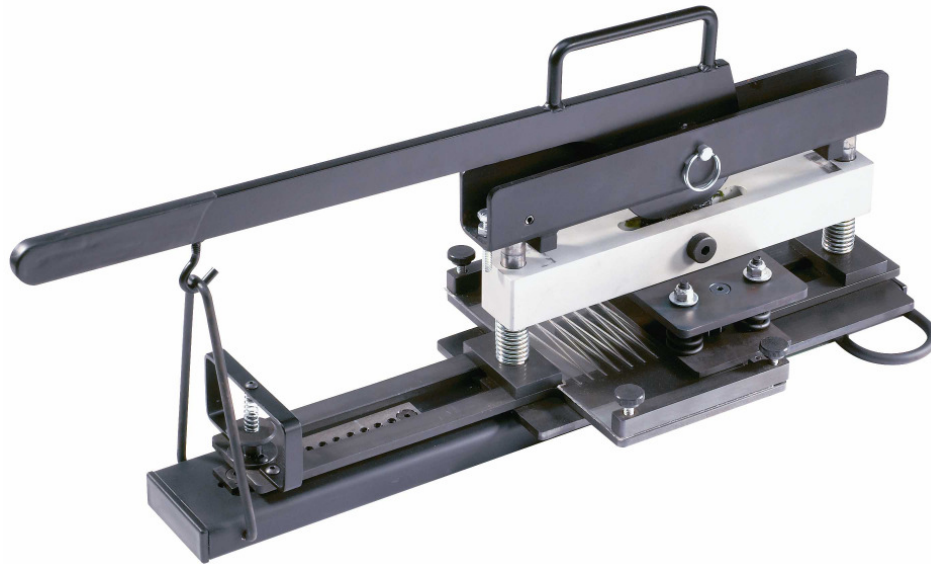




## Die-cutting tool AF-100/US



The AF-100/US is a device for preparing (die-cutting) Habasit belts and tapes up to a width of 100 mm and a thickness of 6 mm for Flexproof (finger) joints. It is available in several versions:

- AF-100/US-35 for 10/35 finger geometry
- AF-100/US-80 for 10/80 finger geometry
- AF-100/US-120 for 10/120 finger geometry

Each version can be converted to the other with a conversion set.

The belt is securely clamped on a movable carriage. This carriage is positioned in steps of 10 mm (finger pitch) under a die-cutting head. The die-cutting head, with two knife blades, is then actuated with an eccentric lever, providing enough force to cut even the strongest aramid fabrics with ease. The fingers are thus cut step by step, ensuring the most precise geometry of the cut and therefore the optimum tensile strength of the resulting joint.

The AF-100/US is particularly suited for preparing Flexproof joinable power transmission belts and machine tapes (TF range, CM/Flexfold range, Hamid range).



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**Appendix:**

- Product Liability



## 1. General information

### 1.1 Application

The AF-100/US preparing device (cutting machine) has been designed for the express purpose of precisely die-cutting Habasit belts, preparing the belt ends with a zig-zag pattern for joining the Flexproof system.

Belting designed to be joined by the Flexproof joining system, in widths up to 100 mm (3 15/16") and 6 mm (0.24") thick, is acceptable.

These operating instructions imply that all assembly, maintenance, and repair work as well as operation of the press be carried out by skilled personnel or checked by responsible specialists.

For reasons of scope, these instructions cannot cover all possible aspects of operation, maintenance or repair. The indications given herein refer to the use of the machines according to their designated purpose by skilled personnel.

In case of doubt or if further detailed information is required, please consult the manufacturer.

### 1.2 Relevant safety terms

In these operating instructions you will find the terms WARNING, CAUTION and INDICATION. They signal dangers or special information to be borne in mind.

**WARNING** If disregarded, there is a danger of severe injury, and/or serious material damage may be caused.

**CAUTION** If disregarded, there is a danger of injury, and/or material damage may be caused.

**INDICATION** Technical information is emphasized if it is important and not readily apparent, even for skilled personnel.

