PLAS-TIES

From Bagels To Cables…

XL-2 Manual

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XL2_030705

General Information

Thank you for your purchase of the XL-2 from Plas-Ties, manufacturers of high quality twist tying equipment.

Please familiarize yourself and/or any persons operating this machine with all functions by carefully reading this manual.

The XL-2 machine can be adjusted to tie almost any product gathered into a round shape from 3/8” diameter up to a maximum of 2” diameter.

High quality Plas-Ties tying ribbon is available in various spool lengths, colors and strengths. Your dealer or Plas-Ties Customer Service will assist with your replacement ribbon requirements.

Electrical power requirements for operating this XL-2 are found on the serial plate.

How The XL-2 Functions

Before operating or adjusting the XL-2, please read this section

The XL-2 machine will twist tie product(s) inserted into the tying area. The XL-2 machine can be adjusted to twist tie almost any product gathered into a round shape from 3/8” diameter up to a maximum of 2” diameter.

Stage 1: Product to be tied is manually inserted into the tying area and the product must come into contact with trigger switch. Trigger switch activates the XL-2 tying cycle and the stop guide ensures proper positioning. (Cycle time is approximately 3 seconds).

Please Note:

There is a second stop guide located on the underside of the top cover. The top guide should be aligned with the bottom guide.

Stage 2: Trigger switch activates the capacitor in the main drive motor to rotate a single revolution that causes the main timing cam to rotate clockwise.

Stage 3: The main timing cam activates the cutter cam follower, which in turn activates the Ribbon cutter knife.

Stage 4: Simultaneously to Stage 3, the scissor actuator assembly pulls the scissors forward and around the product in the tying area. The ribbon-forming arm ensures that the pre-cut ribbon is centered to the tying area and then lifts out of the way.

Stage 5: With the rotation of the main timing cam being approximately one halfway through its cycle, the ribbon will be around the product and the ribbon ends are positioned in front of the twister.

Stage 6: As the main timing cam completes its cycle, the twister activates, twisting the ribbon ends and securing the ribbon around the product. As the ribbon is twisted, the scissors retract to their home position.

Stage 7: As the scissors return to their home position, switches are activated which in turn activate the ribbon feed drive wheel and it presses against the ribbon idler wheel. The ribbon is fed between these wheels and gets pulled through at this time. The ribbon continues through the ribbon chute where it will stop until Stage 1 commences again.

Threading and Changing Ribbon Spool

Step 1: Turn the power switch “OFF”, unplug the power cord and remove any ribbon pieces and/or debris inside the XL-2.

Step 2: Remove empty ribbon spool by depressing the brake spool arm and then pull the spool straight away from brake spindle. Slide the new ribbon spool onto brake spindle. Feed the ribbon from the top of spool to under and around the roller wheel on the brake assembly.

Step 3: With the ribbon now directed toward the rear of the XL-2, look at both sides of the ribbon. One side has a “bump” (wire), the other is flat. Pull 1 foot of ribbon from the spool and feed into the rear of the XL-2.

Step 4: Turn the pressure release cam to separate the ribbon drive wheel and insert the ribbon through the ribbon guide, ensuring that the “bump” (wire) side is against wheel and into the cutter anvil guide, but not protruding beyond the cutter space.

Step 5: Release the pressure release cam to bring the ribbon drive wheel together, making sure the ribbon is between the restraint flanges on the ribbon drive wheel.

Tying Operation

Step 1: Support the product to be tied with both hands and insert into the left side of tying area when tying in the vertical position. ***Insert into bottom of tying area when in the horizontal tying position.***

Step 2: Hold the product in place until the product is twist tied. Tying cycle is approximately 3 seconds.

Step 3: The product may be removed from the tying area any time after the tying cycle is complete.

Please Note:
Periodically the ribbon length will need to be either lengthened or shortened. Slightly turn the Tying Diameter Adjustment Dial to the left to decrease ribbon length and to the right to increase ribbon length.

Always remove any ribbon pieces from the XL-2 before tying.

Adjusting XL-2 Tying Diameter

<u>Caution</u>

Before attempting any adjustments of this machine, the power switch should be in the "OFF" position and the power cord disconnected.

