

**TK-FLEX<sup>TM</sup>**  
**MECH**  
**Service Manual**

July 2000

**Sho-Rack<sup>®</sup>**  
**by**  
**Kaspar Wire Works<sup>®</sup>**

For Assistance and Parts Contact:  
PO Box 1127 Shiner, Texas 77984  
(361) 594-2911 (800) 527-1134 [shorack@shorack.com](mailto:shorack@shorack.com)

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## CLEANING AND GENERAL CARE

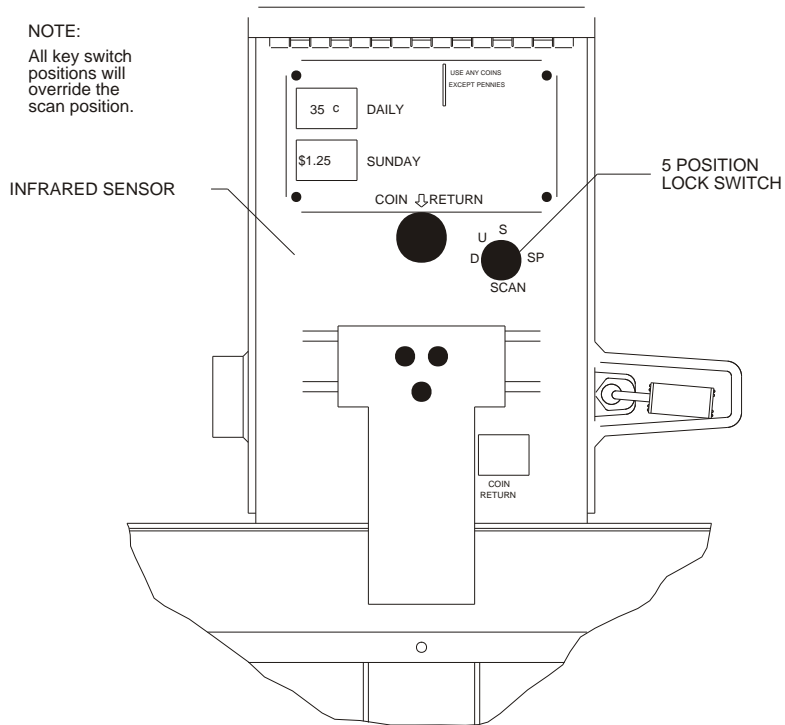
The TK-Electronic® and TK-Total® Mechs have no totalizer arm or wheel. They have fewer mechanical parts to wear out, adjust or jam making them less sensitive to dust, dirt or grime. The steel chassis, weather-coated circuit board, gold plated switches and contacts provide unmatched durability and help eliminate corrosion. Excess dirt or dust can be blown out with air. DO NOT wash the Mechs and DO NOT spray WD-40 into the Mechs. If something is jammed in the coil plates, they can easily be removed to clear the foreign object. (See page 5 of Service Manual)

Amsoil 100% Synthetic 5W-30 Motor Oil (Winterlube Oil) is only used on the studs that have working parts, including the studs that have rollers attached. Some areas of the Mech receive light applications of Lubriplate 105.

# INFRARED SENSOR AND FIVE POSITION LOCK SWITCH

The Infrared Sensor may be used with all Sho-Rack Electronic mechs. This sensor allows communication with Sho-Rack scanners to change prices and to retrieve sales information stored in the circuit board. The key locked in "Scan" Position (6:00 o'clock) is for all Full Audit Electronic Mechs.

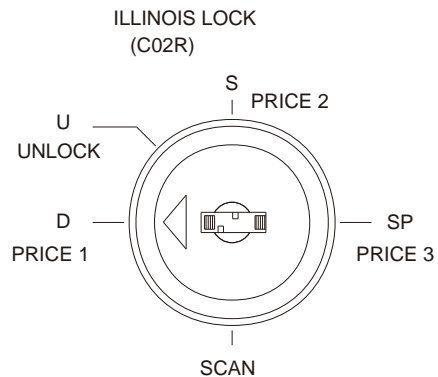
Key locked in "D" position is for daily price papers (9:00 o'clock position). To change to Sunday price, insert key and turn to "S" (12:00 o'clock position) and remove key. Turning key between daily and Sunday positions to "U" (10:30 o'clock position) will automatically unlock the paper door for service. "SP" position (3:00 o'clock) is used for special or third selling price selection.



