	n/a	
2	Depth Control Knob	535334	1	39	Hose Assembly	561042	1
3	Depth Control Label	548612	1	40	Air fitting	541607	1
4	Socket Head Cap Screw	133180	2	41	Air fitting	528697	4
5	Air Fitting	528697	1	42	Dowel pin	549542	2
6	Steel ball	554256	2	43	Gasket	524999	1
7	Valve O-ring	126119	1	44	Dowel Pin	545123	1
8	Stroke Stop Rod Bushing	524998	1	45	Lower Body	524974	1
9	Upper Body	563963	1	46	Piston Guide Rod Bushing	524977	1
10	n/a	n/a	n/a	47	Retainer Flange	524981	1
11	Upper Body Label	524993	1	48	Button Head Cap Screw	132371	4
12	Function Detent Pad	528779	1	49	Bellows	535074	1
13	Detent	528781	1	50	n/a	n/a	n/a
14	n/a	n/a	n/a	51	O-Ring (cant key)	126112	1
15	Socket Head Cap Screw	536168	2	52	Cant key	call	1
16	3-Way-Valve	528783	1	53	Label (Lower Body)	536508	1
17	O-Ring (set up knob bolt)	130827	2	54	Socket Head Cap Screw	536171	2
18	Bushing	524992	2	55	Stop Plate	526354	1
19	Spring	130133	2	56	Spring	530189	1
20	Detent	528780	1	57	Wedge Lock	524972	1
21	Function Control Knob Bolt	563953	1	58	Guide Pin	535236	2
22	Function Control Knob Disc	536468	1	59	O-Ring	536170	5
23	O-ring	126443	2	60	Clamp Lever	526355	1
24	Function Control Knob	524991	1	61	Pivot Pin	561986	1
25	Socket Head Cap Screw	536165	1	62	n/a	n/a	n/a
26	Flat Washer	590063	1	63	n/a	n/a	n/a
27	Stroke Stop Rod	534810	1	64	n/a	n/a	n/a
28	O-Ring (piston)	536164	1	65	Dovetail	560569	1
29	Piston	524994	1	66	Air Hose (coiled, red)	525000	1
30	O-ring (Piston)	126119	1	67*	Air Hose (coiled, blue)	536163	1
31	Air fitting	530101	6	68	Air Hose (coiled, clear)	561517	1
32	Piston Guide Rod	560523	1	69	Flat Washer	525004	2
33	Return Spring	537767	1	70	Valve Cap	524979	1
34	Cant Key Guide Rod	560495	1	71	Set screw	134011	1
35	Air hose (clear)	536162	1				
36	Air hose (red)	535153	1				
37	Air hose (blue)	132556	1				

* Item 67 – Used only on knifeholders manufactured before June 2003. See *"Air Flow Schematics"*.

Control Body, class 2 & 3



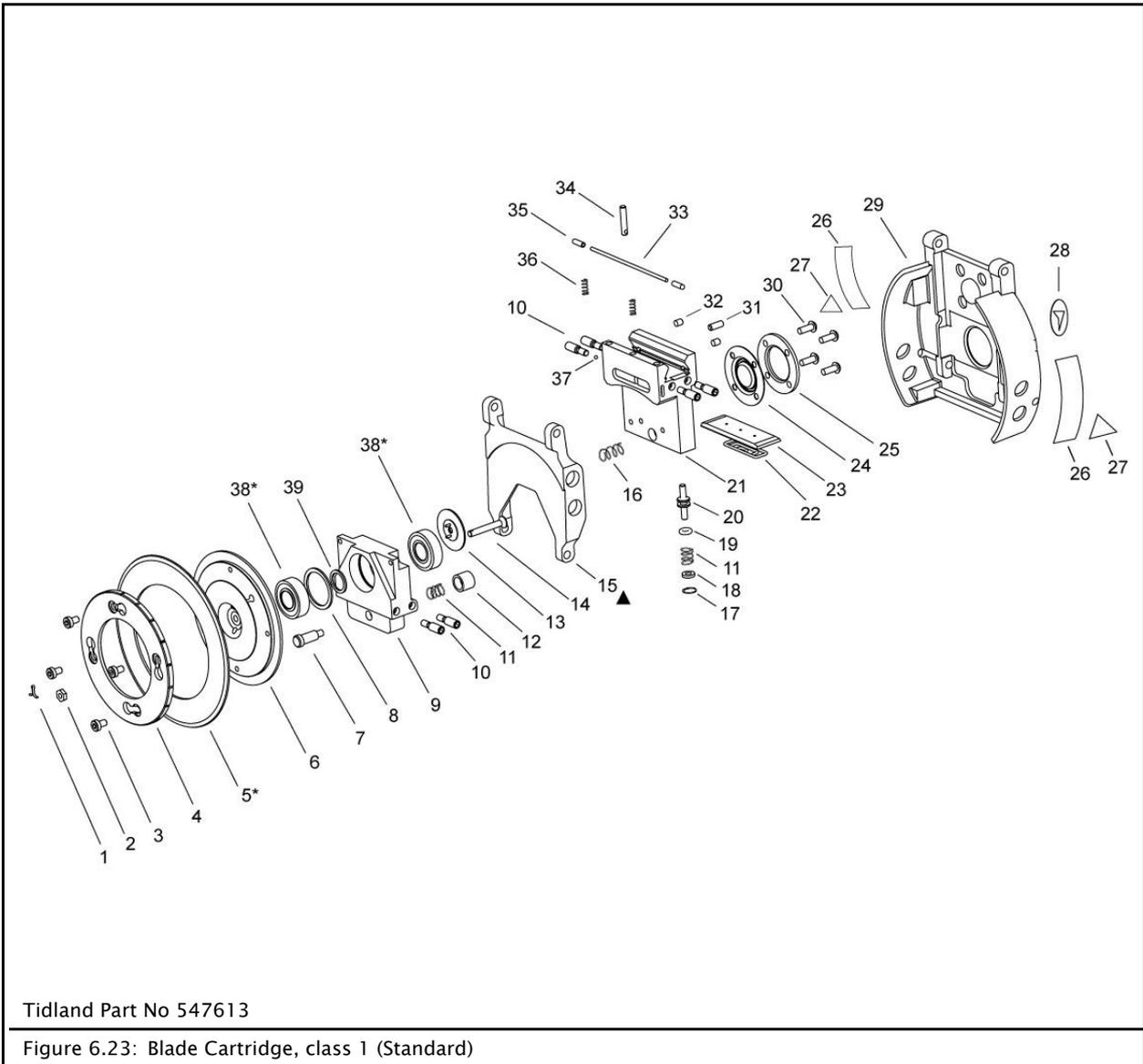
* Tidland recommends that these parts be ordered as the piston sub-assembly.

Part number 530527 (class 2) and 528812 (class 3)

Item	Description	Class 2	Qty	Class 3	Qty	Item	Description	Class 2	Qty	Class 3	Qty
1	Depth Control Knob Cap	530186	1	530186	1	38	Steel ball, 2mm	n/a		557259	1
2	Depth Control Knob	530536	1	530536	1	39*	Hose Assembly	128898	1	128898	1
3	Depth Control Label	548629	1	548637	1	40	Air Fitting	530351	1	530351	1
4	Socket Head Cap Screw	531127	2	130144	2	41	Air Fitting	528697	5	528697	5
5	Air Fitting	251535	1	251535	2	42	Dowel Pin	549542	2	549542	2
6	Setscrew	531129	1	531129	1	43	Gasket	530715	1	528829	1
7	O-Ring (Valve)	126119	1	126119	1	44	Dowel Pin	544998	2	544998	2
8	Stroke Stop Rod Bushing	524998	1	524974	1	45	Lower Body	530533	1	528813	1
9	Upper Body	530538	1	528814		46	Piston Guide Rod Bushing	528787	1	528943	1
10	Steel ball	554256	1	n/a		47	Retainer Flange	530528	1	528817	1
11	Upper Body Label	528831	1	528826	1	48	Capscrew	250580	4	130467	4
12	Funktion Detent Pad	528779	1	528779	1	49	Bellows	528809	1	528827	1
13	Detent	528781	1	528781	1	50	Return Spring Support	533775	1	533775	1
14	Setscrew	557274	1	558779	1	51	O-Ring (cant key)	578331	1	578331	1
15	Socket Head Capscrew	531126	2	551477	2	52	Cant key	call	1	call	1
16	3-way-valve	528783	1	528783	1	53	Lower body label	528830	1	528828	1
17	O-ring (set up knob bolt)	130136	2	130136	2	54	Socket Head Cap screw	132619	2	536135	2
18	Bushing	130108	1	130108	1	55	Stop Plate	528808	1	529506	1
19	Spring	130133	2	130133	2	56	Spring	530189	2	539936	2
20	Detent	528780	1	528780	1	57	Wedge Lock	530714	1	528819	1
21	Function Control Knob Bolt	528801	1	528801	1	58	Guide Pin	528798	2	528798	2
22	Function Control Knob Disc	528825	1	528825	1	59	O-ring	530193	5	530193	5
23	O-ring	126443	2	126443	2	60	Clamp Lever	528800	1	528800	1
24	Function Control Knob	528806	1	528806	1	61	Pivot Pin	545406	1	545381	1
25	Socket Head Capscrew	132483	1	132483	1	62	n/a	n/a	n/a	n/a	n/a
26	Washer	535183	1	535183	1	63	Steel ball	130167	2	n/a	n/a
27	Stroke Stop Rod	557519	1	557519	1	64	n/a	n/a	n/a	n/a	n/a
28	O-Ring (Piston)	530352	1	530352	1	65	Dovetail	557331	1	559031	1
29	Piston	557526	1	558880	1	66	Air Hose (coiled, red)	525000	1	525000	1
30	O-Ring (Piston Guide Rod)	130186	1	536190	1	67*	Air Hose (coiled, blue)	536163	1	536163	1
31	Air fitting	530101	6	530101	6	68	Air Hose (coiled, clear)	561517	1	561517	1
32	Piston guide rod	557322	1	558948	1						
33	Return spring	535146	1	535146	1						
34	Cant Key Guide Rod	557357	1	557357	1						
35	Air Hose (clear)	536162	1	536162	1						
36	Air Hose (red)	535153	1	535153	1						
37	Air Hose (blue)	132556	1	132556	1						