The XL-2 machine can be adjusted to twist tie almost any product gathered into a round shape from 3/8" up to a maximum of 2" diameter. Prior to adjusting any internal components of the XL-2, you must pre-determine the following:

1. Material Diameter
2. Chute Length
3. Ribbon Length

Step 1: Set Tying Diameter Dial

1. Rotate tying diameter adjustment dial to point arrow to the desired product diameter. This diameter will then align with and indicate ribbon length and the required chute length. Example: if the tying diameter is 2", then the chute length is 4" and the ribbon length is 9.5".

Step 2: Adjust Stop Guides

1. Loosen screw and move the stop guide to the correct product diameter.
2. Tighten screw. This aligns and centers the product to be tied directly in front of the twist shaft. ****Top guide is under top cover and should be adjusted to align with bottom guide.***

Step 3: Adjust Ribbon Drive Motor

1. Loosen the sockethead cap screw and slide the entire ribbon drive assembly to align with required ribbon length as indicated from Step 1.
2. Retighten the sockethead cap screw.

Step 4: Change Ribbon Chute

1. Remove screw and washer and swing scissor actuator rod out of the way.
2. Loosen screw and washer and lift out chute.
3. Install new ribbon chute and tighten screw. (Be certain that the ribbon chute is centered to the slot in the ribbon cutter anvil.)
4. Re-thread ribbon through machine.

Step 5: Test Tying Material

1. Reconnect power supply and turn the power switch on.
2. Insert desired material into left side of tying area and activate the tying cycle.
3. Fine tune ribbon length if required, by slightly rotating the Tying Diameter Adjustment Dial to achieve optimum ribbon length.

Troubleshooting

The following information is given as an aid for readily identifying any malfunctions which may occur during the operation of the Tie-Matic XL-2.

	CONDITION	CAUSE	REMEDY
Missing Ties	Ribbon around product but not twisted	a. Incorrect ribbon length b. Twister installed backwards	a. Adjust for longer length ribbon (see pg. 8) b. Unscrew twister and reinstall 180°
	Above problem but not consistent	a. Possible malfunction of Time Delay Relay yielding sporadic ribbon length	b. Replace Time Delay Relay
	Ribbon is carried back with scissors	a. Safety device on arm is releasing. Scissors not arriving at full forward position b. Cutter knife has misaligned	a. Remove ribbon from scissors. Determine if safety device is working properly. b. Adjust cutter anvil guide (see pg. 18)
No Ribbon Feed	Ribbon drive motor operates, but no ribbon is driven out	a. Ribbon drive pressure wheel is not in contact with ribbon drive wheel. b. Chain sprocket loose on drive wheel	a. Refer to pg. 6 to check if ribbon is threaded correctly b. Check sprocket, tighten set screw
	Ribbon jams behind anvil	a. Interference with ribbon feed b. Misalignment of scissors c. Knife not returning to home position d. Return spring broken or not assembled e. LS-3 (Bottom switch) is releasing first as scissors leave home position	a. Clear ribbon path of debris b. Scissor adjustment (see pg. 18) c. Reset anvil position (see pg. 18) d. Check spring, replace if necessary e. Adjust LS_3 arm out so that both top (LS-2) & bottom (LS-3) switches activate in close unison
	Ribbon Motor does not run	a. LS-2 (Top switch) is out of adjustment b. Time Delay Relay is defective	a. Adjust LS-2 as in e) above b. Replace Time Delay Relay
Machine recycles constantly when holding in trigger switch		a. Control Relay is defective	a. Replace Control Relay
Machine will not cycle	Ribbon feeds out constantly	a. LS-3 (Bottom switch) is not activating on scissor return	a. Adjust LS-3 arm outward so that LS-2 and LS-3 activate in close unison
	Main drive motor M-1 runs	a. Trigger switch (LS-1) is out of adjustment	a. Adjust to hear a click upon releasing of trigger
	Depressing trigger has no effect	a. Trigger switch (LS-1) out of alignment b. Safety switch (LS-1) not closed c. Fuse blown	a. Adjust to hear a click upon closing trigger b. Adjust to hear a click upon closing cover c. Check fuse, replace if necessary
Tie is not tight		a. Ribbon length is too short	a. Increase the ribbon length (see pg. 8)

Major Component Description & Adjustments

Brake Assembly: Holds the ribbon spool and creates spool “drag”. No adjustment. See brake installation instructions.