Please observe all indications for assembly, operating, and maintaining the machines, as well as all technical data! This will prevent possible trouble and/or damage to people or materials.

**Skilled personnel** refers to persons authorized to perform the required tasks. These people have been sufficiently trained and introduced to their field of activity so that they are able to recognize and prevent dangers. They are aware of the pertinent provisions and safety regulations.

### 1.3 Extent of supply

Qty.	Item
1	Die-cutting tool
1	Cutting head (available heads – finger size: 10 mm x 35 mm, 10 mm x 80 mm, 10 mm x 120 mm)
1	Cutting pad
1	Flexcut sample
1	Operating instructions



### 1.3.1 Available accessories

Item	Order No.
Spare cutting blades:	
For 35 mm fingers	A-0127-35
For 80 mm fingers	A-0127
For 120 mm fingers	A-0224

### 1.4 Ordering of accessories/spare parts

Spare parts to be ordered directly from the manufacturer. Address:

Habasit Belting, Inc.  
305 Satellite Boulevard  
USA – Suwanee, GA 30024

Please specify the ordered parts clearly.

<b>WARNING</b> The use of foreign parts not meeting Habasit specifications is not admissible. Habasit declines all responsibility for the consequences if non-Habasit parts are used.
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### 1.5 Warranty

All tools undergo a strict final inspection. On the assumption of correct handling, they are warranted against material and manufacturing defects for 1 year.

### 1.6 Technical advice

Our specialists will be pleased to advise you. For technical questions concerning function and condition of the cutting device, please contact the manufacturer (address see chapter 1.4).



## 2. Mode of operation

- The AF-100/US preparing device (“Flexcutter”) functions by means of a sequential-step method.
- When the cutting operation is performed, the belt is simultaneously cut to the correct length and prepared for joining.
- The cutting head (A) ( ref. 7.1 Overview Flexproof cutter ) is equipped with two cutting blades (B) which are protected by the stripper plate (C) when not in operation. The stripper plate holds the belt firmly against the cutting pad (D), during the cutting operation, and ejects the belting from the cutting blades when cutting head pressure is removed.

## 3. Preparing for operation

- Place the flexcutter on a stable, flat working surface.
- Remove shoulder pin (E) from cross head.
- With lever (F) in a vertical position, insert the lobe end into the cross head and align the hole of the lever with those in the cross head.
- Insert shoulder pin through the aligned holes of the cross head and lever.
- The depth of penetration of the cutting blades into the cutting pad is set by the manufacturer for optimum performance. Should cutting performance degrade to an unacceptable level, the cutting pad can be inverted to reveal a new cutting surface. A single sheet (or multiple sheets) of paper may be inserted beneath the cutting pad to compensate a worn cutting surface.
- To transport the tool – outside of the toolbox – move the lever to the horizontal position, lift the bail (G) and secure it in the hook on the handgrip end of the lever. The AF-100/US can now be readily carried by the handle (H) which is mounted atop the lever.