* Item 39: If your knifeholder mount has an external check valve, order hose assembly 570730.

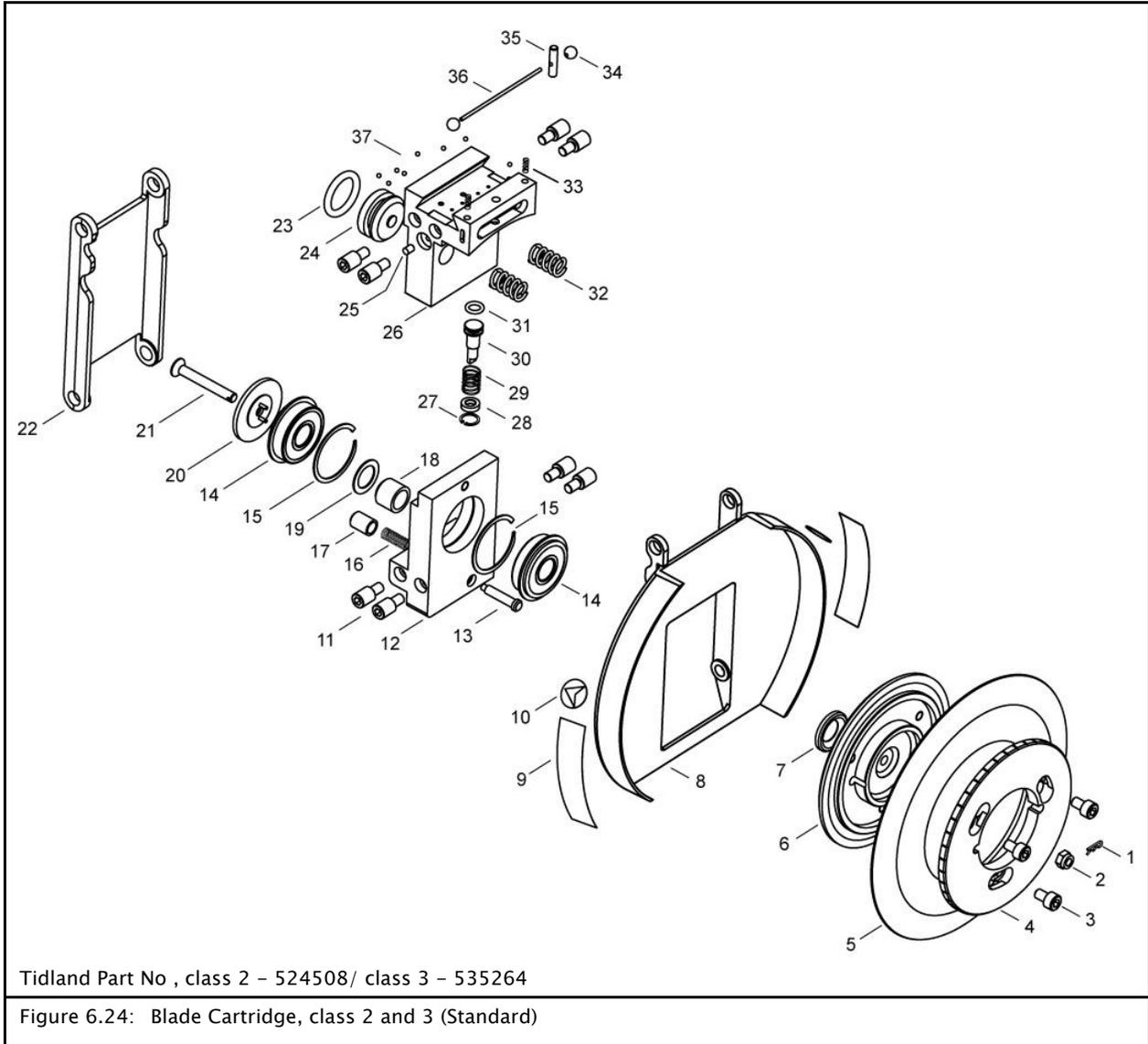
Blade Cartridge, class 1



Item	Description	Part number	Quantity
1	Hair Pin	528673	1
2	Nylock Nut	528674	1
3	Socket Head Cap Screw	635047	4
4	Blade Clamp	579833	1
*5	Top Blade	131937	1
6	Blade Hub	528671	1
7	Blade Lock Pin	133963	1
8	Bearing Snap Ring	528675	1
9	Bearing Housing	528667	1
10	Pivod Stud	545948	8
11	Set Stop Spring	528672	2
12	Blade Lock Cap	133962	1
13	Bearing Cap Assembly	528664	1
14	Flat Head Cap Screw	528668	1
15	Inboard Strut Arm	596436	1
16	Return Spring	552070	1
17	Set Stop Piston Snap Ring	528692	1
18	Set Stop Bushing	528687	1
19	O-Ring (Set Stop)	130136	1
20	Set Stop Piston	528686	1
21	Dovetail Block	528679	1
22	D-seal	528682	1
23	D-seal plate	528683	1
24	Diaphragm	528677	1
25	Diaphragm Plate	528678	1
26	Warning Label, ANSI	724239	2
27	Warning Label, ISO	724242	2
28	Cant Arrow Direction Label	547635	2
29	Outboard Strut	604563	1
30	Button Head Cap Screw	529354	4
31	Setscrew	564439	1
32	Setscrew	554156	2
33	Safety Latch Pin	528691	1
34	Safety Lock Pin	528681	1
35	Latch Pin Cap	528680	2
36	Safety Lock Spring	131119	2
*37	Steel ball	539093	1
38	Ball bearing	528663	2
39	Bearing Spacer	528669	1

