

# Tru-Linker Company, LLC

## Hand Crank Z-Linker Owner's Manual

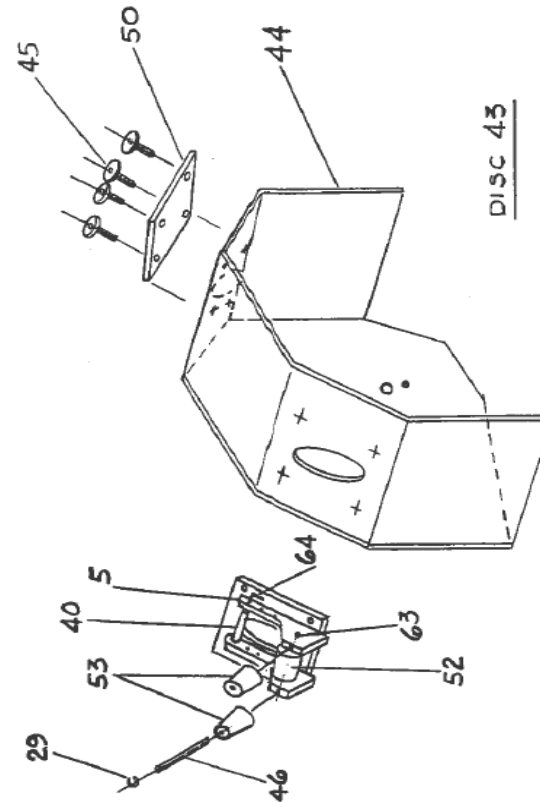
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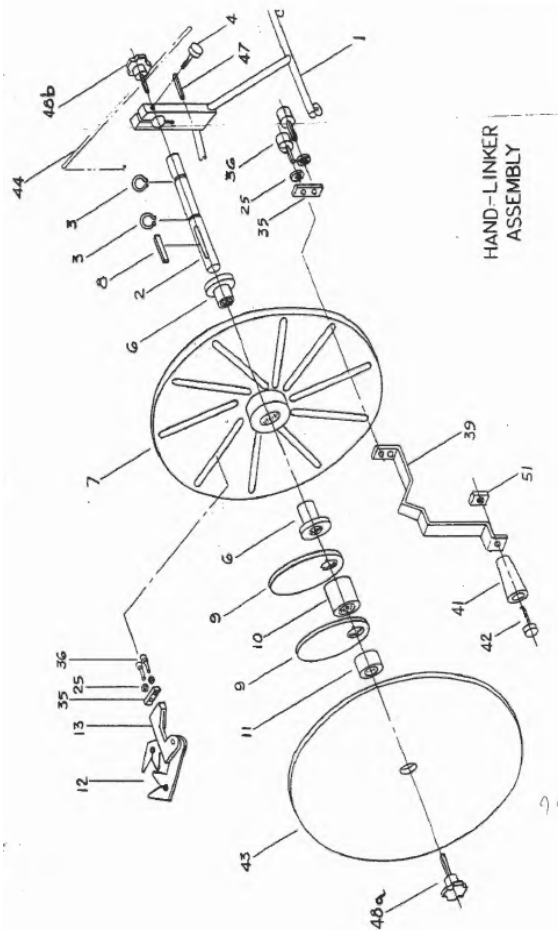
## 1. Introduction

The Hand Crank Z-Linker is a unique machine designed for use by small volume sausage manufacturers. This machine forms and cuts individual links from a length of casing.

Portable, light weight, and low cost are the key features of the machine. Other features include:

- Safe one-person operation
- Small size (20" x 20" x 22")
- Stainless steel linking blades
- Easy mounting – positioning
- Easily removable and adjustable components
- Portability and light weight (17lbs.)
- Simple maintenance
- Links casings 13-34mm in diameter with no adjustments
- Capable of making 2 link lengths – 4" and 5.25"





## 2. Description

### 2.1 Linking Head Assembly

The linking head assembly is a device mounted on a disc that forms and cuts an individual sausage link from a stuffed length of sausage casing. Spring loaded blades are activated by rollers riding on two cams. Rotation of the disc via the handle around the stationary cams activates the rollers which close the blades to form and cut the links. The five linking heads are mounted on the slotted disc in a predetermined location and are spaced equally around the disc. The cutters are hardened steel self-sharpening inserts.