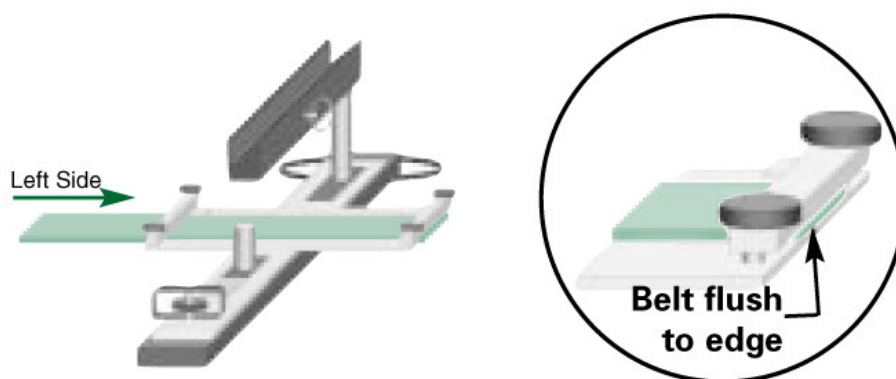


#### 4. Flexcutting process

1. When preparing a new belt for joining, ensure that the belt ends are true by cutting them 90 degrees to the belt edge with a clean, straight cut. Accurately measure off the required belt length and add **210 mm (8 1/4") to the length measurement** of the belt to compensate for the material removed from the belt ends as a result of the flexcutting process. If a section of belting (a.k.a dutchman) is to be spliced into an existing belt, then **420 mm (16 1/2") of additional material** must be added to the length of the dutchman.
2. Rotate the lever of the AF-100/US into the vertical position and loosen the thumbscrews on the belting hold-down bars (I).

**CAUTION:** Care should be exercised when rotating lever to the vertical position as spring pressure from the stripper plate can cause the lever to auto-rotate. Never leave the lever in the horizontal position uncontrolled – latch the bail to the hook of the lever or physically hold it in place.

3. Lifting the hold-down bars, one at a time, slide the end of the belting beneath each bar and over the cutting pad – entering from the left side of the slide plate (J), and position the belt end so that it is flush against the right side of the slide plate.



4. Align the belt on the slide plate by sliding its edge against the belt guides (K). Double check to ensure that the belt end has remained flush with the right side of the slide plate.
5. Holding the belt securely in place against the slide plate and belt guides with one hand, tighten the thumbscrews on the hold-down bars.
6. Grasp the slide plate handle (M) and lift the plunger knob (N) with the fingers of that hand. This will retract the plunger from the indexing plate (O) and allow free movement of the slide plate. Move the slide plate until its end comes into place over the position marked "1" on the indexing plate.
7. Release the plunger knob and gently apply a light push and pull action to the handle to seat the plunger in the mating hole of the indexing plate.
8. Actuate the cutting head to make the cut by taking hold of the hand grip on the lever, rotating the lever downward into the horizontal position, pressing downward firmly and sharply until the lever contacts the lever stop pin (P). Lift the lever—carefully rotating it back into the vertical position to retract the cutting blades from the belting.



9. Repeat the actions in steps 6, 7, and 8 respectively, moving the slide plate to the next position in the sequence on the indexing plate, and making the cut until the final cut has been made at the last position on the indexing plate.
10. Loosen the thumbscrews on both hold-down bars to release the belting. Slide the belt end out from beneath the hold-down bars, leaving the remnant flexcut end-portion of the belt intact with the belt itself in order to protect the flexcut end of the belt.
11. Inspect the new flexcut – from the underside – to observe if the cutting blades penetrated completely through the belting. In the event that clean penetration had not occurred (commonly due to a well worn cutting pad or dulling cutting blades), use a razor knife to carefully complete the cut, working from the underside of the belt.

<b>CAUTION:</b>	Do not attempt to remove the remnant flexcut end – that has not been cut through completely – by sharply pulling on the end. This action can damage the flexcut.
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12. Insert the second end of the belt to be flexcut beneath the hold-down bars as outlined in steps 3, 4, and 5, but from the right side of the slide plate—and repeat steps 6 through 12.

## 5. Service

### 5.1 Maintenance

- Lubricate shoulder pin (E) for ease of installation as needed.
- Grease cam follower bolt (Q) and stripper plate studs (R) as needed for smooth operation.
- Lubricate the slide-plate guide blocks (S) and hold-down bar thumbscrews (L) as needed for smooth operation.
- The depth of penetration of the cutting blades into the cutting pad is set by the manufacturer for optimum performance. Should cutting performance degrade to an unacceptable level, the cutting pad can be inverted to reveal a new cutting surface. A single sheet (or multiple sheets) of paper may be inserted beneath the cutting pad to temporarily compensate a worn cutting surface. Replace cutting pad when worn on both sides.
- Replace blades as needed for proper cutting effectiveness. Blade length is critical for achieving proper cutting and thus must remain equal to facilitate equal penetration during the cutting operation. Sharpening blades shortens their effective length and is therefore not recommended.