Ribbon Chute: Guides the pre-cut ribbon through to the scissor. Critical that the chute is centered to the slot in the ribbon cutter anvil. Correct chute length must be utilized according to diameter of product. To adjust, see Scissor.

Ribbon Drive Motor: Pulls ribbon through machine. Adjustment is critical to ensure that desired length of ribbon is pulled through during the tying cycle. To adjust:

1. Loosen he sockethead cap screw.
2. Slide the entire ribbon drive assembly and align with the desired length mark on machine chassis.
3. Tighten the sockethead cap screw.

Stop Guide: Ensures product to be tied is centered to the twister. To adjust:

1. Loosen screw.
2. Align appropriate diameter to marker.
3. Tighten screw.

Tying Diameter Adjustment Dial: Provides visual calibration for product diameter, required ribbon chute length and ribbon length for the ribbon drive motor setting. It is also the fine-tuning adjustment controller for ribbon length.

Motor and Cam: Controls the timing functions of overall tying operation. Timing adjustment is critical. Correct setting has cam set in the home position when XL-2 is inactive. The home position is correct when bearing is positioned in notch. To confirm and adjust this setting:

1. Disable ribbon feed by turning idler lockout and then activate the tie cycle once.
2. Check cam position for home position.
3. If setting is not correct, loosen wing nut.
4. Turn screw. (Clockwise = delay) (cc = advance)
5. Test cycle to confirm. Tighten wing nut when correct.
6. Turn idler lockout to engage ribbon feed.

Scissor: Places the ribbon around the product to be twist tied. Alignment is critical. Correct setting has the ribbon chute centered to the ribbon cutter Anvil slot. To adjust:

1. Remove screw and washer.
2. Loosen one of the locknuts on the scissor-actuating rod.
3. Turn rod bearing until the ribbon chute on the scissor is centered to the slot in the Ribbon Cutter Anvil.
4. Tighten locknut and reinstall screw and washer.

Twister: Twists ribbon ends securing the ribbon around the product. Twister position is critical. Correct position is in a vertical position when inactive. To adjust:

1. Loosen twister sprocket set screw.
2. Turn twister and shaft until twister is in a vertical position.
3. Re-tighten setscrew.

Ribbon Cutter: Cuts the ribbon to length. Smooth action between knife and cutter anvil is critical. To adjust:

1. Lift cutter cam follower and rotate cutter cam clockwise until the cutter cam follower rests on the lobe of the cutter cam.
2. Loosen the screws that secure the cutter anvil.
3. Hold the cutter anvil against the knife.
4. Retighten the screws.

Important Make certain that the knife is not too tight. The knife must not “stick”, but be secure enough to cut the ribbon cleanly.

Brake Assembly Installation

Vertical Mount - Tying product in a vertical Position

(Standard equipment – use with large or small brake)

1. Mount assembly on mounting place using two screws provided.
2. Follow ribbon installation and threading instructions (see operating instructions).

Horizontal Mount – Tying product in a horizontal position

(Optional part# 56108. Use with large brake only)

1. If currently set up for horizontal operation, remove brake assembly by removing the two screws.
2. Mount brake assembly on mounting plate with the same screws.
3. Lay machine on left side so that it is supported by the mounting stand.
4. Bolt the side mount stand to the XL-2 external chassis bracket.
5. Follow ribbon spool installation and threading instructions (see operating instructions).

Vertical Mount with Pedestal Stand

Horizontal Mount with Pedestal Stand

Pedestal Mount – Tying product in either position

(Optional part# 505R033, plus use special brake# 505D231-1)

1. Remove cover and micro switch/safety switch.
2. Loosen capacitor.
3. Pull apart Molex 9 pin connector.
4. Remove legs from bottom of chassis and remount to pedestal.
5. Reinstall / tighten / reconnect steps 1,2,3.

Please Note:

The Brake Beam positioning has the Roller Assembly pointed down when installed on the Pedestal Mount.