* Recommended Spare Parts

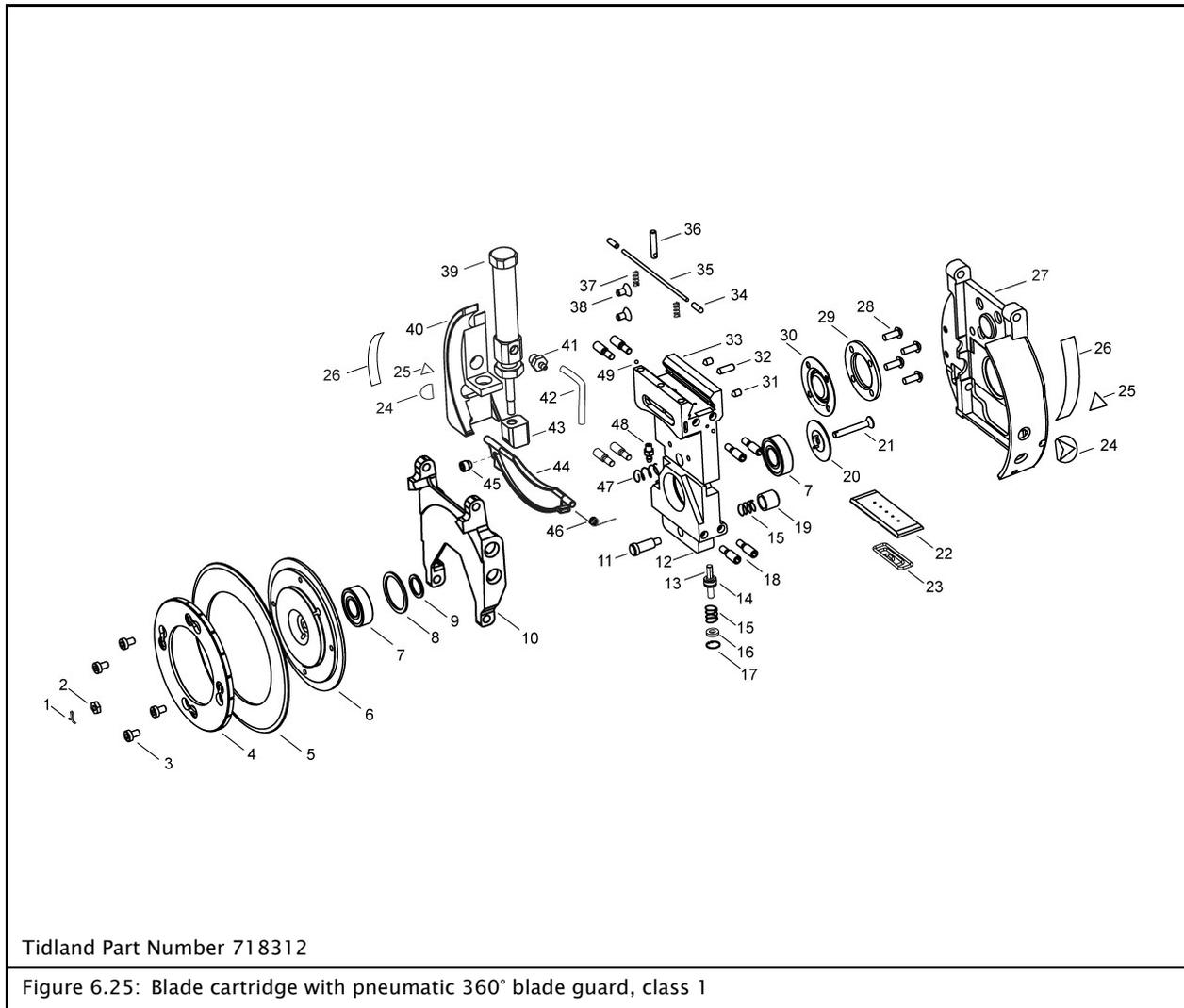
**Blade Cartridge, class 2
and 3**



Item	Description	Part number class 2	Quantity	Part number class 3	Quantity
1	Hair Pin	133710	1	133710	1
2	Nylock Nut	133235	1	133235	1
3	Socket Head Cap Screw	130168	3	549838	3
4	Blade Clamp	524543	1	135010	1
*5	Top Blade	128401	1	129833	1
6	Blade Hub	524544	1	135009	1
7	Shoulder ring	631251	1	631251	1
8	Blade guard	528098	1	536838	1
9	Warning label	130921	2	130920	2
10	Cartridge label	547635	2	547635	2
11	Pivot stud	535263	8	535263	8
12	Bearing housing	524542	1	536837	1
13	Blade lock pin	130172	1	130172	1
*14	Ball bearing	131121	2	131121	2
15	Snap ring	134305	1	134305	1
16	Blade lock pin spring	130179	1	130179	1
17	Blade lock cap	130173	1	130173	1
18	Bearing spacer	n/a		130184	1
19	Shim	134304	1	134304	1
20	Bearing cap assembly	515511	1	515511	1
21	Flat Head Cap Screw	524549	1	518520	1
22	Outboard Strut	528097	1	529808	1
23	Piston O-Ring	126479	1	126479	1
24	Piston	131108	1	131108	1
25	Set screw	132615	1	528690	1
26	Dovetail block	523492	1	529809	1
27	Snap ring	132244	1	132244	1
28	Set stop bushing	524525	1	524525	1
29	Set stop spring	524528	1	524528	1
30	Set stop piston	524541	1	524541	1
31	Set stop O-Ring	126193	1	126193	1
32	Return spring	131118	2	131118	2
33	Safety lock spring	131119	2	131119	2
34	Safety latch knob	131116	2	131116	2
35	Safety lock pin	131114	1	131114	1
36	Safety latch pin	131115	1	132891	1
37	Steel ball	557259	9	557259	9

* Recommended Spare Parts

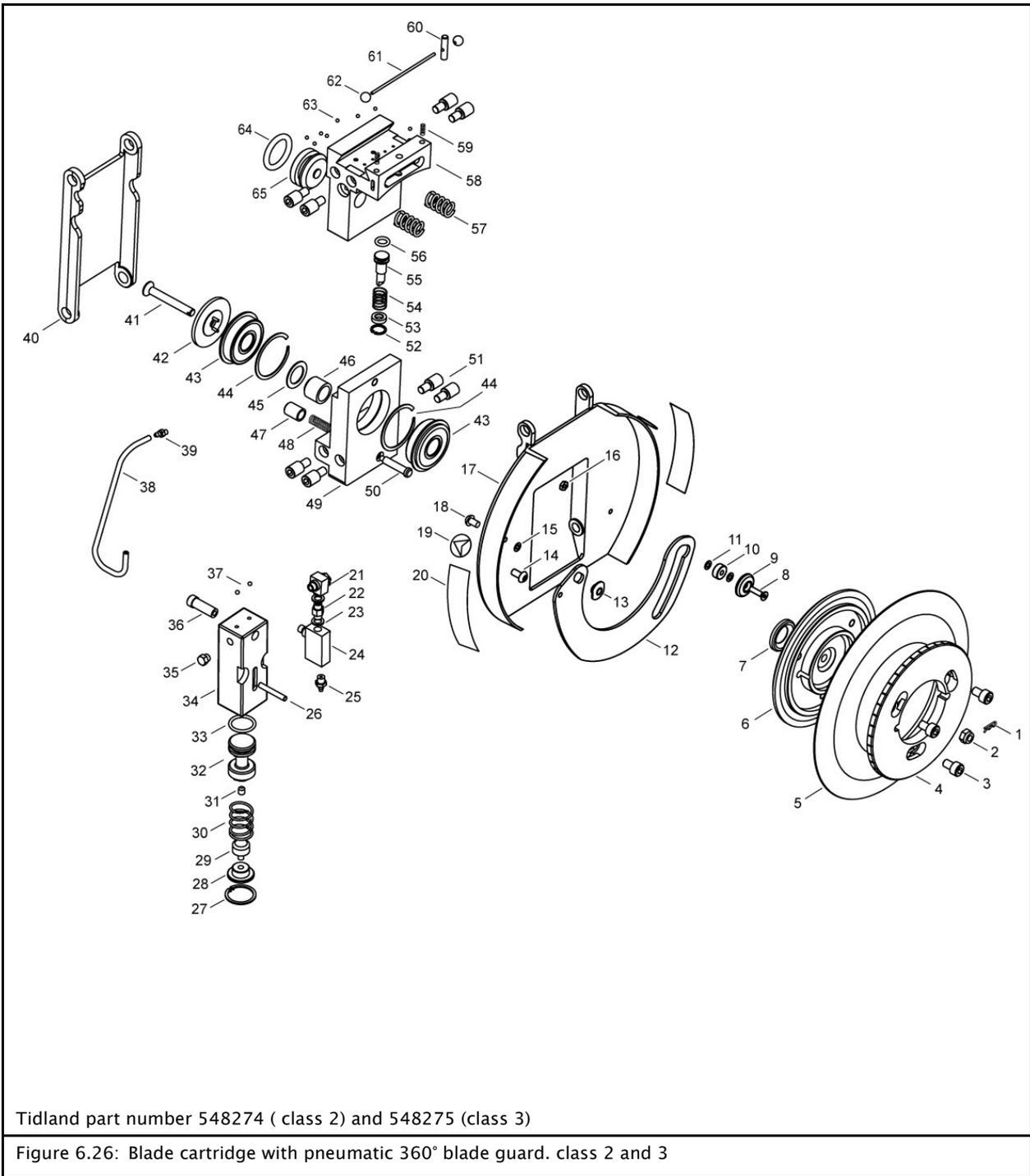
**Blade Cartridge with
pneumatic 360° blade guard,
class 1**