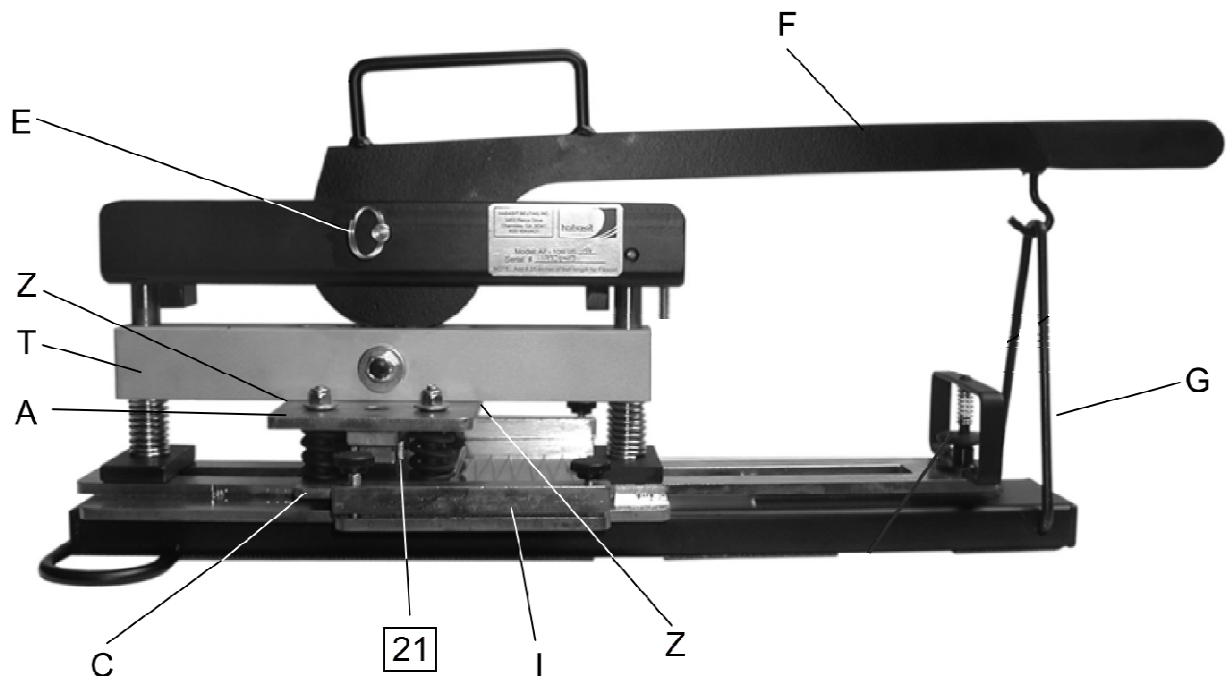


### 5.1.1 Cutting blade replacement

**CAUTION!** Cutting blades are extremely sharp, use necessary protective equipment and exercise care when handling the cutter head and/or blades.

To replace cutting blades:

1. Release bale (G) from Lever (F) and rotate lever into full upward position.
2. Holding Lever, remove shoulder pin (E) and lift Lever out and away from cutter.
3. Remove one hold down bar (I) by removing thumb screws.
4. With an hex wrench, remove the two mounting screws (Z) from the underside of the cutter head top plate (A) that secures it to the cross bar (T).
5. Slide cutter head out from beneath cross bar, turn it upside down, and place it on a work surface with the stripper plate (C) facing upward. **CAUTION:** sharp edges of cutter blades are exposed thru stripper plate.
6. Using an hex wrench and entering from the side of the cutter head, remove the 2 screws from the blade keeper [21].
7. With the blade keeper removed, the blade can now be removed from the locator pin in the center of the blade and then replaced with the new blade by positioning it in the same manner over the locator pin. Use **CAUTION** when handling the cutter blades.
8. Return blade keeper to its original position over the new blade and secure it by replacing and tightening the hex screws.
9. Repeat steps 6 through 8 to replace second blade.
10. To reinstall the cutter head, repeat steps 1 through 5 in reverse order.