### 2.2 Cams

Cams determine the finished link length. They are available in two sizes to make 4" and 5.25" links. The cams are non-rotating, solid nylon specially contoured discs. Each cam is designed to accommodate one roller on each side of the linking head. The cams are held in place parallel on the shaft with a key and spacer. The cams will be stamped with a right (R) and left (L) symbol for linker operation (See 5.2).

### 2.3 Safety Cover/Guide Roll Bracket

The Lexan safety cover is designed to protect the operator(s) from the rotating blades of the linking assemblies and to provide a feed path for the stuffed sausage strand. The guide roll bracket can be located on either right or left side to accommodate individual needs. **Never operate the Z-Linker without the guard in place.**

### 3. Installation

The Hand Crank Z-Linker may be placed into immediate service after inspection reveals no flaws.

A smooth, solid surface is required whereby the Hand Crank Z-Linker must be placed. The surface or table should be a comfortable height for the operator to feed in the strand of sausage, and turn the linker handle. Primary considerations are:

- Minimize distance between coil of sausage and the feed roller
- Firm support of machine
- Access to a stuffer and a table
- Suitable removal of links after discharge from machine
- Adherence to USDA cleanliness standards
- Determine right of left feed (See 5.2)

35	01X86	4	Clamp plate
36	01X87	8	10-24 x 7/8" Stainless steel screw
37	01X88	3	Adjustable casing support
40	01X01	2	Horizontal roller
41	01X92	1	Tapered Handle
42	01X93	1	5/16 x 1" shoulder stainless steel screw
43	01X94	1	Front disc guard
44	01X99	1	Cover without guide roll sub-assembly
45	01X95	8	10/24 x 7/8" Stainless steel screw
46	00X46	2	Pin, vertical guide disc guard
48A	01X97	1	Front plastic knob
48B	01X98	1	Back plastic knob
50	02X01	1	Guide roll bracket
51	02X02	1	1/14" - 20 Acorn stainless steel nut
52	00X99	1	Fixed horizontal roller
53	00X98	2	Vertical guide roller
54	02X03	4	Rubber foot
61	00X65		Teflon washer
62	02X11	1	1/4" Nut driver
63	02X12	1	5/16" Nut driver
64	01X02	1	Adjustable pin
65	05X02	4	Blade exchange

Diagram No.	Part No.	Qty.	Description
1	01X73	1	Frame
2	01X74	1	Main shaft
3	01X 75	10	External retaining ring
4	01X76	1	5/16 - 18 x 1" Stainless steel screw
5	01X 77	1	Guide Roll bracket sub-assembly
6	01X78	2	Flanged bushing
7	01X79	1	10" Disc
8	01X80	1	Stainless steel key (cam)
	01X81	1	Small cam
	01X82	1	Large cam
10	02X13	1	Cam spacer
11	01X83	1	End cap retainer
12	01X84	1	Hand linking head sub-assembly
13	01X38	1	Arm sub-assembly
17	00X64	1	Teflon washer (.015)
25	00X33	50	#10 Stainless steel washer
26	01X40	10	Roller Sub-assembly
29	00X36	20	Self-locking retainer ring
30	01X13	4	Cylindrical bearing
31	00X69	4	Compression spring
32	00X97	4	8-32 x 1/2" Stainless steel screw
33	00X66	4	Spring holder
34	00X70	4	Torsion spring