Item	Description	Part number	QTY
1	Hair Pin	528673	1
2	Nylock Nut	528674	1
3	Socket Head Cap Screw	635047	4
4	Blade Clamp	579833	1
*5	Top Blade	131937	1
6	Blade Hub	528671	1
*7	Ball bearing	528663	2
8	Bearing snap ring	528675	1
9	Bearing spacer	528669	1
10	Inboard Strut Arm	717825	1
11	Blade Lock Pin	133963	1
12	Bearing housing	528667	1
13	Set Stop Piston	528686	1
14	O-ring (Parker 2-006)	130136	1
15	Set Stop spring	528672	2
16	Set Stop bushing	528687	1
17	Set Stop Piston Snap Ring	528692	1
18	Pivot Stud	545948	8
19	Blade Lock Cap	133962	1
20	Bearing Cap Assembly	528664	1
21	Flat Head Cap Screw	528668	1
22	D-seal Plate	719522	1
23	D-seal	528682	1
24	Cartridge Arrow Label	547637	2
25	Warning Label, ISO	724242	2
26	Warning Label, ANSI	724239	2
27	Guard Strut	717820	1
28	Button Head Cap Screw	529354	4
29	Diaphragm Plate	528678	1
30	Diaphragm	528677	1
31	Set screw	554156	2
32	Set screw	564439	1
33	Dovetail block	734025	1
34	Safety Latsch Pin Cap	528680	2
35	Safety Latsch Pin	528691	1
36	Safety Lock Pin	528681	1
37	Safety Lock Spring	131119	2
38	Flat Head Cap screw	132270	2
39	Air cylinder with nut	718238	1
40	Mounting block, left	716998	1
41	Air fitting barb	561866	1
42	Air hose, clear	536162	n/a
43	Wedge Block	717080	1
44	Blade guard flap	716973	1
45	Set screw, special	728700	1
46	Torsion spring	718235	1
47	Cartridge return spring	552070	1
48	Air fitting barb	530101	1
49	Steel ball	539093	2

*Recommended spare parts

**Blade cartridge with pneu-
matic 360° blade guard,
class 2 and 3**



Note:
For information about the new mechanical 360° Blade Guard Cartridge, call Customer Service of the Fife-Tidland GmbH.

Part number 548274 (class 2) and 548275 (class 3)

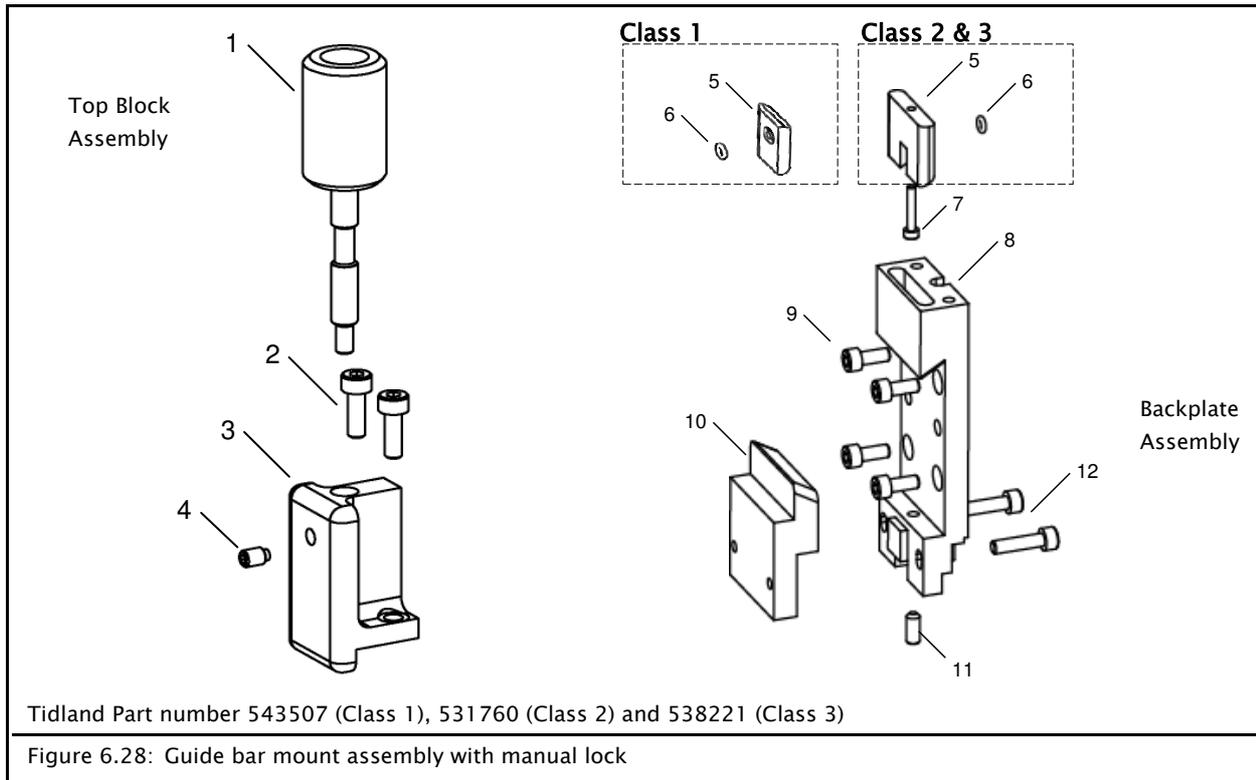
Item	Description	Class 2	Qty	Class 3	Qty	Item	Description	Class 2	Qty	Class 3	Qty
1	Hair Pin	133710	1	133710	1	33*	O-Ring	111952	1	111952	1
2	Nylock Nut	133235	1	133235	1	34*	Cylinder	567424	1	567424	1
3	Socket Head Cap Screw	130168	3	549838	3	35*	Plug	130185	1	130185	1
4	Blade Clamp	524543	1	135010	1	36*	Mounting post	134169	1	134169	1
5*	Top Blade	128401	1	129833	1	37*	Ball bearing	554256	1	554256	1
6	Blade Hub	524544	1	135009	1	38*	Poly tubing	132556	1	132556	1
7	Shoulder ring	631251	1	631251	1	39*	Air fitting barb	530101	1	530101	1
	Blade guard assembly	578150		538587		40	Outboard strut	569439	1	571761	1
8	Flat Head Cap Screw	250007	1	250007		41	Flat head cap screw	524549	1	518520	1
9	Keeper	567944	1	567944	1	42	Bearing cap assembly	515511	1	515511	1
10	Ball bearing	567805	1	567805	1	43	Bearing	131121	1	131121	1
11	Washer, flat	568005	2	568005	2	44	Snap ring	134305	1	134305	2
12	Swing plate	567965	1	575846	1	45	Shim	134304	1	134304	1
13	Pivot	567946	1	567946	1	46	Bearing spacer	n/a		133184	1
14	Button head cap screw	130248	1	130248	1	47	Cap, blade lock pin	130173	1	130173	1
15	Spacer	n/a	1	572088	1	48	Compression spring	130179	1	130179	1
16	Jam nut	528674	1	528674	1	49	Bearing spacer	524542	1	536837	1
17	Blade guard strut	567806	1	571762	1	50	Blade lock pin	130172	1	130172	1
18	Button head cap screw	131159	1	131159	1	51	Pivot stud	535263	8	535263	8
19	Label, Cartridge Arrow	547635	2	547635	2	52	Snap ring	132244	1	132244	1
20	Warning label	130921	2	130920	2	53	Bushing	524525	1	524525	1
	Cylinder assembly	567502		567502		54	Spring	524528	1	524528	1
21	Air fitting, 90°	128899	1	128899	1	55	Piston, half stop	524541	1	524541	1
22	Coupling	567496	1	567496	1	56	O-ring	126193	1	126193	1
23	Gasket, Nylon	133720	1	133720	1	57	Compression spring	131118	2	131118	2
24	Flow Control Valve	567497	1	567497	1	58	Dovetail	523492	1	529809	1
25	Air Fitting Barb	250423	1	250423	1	59	Compression spring	131119	2	131119	2
26	Dowel Pin	569469	1	571791	1	60	Safety lock pin	131114	1	131114	1
27	Snap ring	567501	1	567501	1	61	Safety latch pin	131115	1	132891	1
28	Spring retainer	567476	1	567476	1	62	Safety latch pin knob	131116	2	131116	2
29	Rubber bumper	567500	1	567500	1	63	Ball 2mm	557259	9	557259	5
30	Compression spring	567495	1	567495	1	64	O-ring	126479	1	126479	1
31	Setscrew	130147	1	130147	1	65	Piston	131108	1	131108	1
32	Piston	567459	1	567459	1						