## 5.2 Parts list

PART NUMBER	QTY	PART DESCRIPTION	PART NUMBER	QTY	PART DESCRIPTION
4298-001	1	shoulder pin	4298-021	2	blade keeper
0700-002	1	cam lever	0700-023	1	base plate
4298-003	1	cam follower	0700-024	1	base
4298-004	1	cam follower bolt	0700-025	1	nut plate
0700-005	1	carrier plate	0700-026	1	index plate
0700-006	1	stripper plate	4298-027	1	plunger knob
4298-007	4	thumb screw	4298-028	1	bail
0700-008	2	clamp bar	0700-030	1	cutting pad
0700-009	1	slide plate	4298-032	1	follower bolt lock nut
4298-010	2	guide block	4298-033	2	end cap
0700-012	2	crossbar spring	4298-034	2	shoulder bolt lock nut
0700-013	1	cross bar	4298-035	2	liner-non skid
4298-014	2	shoulder bolt	4298-036	1	spring pin
0700-015	2	cross head	4298-037	1	pin
4298-016	4	stop nut	4298-038	1	handle
0700-017	4	stripper spring	4298-039	1	spring
4298-018	4	stud sleeve	4298-040	1	pin guide
4298-019	4	stripper plate stud	0700-041	1	ID plate
4298-020	1	blade holder	4298-042	1	lever stop pin & jamb nut