Major Parts Listing

Index No.	Part#	Description	Qty.
1	505B012	Cam Assembly, Cutter Actuator	1
	505B126	Support, Cutter Cam	1
	505C127	Gear Segment	1
	56003	Bearing #77R-8	2
2	505B205	Rod, Scissor Actuator	1
	505B129	Spacer, Cutter Cam	1
	56000	Bearing #TR4 Rod End	2
	56503	Nut, Hex – _-28	2
3	505B015	Pinion, Shaft Assembly	1
	505B019	Support Assembly, Twister Drive	1
	505B191	Spacer, Sprocket – Twister Drive	1
	505B192	Sprocket, Driver – Twister	1
4	505B122	Guard, Chain – Twister Drive	1
	56302	Chain #35	2
5	505B018	Support Assembly – Twister	1
	505B189	Shaft, Twister	1
	505B212	Twister	1
	505B117	Sprocket	1
6	505B214	Chute, Fixed	1
7	16402	Pan Head Phillips screw 8-32 x 3/8”	2
8	505C101	Scissor Assembly, Left	1
9	505B215	Chute, 1 _” long – optional	
	505B216	Chute, 2” long – standard	1
	505B217	Chute, 2 _” long (special) – optional	
	505B218	Chute, 3” long – optional	
	505B219	Chute, 3 _” long (special) – optional	
	505C220	Chute, 4” long – optional	
10	505C102	Scissor Assembly, Right	1
	505B202	Spacer	2
11	505C103	Cover, Scissor	1
	505B104	Support, Scissor Cover	1
12	505B107	Support, Ribbon Forming Arm	1
	505B029	Lever, Ribbon Forming Arm	1
13	505C105	Cam, Scissor Guide	1
14	505C023	Arm Assembly, Scissor Actuator	1
	505B010	Drag Link Assembly	1
15	505B020	Scissor Actuator Arm Assembly	1
	505B210	Detent, Spring	1
16	505B011	Bell Crank Assembly, Cutter Actuator	1
17	505B133	Connector, Cutter Actuator	1
	505A130	Link, Cutter Actuator	1
	505B131	Screw, Hex Socket Set – _-20 _	2
	505B134	Block, Cutter Actuator	1
	117494	Spring, Cutter Actuator	1

Major Parts Listing

Index No.	Part#	Description	Qty.
18	505B013	Trigger Assembly	1
	505B176	Cam, Bag Switch	1
	505B177	Spring, Trigger	1
19	505B154	Guide, Knife	1
	505B153	Knife	1
	505B168	Cover, Knife Anvil	1
	505B169	Anvil, Knife	1
20	505B144	Retainer, Slide Plate	1
21	505B197	Wheel, Ribbon Feed Drive	1
	505B159	Sprocket, Ribbon Drive Wheel	1
	505B200	Shaft, Ribbon Feed Wheel	1
22	505C024	Plate Assembly, Ribbon Feed	1
	505B119	Spacer	1
23	505B025	Wheel Assembly, Ribbon Idler	1
	505B201	Receiver	1
24	505B014	Lever Assembly, Ribbon Wheel	1
25	505B151-1	Ribbon Guide, Single Groove _“ option	1
	505B151-2	Ribbon Guide, Double Groove _“ option	1
	505B151-3	Ribbon Guide, Single Groove 5/32“ option	1
26	505B152	Ribbon Guide, Flat (5/32”)	1
27	505B026	Cam Assembly, Idler Lock-out	1
	56940	Spring	1
28	505B180	Bottom Stop Guide	1
	505B184	Top Stop Guide (under top cover)	1
29	505B171	Chain Guard (for main motor)	1
	505B155	Chain Guard (ribbon drive)	2
30	505D172	XL-2 Frame	1

PARTS LIST – ELECTRICAL

Index No.	Part#	Description	Qty.
1	506341	Capacitor	1
	56913	Capacitor Cover	1
	16932	Capacitor Clamp	1
2	505B222	Track, Mounting	1
3	56933	Socket, Relay #RS-8	3
4	56922	Relay (115V) GV-DPDT-115A	3
	56822	Relay Clips	1
5	506340	Socket Timer	1
6	505B132	Relay, Time Delay (115V)	1
	56403	Strain Relief	1
6A	56905	Knob #409-D2-K1 Potentiometer for Time Delay Relay (R1)	1
7	56908	Fuseholder #342028	1
	56909	Fuse (115V) AGC-5 (F1)	1
	16912	A.C. Cord	1
9	56924	On/Off Switch and Lamp (S1 and L1)	1
	56970	Optional Foot Activated Switch	1
10	505D142	Control Box Chassis	1
	505C190	Cover, Back	1
	505C225	Cover, Front	1
11	16953	Circuit Breaker 1.5 Amp (CB1)	1
12	16907	Microswitch (LS1, LS2, LS3, LS4)	1
13	56959	Main Motor (M1)	1
	505B172	Main Motor Sprocket	2
	56928	Transformer #GSD-350(230V) Options	1
14	505C027-1	Ribbon Feed Motor (M2)	1
	505B158	Sprocket Ribbon Feed Wheel	1
	505B228	Sprocket	1

Electrical System Functions

Schematic illustrates condition of all switches when the XL-2 is at rest (in between tying cycles) with cover closed (LS4 closed).