*supplied with cylinder assembly

Maintenance

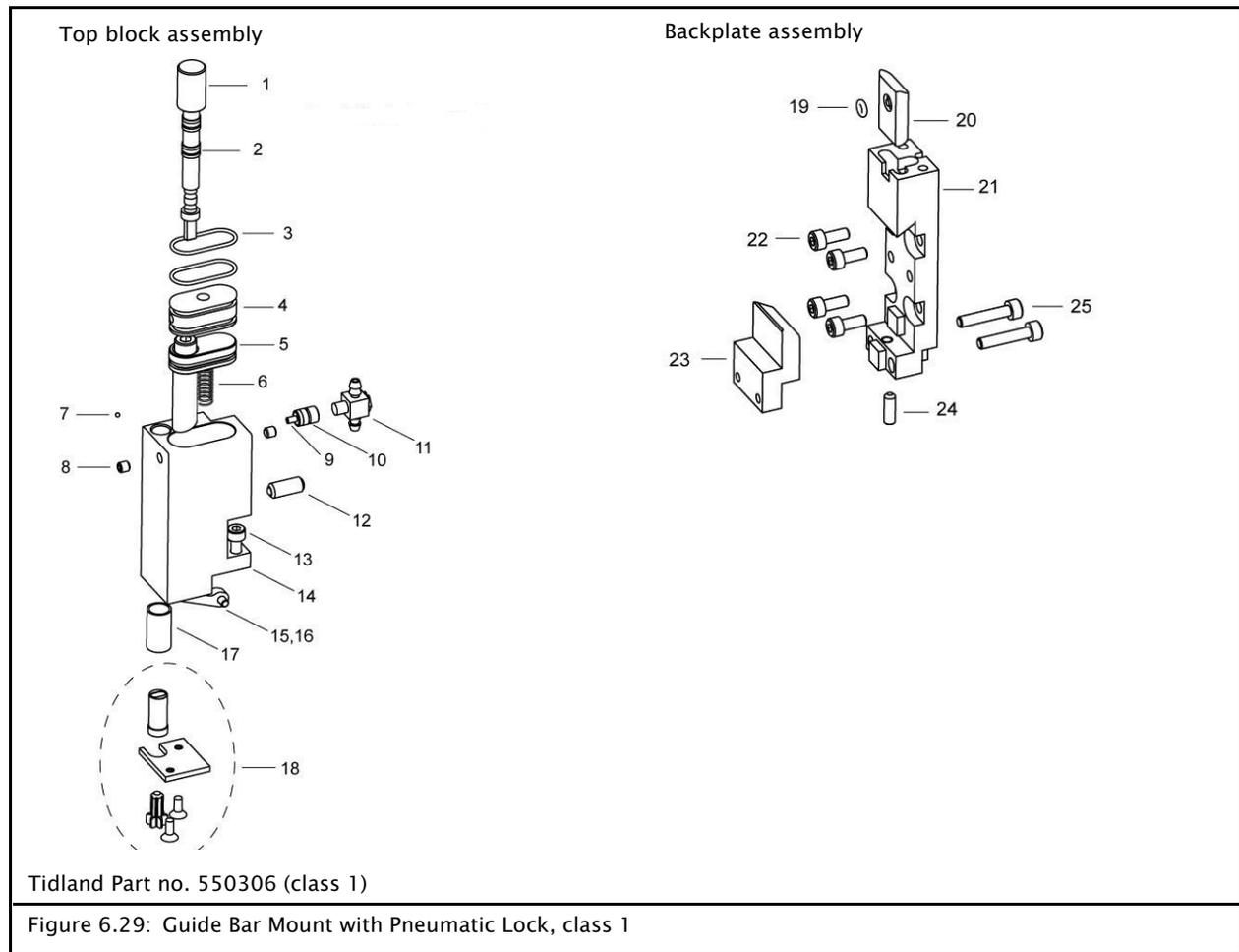
- Accumulated dust and debris can affect the extension and retraction speeds of the blade guard. Clean the cartridge and blade guard assembly regularly using compressed air.
- Biannually, or as needed, remove the piston (32) from the cylinder. Clean and relubricate the parts using *Parker Super O-Lube o-ring lubricant* (or equivalent).
- Replace the o-ring or any worn parts as needed.

Guide Bar Mount Assembly with Manual Lock



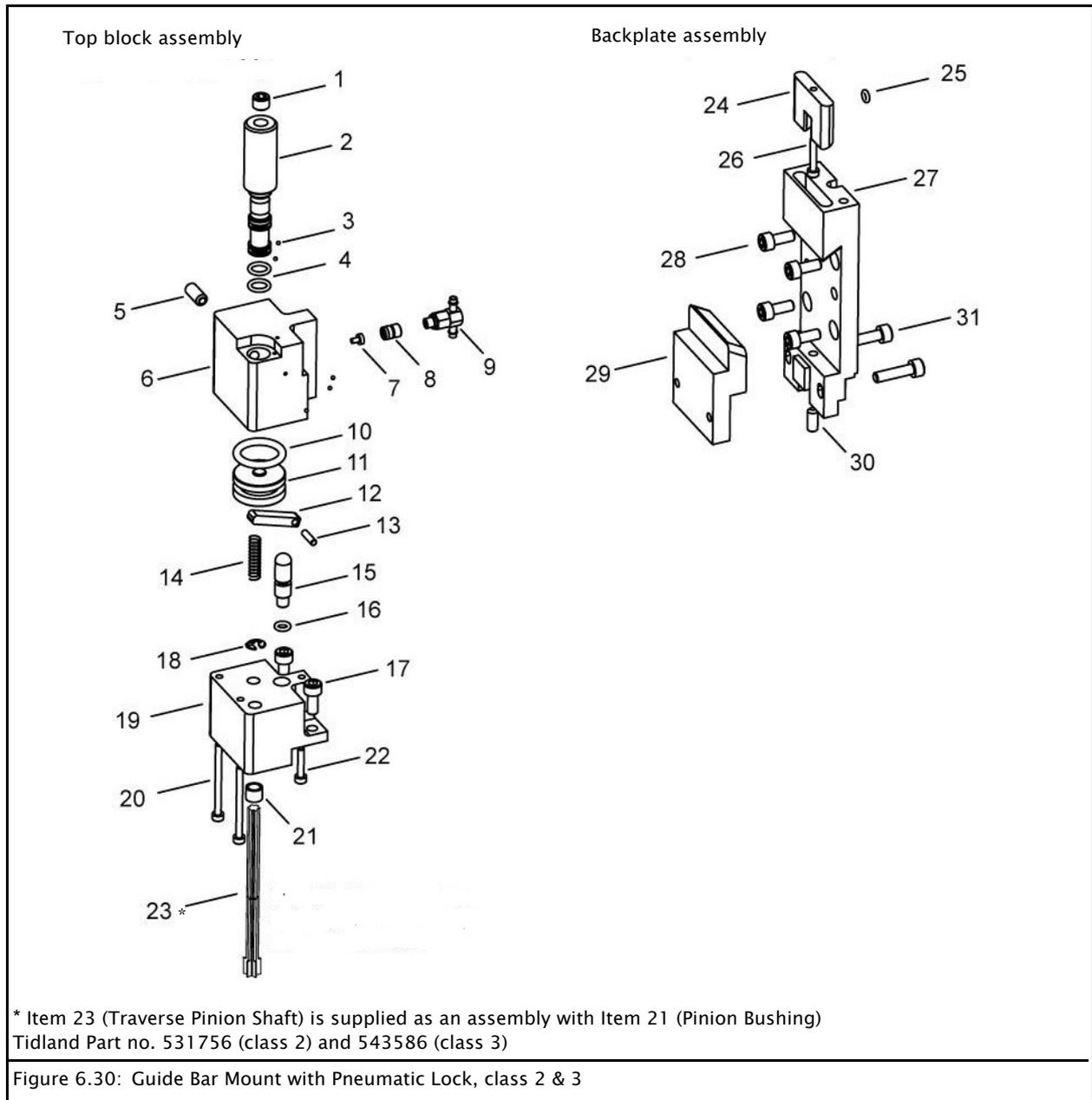
Item	Description	Part number		
		Class 1 (543507)	Class 2 (531760)	Class 3 (538221)
	Top Block Assembly	555538	544156	544156
1	Brake Knob	537973	531754	531754
2	Socket head cap screw	130145	130467	130467
3	Top block	537971	531750	531750
4	Setscrew	M188954	M127851	M127851
	Backplate Assembly	550708	550709	550710
5	Brake shoe	537972	531758	531758
6	O-ring (Brake shoe)	130136	130136	130136
7	Socket head cap screw	n/a	598977	598977
8	Backplate	537970	531759	538153
9	Socket head cap screw	130184	130467	250116
10	Gib	537974	531749	538154
11	Setscrew	130149	130470	130470
12	Socket head cap screw	250048	544155	544155