#### 4. Operation

Operation of the Hand Crank Z-Linker is a simple procedure that requires only one operator with minimal training. A sausage stuffer is required for providing the stuffed length of sausage casing for the linker. To begin manufacturing sausage links, proceed as follows:

- Be sure the Hand Crank Z-Linker is firmly affixed close by or adjacent to the sausage stuffer.
- Have a convenient tray or conveyor at the discharge end of the linker to receive cut links.
- Be sure the clear plastic guard is in place.
- Fill sausage casing and arrange in neat coil as close as possible beneath the feed roller
- Immediately feed one end of the stuffed sausage casing into the machine feed slot or sausage guide assembly. At the same time grasp the handle of the linker and turn it so that a linking head assembly picks up the end of the stuffed strand and carries it over the top of the linker
- Turn the handle in a slow, even motion to engage the linking heads in the smooth “pinch and cut” action forming the link.

## 5. Maintenance

### 5.1 Linking Head Assembly

- Correct adjustment of the linking head assemblies is critical to proper linking function.
- Linking head adjustment is done at the high point of the cam (maximum head closure). It can be done best by loosening the cam shaft lock bolt and rotating the cam until the high point of the cam faces up (12 o'clock). Then retighten the cam shaft lock bolt.

**Note; The keyway indicates the high point of the cam.**

The linking heads can now be adjusted by moving the head up or down in the slotted disc with the nylon rollers of the individual blades positioned on the high point of the cam.

Proper adjustment of the link head will produce 1/4" – 3/8" overlap of the cutting inserts. It is **ABSOLUTELY CRITICAL** that free play be allowed in this adjustment. Push down on the top of the blade. If you cannot lift the roller off of the cam at the high point, it is over adjusted or

feed in roller is minimized

Double link formed without crimp in center

Check for foreign material wedged in blades or inserts.

Check torsion springs. Replace if necessary.

Inspect bearing and Teflon washers located on the pivot shaft

Lack of crimp and torn ends on large diameter sausage

Check timing at faceplate. Adjust so linking heads have maximum opening at faceplate

## 1. Troubleshooting

Links crimped but not  
Cut apart completely

Check arm casting and  
blades making sure that  
they are not bent or  
warped.

Adjust overlap

Links are cutting, but  
Ends are ragged or torn

Check arm casting and  
blades making sure they  
are not bent or warped.  
Replace if necessary.

Check inserts for  
interference and  
alignment. Replace  
if necessary.

Check compression  
springs. Replace if  
Replace if necessary.

Check position of “Z”  
bars on blades.

Make sure the distance  
between sausage coil and  
feed roller is minimized

bottomed out. **OVER ADJUSTMENT** will  
cause severe damage to the linking heads.

- After adjusting linking heads properly, the cams must be adjusted for proper timing of the cutting action.

## 5.2 Maintenance

### Cams

Cams are supplied in two sizes to make 4” and 5.25” links. They are factory installed for left hand operation (cam “L” faces out. To change cams, remove Lexan guard, remove linking heads, remove Lexan guard and pull cams off the keyed shaft. Install in reverse order. Cam timing after adjustment should be (high point) approximately 7 o’clock (left hand) OR 5 o’clock (right hand).

(See drawing)

### Daily Procedures

All machine parts that  
Contain residual meat  
Or sausage product.  
All parts that may be dirty

Clean with USDA  
approved cleaner or  
mild detergent.  
Note: no caustic or acid  
based cleaners

Blow dry

Spray with USDA food  
grade oil.

Moving parts

Inspect-tighten any loose  
fasteners or parts

### Monthly Procedures

Entire machine

Inspect

Tighten all fasteners.  
Replace all parts that  
appear worn or cracked

### Quarterly Procedures

Compression springs,  
Teflon washers  
collapsed.

Replace springs that  
appear weak or

Replace Teflon washers  
if worn.

Linking head cutting  
surfaces

Check overlap and  
adjust if necessary.  
Check insert  
wear and interface.  
Replace heads having  
little or no interference.