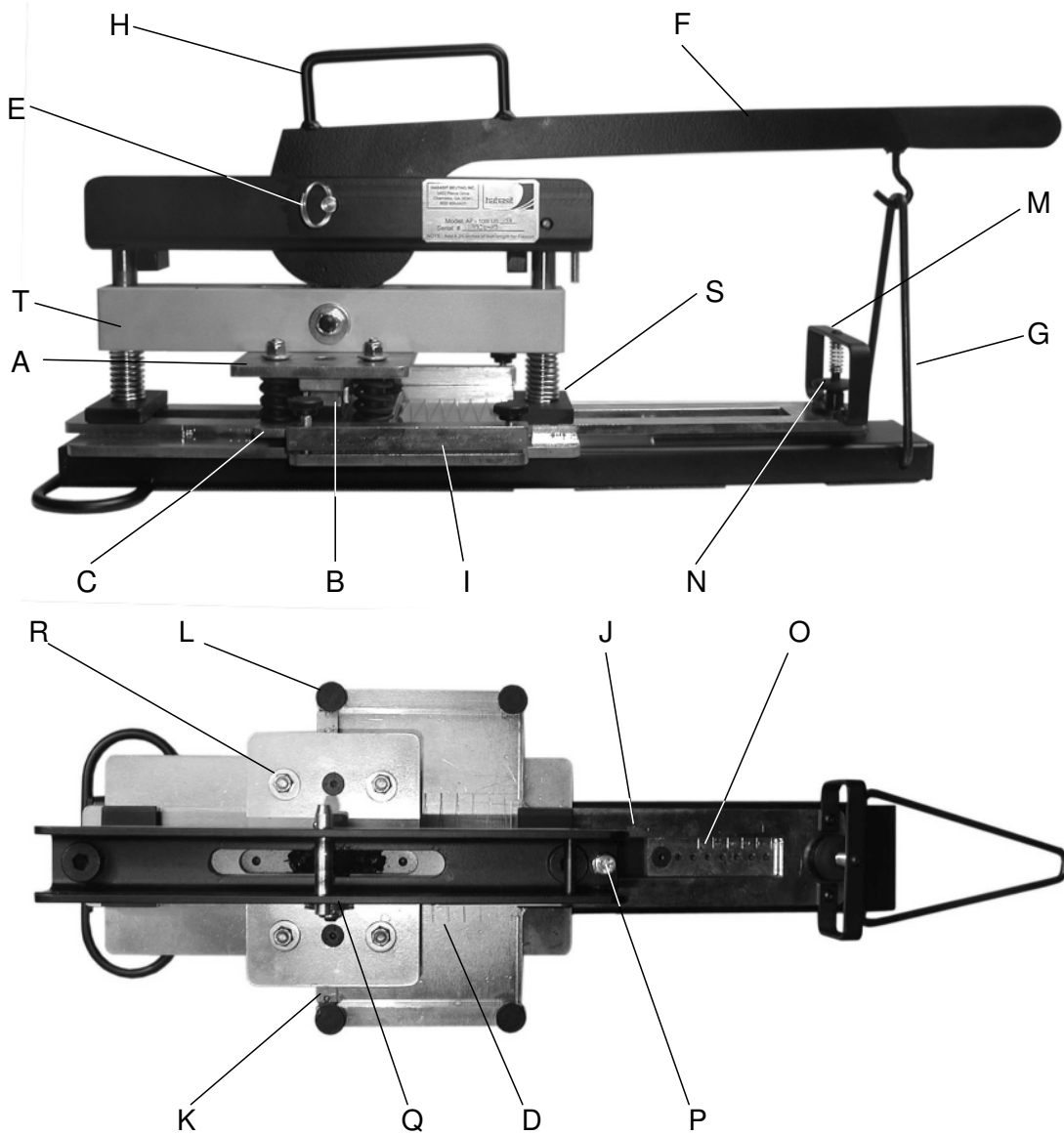
## 6. Technical data

Belt width [mm] [ <i>in.</i> ]	100	4
Belt thickness [mm] [ <i>in.</i> ]	6	0.24
Weight net [kg] [ <i>lbs</i> ]	13.5	30