**Guide Bar Mount Assembly
with Pneumatic Lock, class 1**



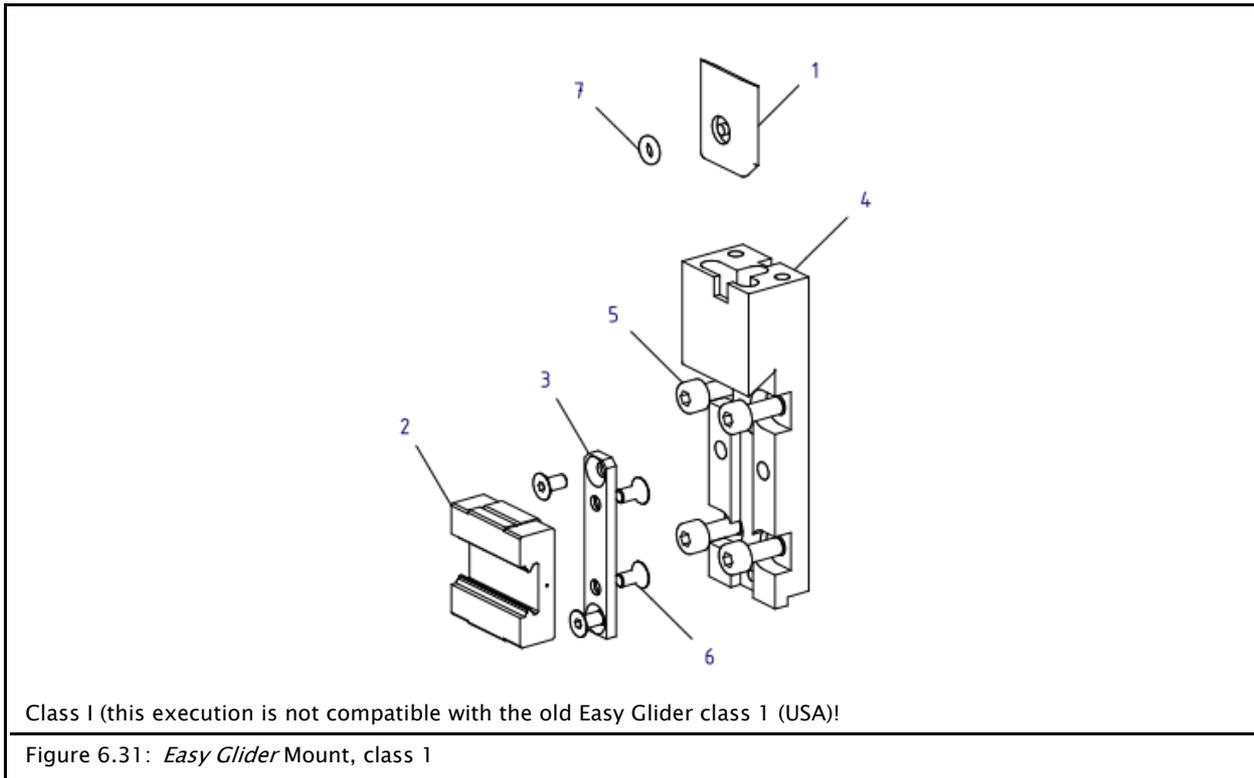
Item	Description	Part no.	Qty	Item	Description	Part no.	Qty
	Top Block Assembly	555539		14	Top block	550309	1
1	Traverse gear brake knob	550314	1	15	Lever	550315	1
2	Traverse gear brake knob O-ring	550319	2	16	Dowel pin, Lever	549542	1
3	Piston O-ring	130186	2	17	Bronze bushing	557189	1
4	Piston cap	550310	1	18	Traverse Pinion Shaft	550307	1
5	Piston block	550308	1		Backplate assembly	550708	
6	Piston return spring	554681	1	19	Brake shoe O-ring	130136	1
7	Steel ball	539093	1	20	Brake shoe	537972	1
8	Setscrew	130147	2	21	Backplate	537970	1
9	Check valve insert	573782	1	22	Socket Head Cap screw	130184	2
10	Retainer, Check valve	573779	1	23	Gib	537974	1
11	Air fitting	550731	1	24	Setscrew	130149	1
12	Detent ball	528781	1	25	Socket Head Cap screw	250048	4
13	Socket Head Cap screw	130145	2				

Guide Bar Mount with Pneumatic Lock, class 2 and 3



Item.	Description	Qty	Part No.	
			Class 2 (531756)	Class 3 (543586)
	Top Block Assembly		550707	550707
1	Setscrew	1	132957	132957
2	Traverse gear brake knob	1	539088	539088
3	Steel Ball	5	539093	539093
4	Traverse gear brake knob O-ring	2	554026	554026
5	Detent ball	1	528781	528781
6	Piston Block	1	539083	539083
7	Check Valve Insert	1	573782	573782
8	Retainer, Check Valve	1	573779	573779
9	Air Fitting	1	251536	251536
10	Piston O-ring	1	126479	126479
11	Piston	1	556199	556199
12	Lever	1	544312	544312
13	Dowel Pin, Lever	1	544308	544308
14	Compression spring	1	554681	554681
15	Piston Pin	1	539086	539086
16	O-Ring (Piston Pin)	1	126443	126443
17	Socket Head Capscrew	2	130467	130467
18	Snap ring	1	549833	549833
19	Top block	1	539084	539084
20	Socket Head Capscrew	2	549832	549832
21	Piston guide bushing	1	564861	564861
22	Socket Head Capscrew	1	250049	250049
23	Traverse Pinion Shaft*	1	539081	539081
	Backplate Assembly		550709	550710
24	Brake shoe	1	531758	531758
25	Brake Shoe O-ring	1	130136	130136
26	Socket Head Capscrew	1	598977	598977
27	Backplate	1	531759	538153
28	Socket Head Capscrew	4	130467	250116
29	Gib	1	531749	538154
30	Setscrew	1	130470	130470
31	Socket Head Capscrew	2	544155	544155

* Item 23 is supplied as an assembly with Item 21, not required when using Easy Glider Mount.

Easy Glider Mount, class 1

The *Easy Glider Mount* shown is used with the same top blocks as the standard knifeholder mounts., → [page 6-42](#) for pneumatic lock or [page 6-41](#) for manual lock.

Item	Description	Qty	Part No.
	Backplate Assembly		
1	Brake shoe	1	M281438
2	Linear Bearing	1	M378698
3	Bearing Spacer	1	M376700
4	Backplate	1	M376701
5	Socket Head Cap screw	4	M194309
6	Flat Head Cap Screw	4	M188384
7	O-Ring	1	M187724
	<i>Not shown</i>		
	Guide Bar		661590
	Linear Bearing Rail		662082

Easy Glider Mount, class 2 and 3

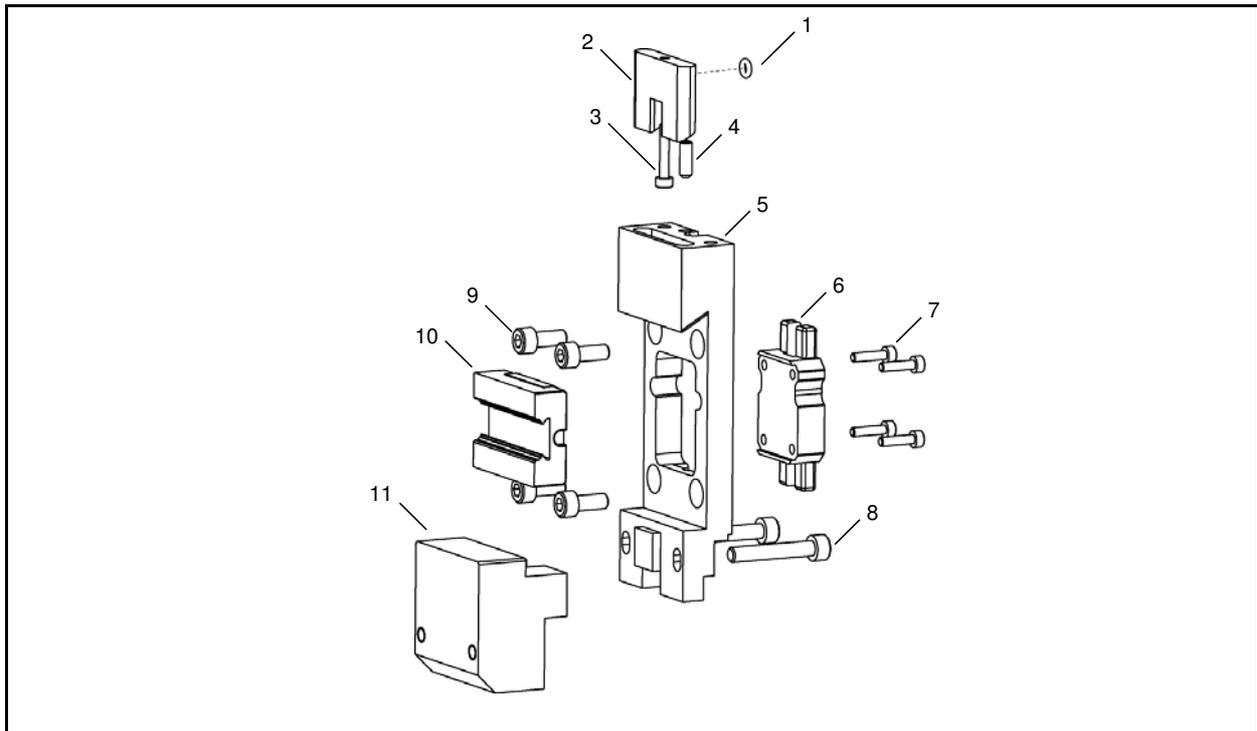


Figure 6.32: *Easy Glider* Mount, class 2 & 3

The *Easy Glider* Mount shown is used with the same top blocks as the standard knifeholder mounts, → [page 6-43](#) for pneumatic lock or [page 6-41](#) for manual lock.