When the product to be tied is inserted into the tying area, Trigger Switch (LS1) closes and activates the main motor and cam. As the main motor and cam begin to turn, the cam closes top and bottom cam switches (LS2 & LS3) activating relays (K2 & K4).

Then, when the main motor and cam finish one complete rotation, the cam switches are reopened causing three effects:

1. Relays (K1 & K#) are activated, disabling the main motor and cam.
2. Timing relay (K4) begin its delay cycle.
3. The ribbon feed motor begins to turn.

When timing relay (K4) times out (depending on the setting of the “Tying adjustment Dial”), all relays deactivate, the ribbon feed motor shuts off, and the unit is once again at rest.

PREVENTATIVE MAINTENANCE RECORD

Machine Name (OB) No. _____ Model No. _____

Type _____ Department _____

Serial No. _____

H.P. _____

Volts _____

Phase _____

INSPECTION SYMBOLS:
. Functional (Safety)
(R) Repair
(G) General

Date	Symbol	Description	Initialed by

Maintenance

Never Over Lubricate

Lubricate with grease on the gears and chains, and with a light machine oil on moving parts.

*** Weekly** **🏳 Monthly** **❄ Yearly**

	Schedule	Weekly	Monthly	Yearly
Machine				
Sprocket	🏳			
Cam (Timing & Cutter)	🏳			
Scissors	*			
Cutter (Adj.)	*			
Pressure Wheel	*			
Drive Wheel	*			
Switch (Trigger)	🏳			
Chains	🏳			
Sprockets	🏳			
Brake Arm	*			
Gears	🏳			
Thorough Component Check	❄			
Electrical				
Motor	🏳			
Switches	🏳			
Lubrication				
Gears – Grease (LT)	🏳			
Chains – Grease (LT)	🏳			
Moving Parts & Pivots Oil (LT)	🏳			
Safety				
Machine Cover	*			
Housekeeping				
Clean machine & area	*			

XL-2 Replacement Ribbon Spools

High quality Plas-Ties tying ribbon is available in various spool lengths, colors, materials and strengths. Your dealer or Plas-Ties customer service will assist with your replacement ribbon spool requirement.

Please note that all spool lengths will fit machines equipped with the large brake or special brake assemblies and machines equipped with the small brake assembly can accommodate spools up to 2000'.

All spools are shipped in case lot with 5 spools per case. Colors include red, white, blue, green, yellow, orange, black, brown, and tan. Custom spools are available.

8.5" x 2" Wide Spools

Part# 311 2000' Plastic 27 ga 5/32" widths – all colors
Part# 312 2000' Plastic/Paper 27 ga 5/32" widths – all colors
Part# 313 1500' Plastic/Paper 24 ga 5/32" widths – all colors
Part# 314 1500' Plastic 24 ga 5/32" widths – all colors
Part# 316 2000' Paper 27 ga 5/32" widths – all colors
Part# 318 2000' Metallic 27 ga 5/32" widths – Red, Gold, Blue, Silver, Green

10" x 4" Wide Spools

Part# 303 4000' Plastic/Paper 24 ga 5/32" widths – White
Part# 101 3000' Paper 2-27 ga _" widths 1/8" spacing – White
Part# 102 2000' Paper 2-24 ga _" widths 1/8" spacing – White

Warranty – Service – Parts Information

From date of purchase, all components and workmanship of Plas-Ties equipment are warranted against normal usage defects for a period of 90 days. This warranty period commences on the date of purchase and excludes damage due to negligence, failure to use the equipment as instructed in this manual, operating the machine with ribbon material other than that of any unauthorized repair or modifications.

Warranty coverage is limited to the Continental United States, Alaska, Hawaii, Puerto Rico, and Canada.

For warranty, service, parts and replacement tying ribbon, call Plas-Ties customer service at 800-854-0137 Monday through Friday or by contact the dealer where originally purchased.