Dimensions (L x W x H) [mm] [ <i>in.</i> ]	650 x 215 x 270	25.6 x 8.5 x 10.6



## 7. Illustrations

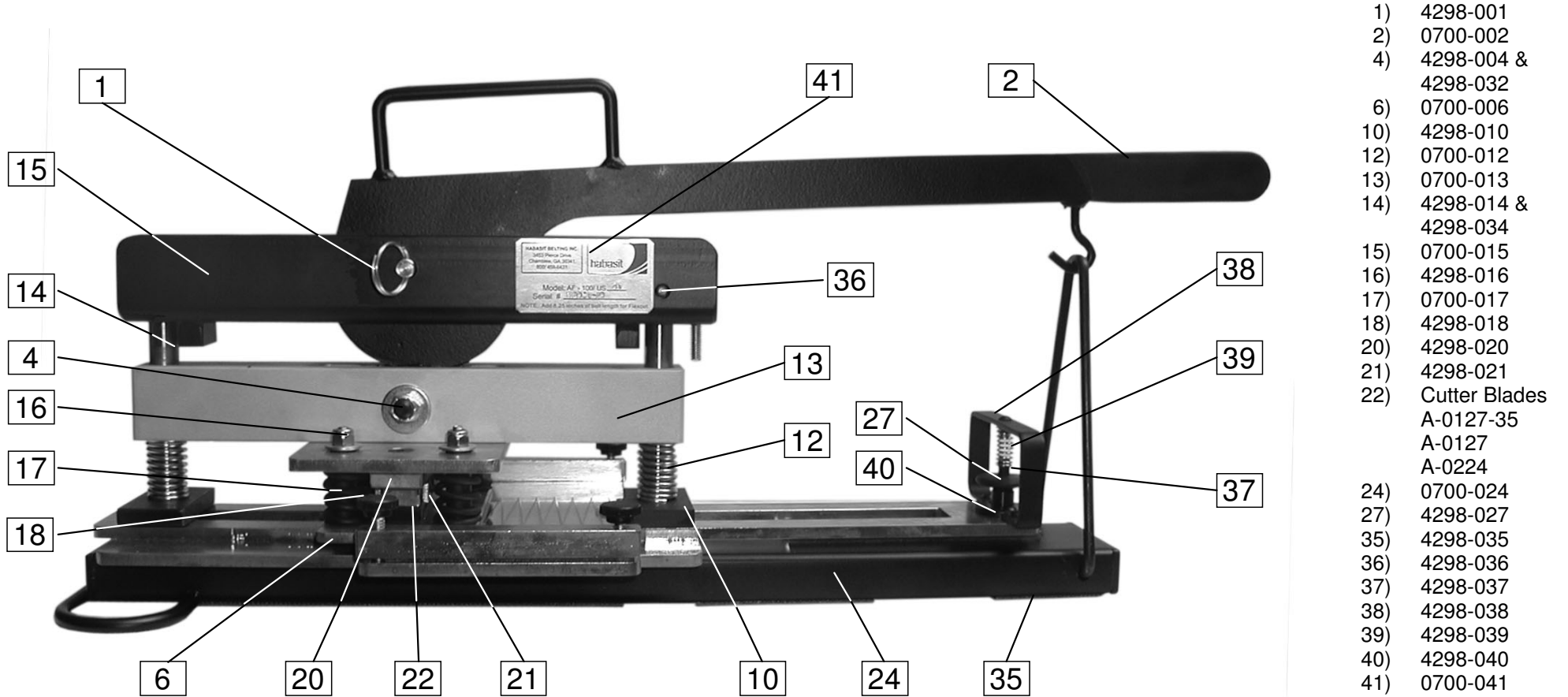
### 7.1 Overview Flexproof cutter AF-100/US