Item	Description	Qty	Class 2	Klass 3
	Backplate Assembly		615576	618966
1	O-Ring	1	130136	130136
2	Brake shoe	1	531578	531578
3	Socket Head Capscrew	1	598977	598977
4	Set Screw	1	130149	130149
5	Backplate	1	595748	619001
6	Bearing retainer	1	595703	595703
7	Socket Head Capscrew	4	133180	133180
8	Socket Head Capscrew	2	132265	132265
9	Socket Head Capscrew	4	130467	250116
10	Linear bearing	1	621879	621879
11	Stop Block	1	595766	619027
	<i>not shown</i>			
	Guide Bar		608330	608330
	Linear bearing rail		621880	621880

7 TROUBLESHOOTING AND CORRECTION

Slit Quality



Note:

Call Fife-Tidland (Tel. 0049 6195 7002-0) for more information.

Problem	Possible cause	Solution
The slit edge is fuzzy	Dull blade	Replace top blade, → page 6-5 .
	Loss of cutting angle (worn parts)	Replace cant key , → page 3-6 .
	Wrong 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, → page 4-9 .
	Too much overlap	Correct overlap, → page 4-6 .
	Incorrect setback	Check geometry, → page 4-2 .
Slit line is not straight	Driven anvil run-out	Reset anvil ring.
	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, → page 4-9 .
Web tears or splits	Incorrect setback	Check geometry → page 4-2
	Loss of cutting angle (worn parts)	Replace cant key , → page 3-6 .
	Too much overlap	Calibrate to correct overlap, → page 4-6 .
	Insufficient overspeed of the driven anvil ring	Adjust overspeed to be 3-5% greater than the speed of the material web

Problem	Possible cause	Solution
Web folds down	Loss of cutting angle (worn parts)	Replace cant key, → page 3-6 .
	Wrong cant key	Replace cant key, → page 3-6 .
	Cant key is incorrectly installed	Check web direction, → page 3-6 .
	Dull blade	Replace blade, → page 6-5 .
	Incorrect setup	→ section <i>"Mounting the knifeholder on the guide bar"</i>
Web breaks .	Web tension too high	Reduce tension.
	Speed of the driven anvil ring too low.	Control the speed of the driven anvil ring.
Web bunches in front of blade,	Insufficient overspeed of the driven anvil ring	Adjust overspeed to be 3-5% greater than the speed of the material web
Short top blade life	Side force too high	Check the air pressure.
	Too much overlap	Calibrate to correct overlap, → page 4-6 .
	Driven anvil run-out	Reset anvil ring

Knifeholder

Note:

Any problems experienced upon initial start up of the knifeholder system should be reported promptly to a Fife-Tidland (Tel. 0049 6195 7002-0).

Problem	Possible cause	Solution
Sluggish knifeholder action (extension or retraction)	Low air pressure	Minimum 3,5 bar 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 & Piston assembly</i>
	Excessive air leak around depth control knob in the extended or retracted position	Possible bad o-ring on 3-way valve. Contact Fife-Tidland Service Technician.
	Excessive air leak around the Function Control Knob	Possible bad o-ring, → page 6-28 .
	Air leakage at control body to blade cartridge interface	Check that the lock lever of the blade cartridge clamps in the dovetail.
	Missing or damaged dovetail o-ring	Replace o-ring.
	Body gasket leak .	Check for loose screws.
	Lubrication required on internal body partse: - Piston Assembly O-ring - Piston Guide Rod - Piston Assembly Stroke Stop Rod - Piston Guide Rod Bushing	→ Upper Body & Piston assembly starting on page 6-23 and Lubrication scheme on page 6-11 ff.
Sticking Piston Assembly due to knifeholder abuse	Dropping knifeholder or striking with hammer can cause binding. Repare knifeholder and replace non-repairable parts .	
Function Control Knob feels excessively tight.	Dry o-rings. Lubricate o-ring , see Function Control Knob Disassembly, → page 6-28 .	

Problem	Possible cause	Solution
Knifeholder doesn't retract when Function Control Knob is turned in red position.	Broken Piston Return Spring	Replace Piston Return Spring. → Dovetail assembly page 6-20 and Upper Body, Lower Body and Piston assembly page 6-23 ff.
Depth Control Knob feels excessively tight or loose.	Loose or damaged detent	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 with <i>Parker Super O-Lube</i> .
Blade cartridge 360° blade guard does not pivot	Too low air pressure	Class 1: Check air pressure; guard should actuate at 20 PSI (1.4 bar). Classe 2/3: Check o-rings in the piston assembly If class 2/3 guard is slow to engage, adjust the flow control setting
		Check internal hoses for obstructions Check all hose connections. (Listen for leaks at the air fittings) Do not use soap spray solution to determine location of leaks.
	Air leaks at the air fittings.	Remove air fittings and stuck lubricant. Apply Loctite 242 to threads. Reinstall and tighten air fittings.
	Moving parts are obstructed	Check cartridge for debris and dust buildup; blow pivot points clean with compressed air.
	Broken spring (Class 1 only).	Replace spring .

Problem	Possible cause	Solution
Blade Cartridge does not make a Sidestroke	Blade cartridge not fully installed.	Ensure blade cartridge is pushed securely into place on knifeholder and that the clamp lever is in the locked position .
	Test to determine if problem stems from control body or blade cartridge	Remove non-functional blade cartridge and replace with functional blade cartridge.
	If after replacing the blade cartridge the control body is functional but the blade cartridge is not: ⇒ Excessive buildup of dust can prevent the 3-way valve (item 16) from activating the airflow required to shift the cartridge.	<ul style="list-style-type: none"> • Check air pressure (min. 3.5 bar). • Look for any missing dovetail o-rings • With air hose, blow out any dust accumulated in the depth control knob counterbore. Remove, clean out and reassemble knob. Replace knob, if necessary.
	Control body to blade cartridge interface.	Ensure that blade cartridge safety lock pin is fully engaged with the control body and that the clamp lever is in the lock position.
	Clogged dovetail o-ring hole.	Plunge hole gently with a suitable tools.
	Internal hose problem (if knifeholder has been disassembled)	→ air flow schematics, page 6-13 .
Blade Cartridge - Sidestroke before completing downstroke.	Caused by removal and incorrect replacement of control body internal hoses.	→air flow schematics, page 6-13 .

Problem	Possible cause	Solution
Blade Cartridge does not make a half-stroke.	Blade cartridge not fully installed.	Ensure blade cartridge is pushed securely into place on knifeholder and that the clamp lever is in the locked position .
	Sticky set stop piston	Increase air pressure to 6.9 bar and cycle Function Control Knob red to yellow several times. Decrease air pressure and verify half stroke function. The full stroke should provide approximately double the movement of that seen by the half-stroke.
	Excessive lubrication on set stop piston o-ring.	Remove set stop piston and wipe excess lube from the o-ring.

8 DECOMMISSIONING

Environmental protection



Note:

Substances hazardous to water can pollute the ground and ground water or can get into the sewage system. The legal obligations with regard to waste prevention and proper use/removal must be complied with when carrying out work on or with the knifemaker. In particular during installation, repair and maintenance work, substances hazardous to water, e.g. grease and oils, must not pollute the ground or get into the sewage system. These substances must be kept, transported, caught and disposed of in suitable containers.



Note:

Oil and waste materials containing oil pose a high potential risk to the environment. Therefore they must be disposed of by specialist companies. Bring these waste materials to the in-house disposal team, which they will, in turn, forward to the specialist companies.

Final decommissioning

When the knifemaker is finally decommissioned, the laws and legal regulations with regard to disposal, valid up to this point, must be complied with. It is certainly useful to check which materials can be brought for recycling and to then also carry this out.

9 COMPATIBILITY CHART

Control body and blade cartridge

Performance Series and Series C – Class 1, 2 and 3
Tidland e-Knifeholder – Class 2 and 3



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

Class 1			Control Body						
			CS Shear*	CS Crush*	PS Shear Automatik	PS Shear Manual	PS Crush		
			131892	131902	536160	543919	608763 608879		
Blade cartridge	PS Swing Automatic-Shear	547613			x				
	PS Swing Automatic-Shear with 360° Blade Guard – Pneumatic	718312			x				
	PS Swing Manual Shear	551430 598429	x			x			
	PS Crush	568412		N/A	x	x	x		
	PS Razor	566769			x	x			
Class 2			Control Body						
			CS Shear*	CS Crush*	PS Shear Automatik	PS Shear Manual	PS Crush	e KH	ECS
			131921	131922	530527	535761	590191 607694	700173 762359	270015397
Blade cartridge	PS Swing Automatic-Shear	524508			x				
	PS Swing Automatic-Shear with 360° Blade Guard – Pneumatic	548274			x				
	PS Swing Manual Shear	569393	x			x			
	PS Swing Automatic-Shear with 360° Blade Guard – Mechanical	766913			x				
	PS Swing Manual-Shear with 360° Blade Guard – Mechanical	769816				x			
	PS Crush	568924		x	x	x	x		
	e-Knifeholder – with 360° Blade Guard	749142						x	x
	e-Knifeholder Swing Cartridge	696317						x	x

Class 3			Control Body						
			CS Shear*	CS Crush*	PS Shear Automatik	PS Shear Manual	PS Crush CL2 MOD	e KH	ECS
			131923	131923	528812	534324	N/A	708403 762358	270015402
Blade cartridge	PS Swing Automatic–Shear	535264			x				
	PS Swing Automatic–Shear with 360° Blade Guard – Pneumatic	548275			x				
	PS Swing Manual Shear	569394	x			x			
	PS Swing Automatic–Shear with 360° Blade Guard – Mechanical	766915			x				
	PS Swing Manual–Shear with 360° Blade Guard – Mechanical	769817				x			
	PS Swing Automatic–Shear High Side Force	650453			x				
	PS Crush	569508		x		x	x		
	e–Knifemaker – with 360° Blade Guard	753161						x	x
	e–Knifemaker Swing Cartridge	700518						x	x

* C Series Knifemakers are obsolete and discontinued. Convert customer to Performance Series if possible.

10 SERVICE

Requests for Service

When requesting service, please have a copy of the order confirmation ready with the order number.

When ordering replacement parts, please indicate, (where possible) Part Number, Drawing Number and Model description.

Please be careful to keep all documents accompanying the product in a safe place. This will allow us to help you more quickly in the event that service is required.

Addresses

To request service, or if you need replacement parts, please contact one of the following addresses.

Fife-Tidland GmbH

Max-Planck-Straße 8 Siemensstraße 13-15
65779 Kelkheim 48683 Ahaus
Germany Germany
Phone: +49 - 6195 - 7002 - 0
E-Mail: service@maxcess.eu
Web: www.maxcess.eu

Tidland, a Maxcess Brand

2305 SE 8th Street
Camas, WA 98607 USA
Phone: +1 - 360 - 834 - 2345
E-Mail: service@maxcessintl.com
Web: www.maxcessintl.com



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AND AFRICA**

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www.maxcess.eu

**NORTH, CENTRAL
AND SOUTH AMERICA**

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sales@maxcessintl.com
www.maxcessintl.com

CHINA

Tel +86.756.881.9398
info@maxcessintl.com.cn
www.maxcessintl.com.cn

JAPAN

Tel +81.43.421.1622
japan@maxcessintl.com
www.maxcess.jp

INDIA

Tel +91.22.27602633
india@maxcessintl.com
www.maxcess.in



Einbauerklärung im Sinne der Maschinenrichtlinie 2006/42/EG Anhang II 1B

Original-Einbauerklärung in Deutsch

Hersteller Fife-Tidland GmbH
Max-Planck-Straße 8
D-65779 Kelkheim

Bevollmächtigter für die Zusammenstellung der relevanten technischen Unterlagen: Herr Philipp, Konstrukteur, Fife-Tidland GmbH
Max-Planck-Straße 8
D-65779 Kelkheim

Produkt: Bezeichnung: Messerhalter
Typ: Performance Serie, Precision Lock, "W" Serie
Seriennummer: 2314859 - xxxxxxx

Der Hersteller erklärt, dass das oben genannte Produkt eine unvollständige Maschine im Sinne der Maschinenrichtlinie ist. Das Produkt ist ausschließlich zum Einbau in eine Maschine oder unvollständige Maschine vorgesehen und entspricht daher noch nicht allen Anforderungen der

2006/42/EG Maschinenrichtlinie.

Folgende grundlegende Sicherheits- und Gesundheitsschutzanforderungen nach Anhang I sind angewandt und eingehalten:

Artikel 1.1.2, 1.1.3, 1.1.5, 1.1.6, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.7, 1.3.8.1, 1.3.9, 1.4.2.1, 1.5.2, 1.5.3, 1.5.4, 1.5.8, 1.6.1, 1.6.2, 1.6.3, 1.6.4, 1.7.1.1, 1.7.2, 1.7.3, 1.7.4, 1.7.4.1, 1.7.4.2, 1.7.4.3

Die alleinige Verantwortung für die Ausstellung dieser Einbauerklärung trägt der Hersteller. Die speziellen technischen Unterlagen gemäß Anhang VII Teil B wurden erstellt. Der Bevollmächtigte für das Zusammenstellen der technischen Unterlagen verpflichtet sich, die Unterlagen auf begründetes Verlangen an die einzelstaatlichen Stellen zu übermitteln. Die Übermittlung erfolgt postalisch in Papierform oder auf elektronischem Datenträger.

Die Inbetriebnahme des Produkts ist so lange untersagt, bis festgestellt wurde, dass die Maschine, in die das oben genannte Produkt eingebaut wird, allen grundlegenden Anforderungen der Maschinenrichtlinie entspricht.

Folgende harmonisierte Normen sind angewandt:

EN ISO 12100	Sicherheit von Maschinen- Allgemeine Gestaltungsleitsätze- Risikobeurteilung und Risikominderung
EN 1034-3	Sicherheit von Maschinen der Papierherstellung und Ausrüstung
EN 1010-1	Sicherheitsanforderungen an Konstruktion und Bau von Druck- und Papiermaschinen
EN ISO 13857	Sicherheit von Maschinen; Sicherheitsabstände gegen das Erreichen von Gefährdungsbereichen
EN ISO 4414	Sicherheit Pneumatik; Allgemeine Regeln und sicherheitstechnische Anforderungen an Pneumatikanlagen und deren Bauteile

Eine vollständige Liste der angewendeten Normen, Richtlinien und Spezifikationen liegt beim Hersteller vor. Eine technische Dokumentation ist vollständig vorhanden. Die zur unvollständigen Maschine gehörende Montageanleitung liegt vor.

Kelkheim, 21.04.2021



Alexander Haid, Vice President, General Manager Europe

Declaration of incorporation in terms of Machine directive 2006/42/EG annex II 1B

Translation of the original Declaration in German

Manufacturer	Fife-Tidland GmbH Max-Planck-Strasse 8 D-65779 Kelkheim
Authorized representative for the compilation of the relevant technical documentation.	Mr. Philipp, designing engineer, Fife-Tidland GmbH Max-Planck-Strasse 8 D-65779 Kelkheim
Product:	Description: Knifeholder Type: Performance Serie, Precision Lock, "W" Serie Serial number: 2314859 - xxxxxxxx

The manufacturer declares that the product mentioned above is a partly completed machinery according to Machinery Directive. The product is intended solely for installation in a machine or partly completed machinery and therefore does not yet meet all requirements of

2006/42/EG Machine directive

The following essential health and safety requirements of Annex I are applied and complied with:

Articles 1.1.2, 1.1.3, 1.1.5, 1.1.6, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.7, 1.3.8.1, 1.3.9, 1.4.2.1, 1.5.2, 1.5.3, 1.5.4, 1.5.8, 1.6.1, 1.6.2, 1.6.3, 1.7.1.1, 1.7.2, 1.7.3, 1.7.4, 1.7.4.1, 1.7.4.2, 1.7.4.3.

The manufacturer bears sole responsibility for issuing this declaration of incorporation. The special technical documentation according to Annex VII Part B has been prepared. The authorized representative for the compilation of the technical documentation undertakes to transmit the documentation to the national authorities upon justified request. The transmission shall be made by post in paper form or on electronic data carrier.

The start-up of the product is forbidden, until determined that the machine, into which the named product has to be assembled, correspond with the regulations of the applicable Machinery Directive.

The following harmonized standards are applied:

EN ISO 12100	Safety of machinery – General principles for design– Risk assessment and risk reduction
EN 1034-3	Safety requirements for the design and construction of paper making and finishing machines
EN 1010-1	Safety requirements for the design and construction of printing and paper converting machines
EN ISO 13857	Safety of machinery – Safety distances to prevent hazard zones
EN ISO 4414	Pneumatic fluid power – General rules and safety requirements for systems and their components

A complete list of the applied standards, guidelines and specifications is present with the manufacturer. The technical documentation is complete and present. The assembly instructions of the partly completed machinery are present.

Kelkheim, 21.04.2021

Alexander Haid , Vice President, General Manager Europe