- |    |                 |    |                          |
|----|-----------------|----|--------------------------|
| A) | Cutting head    | K) | Belt guides              |
| B) | Cutting blade   | L) | Thumb screw              |
| C) | Stripper plate  | M) | Slide-plate handle       |
| D) | Cutting pad     | N) | Plunger knob             |
| E) | Shoulder pin    | O) | Indexing plate           |
| F) | Lever           | P) | Lever stop pin           |
| G) | Bail            | Q) | Cam follower bolt        |
| H) | Carrying handle | R) | Stripper-plate studs     |
| I) | Hold-down bars  | S) | Slide-plate guide blocks |
| J) | Slide plate     | T) | Crossbar                 |



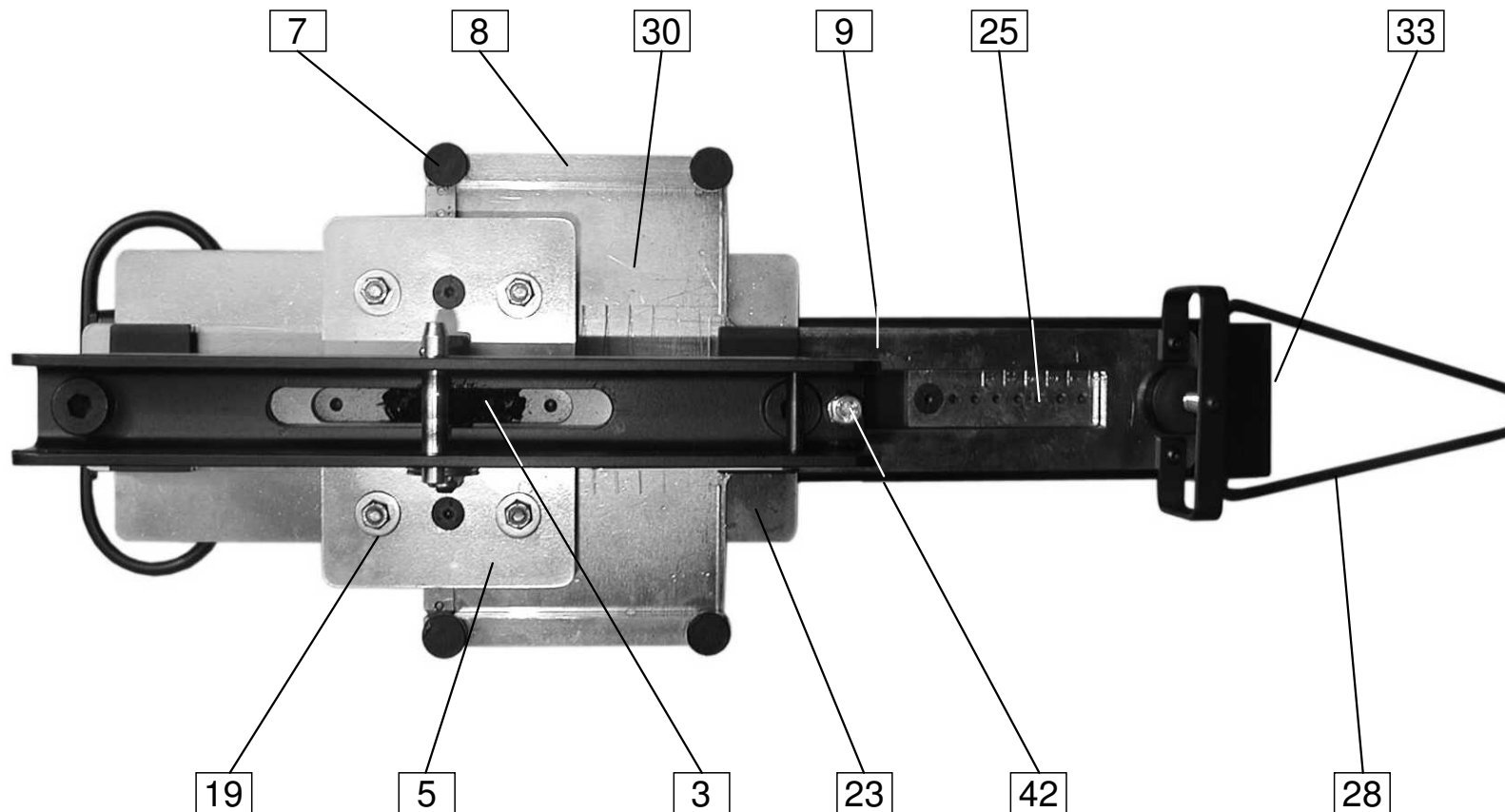
**7.2 Front view – Parts list I**



- 1) 4298-001
- 2) 0700-002
- 4) 4298-004 & 4298-032
- 6) 0700-006
- 10) 4298-010
- 12) 0700-012
- 13) 0700-013
- 14) 4298-014 & 4298-034
- 15) 0700-015
- 16) 4298-016
- 17) 0700-017
- 18) 4298-018
- 20) 4298-020
- 21) 4298-021
- 22) Cutter Blades  
A-0127-35  
A-0127  
A-0224
- 24) 0700-024
- 27) 4298-027
- 35) 4298-035
- 36) 4298-036
- 37) 4298-037
- 38) 4298-038
- 39) 4298-039
- 40) 4298-040
- 41) 0700-041



### 7.3 Top view – Parts list II



- 3) 4298-003
- 5) 0700-005
- 7) 4298-007
- 8) 0700-008
- 9) 0700-009
- 19) 4298-019
- 23) 0700-023
- 25) 0700-025 &  
0700-026
- 28) 4298-028
- 30) 0700-030
- 33) 4298-033
- 42) 4298-042



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### **Product liability, application considerations**

The proper selection and application of Habasit products, including the related area of product safety, is the responsibility of the customer.

All indications / information are recommendations and believed to be reliable, but no representations, guarantees, or warranties of any kind are made as to their accuracy or suitability for particular applications. The data provided herein are based on laboratory work with small-scale test equipment, running at standard conditions, and do not necessarily match product performance in industrial use. New knowledge and experiences can lead to modifications and changes within a short time without prior notice.

BECAUSE CONDITIONS OF USE ARE OUTSIDE OF HABASIT'S AND ITS AFFILIATED COMPANIES CONTROL, WE CANNOT ASSUME ANY LIABILITY CONCERNING THE SUITABILITY AND PROCESS ABILITY OF THE PRODUCTS MENTIONED HEREIN. THIS ALSO APPLIES TO PROCESS RESULTS / OUTPUT / MANUFACTURING GOODS AS WELL AS TO POSSIBLE DEFECTS, DAMAGES, CONSEQUENTIAL DAMAGES, AND FURTHER-REACHING CONSEQUENCES.

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