## LOCK AND KEYSWITCH

"TK Electronic Keyswitch Positions"

Since January, 1997, a one-piece assembled keyswitch with 150 key number options was available from Illinois Lock Company.

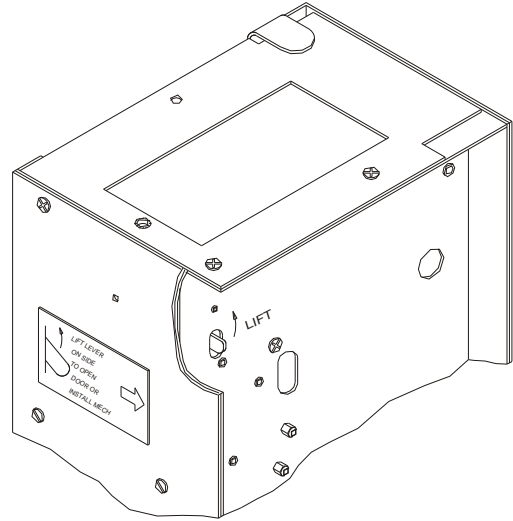
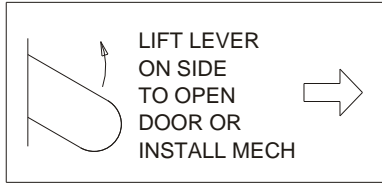


# LATCHING SYSTEM

"Opening Rack Door Manually For Proper Mech Installation/Service Unit"

The rack door can no longer be opened by pushing up on the T825 latch roller. This is because of design changes of certain parts. The rack door can only be opened manually when the door latch lever is activated. This lever must be activated when Mech is installed into rack. If lever is not activated, rack door will not close easily.

Follow these instructions for proper Mech installation and to open paper door.



## DOOR HOOK ADJUSTMENTS

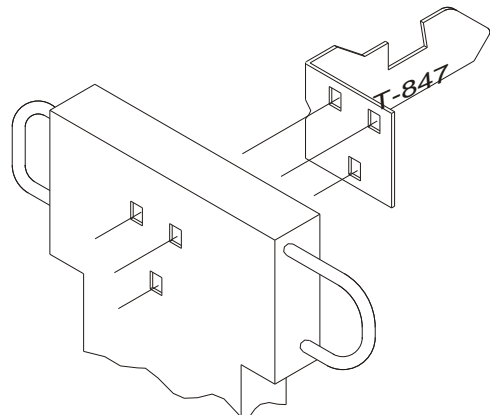
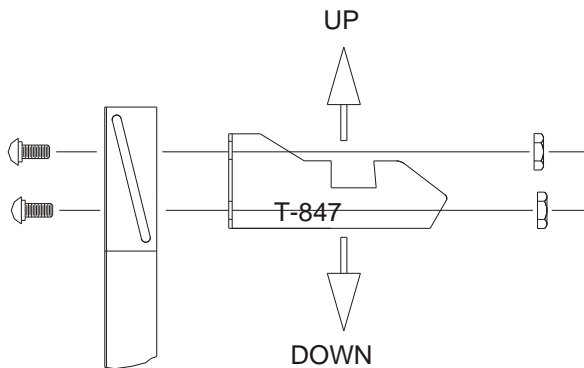
"Door May Not Open or Opens Without Money"

### DOOR HOOK T-847

The new style TK Electronic Mech will only operate with the T-847 (dash) door hook. Old style door hooks T804 and T847 are too short and will not activate the Mech latching system.

### POSITION OF DOOR HOOK

The T-847 door hook must be adjusted lower than the TK-Mech, \$3.00 TK-Mech or old style TK Electronic Mech. When the door hook adjustment plate is used, set hook lower so door will not close all the way. Door hook must be set as low as possible for proper operation.

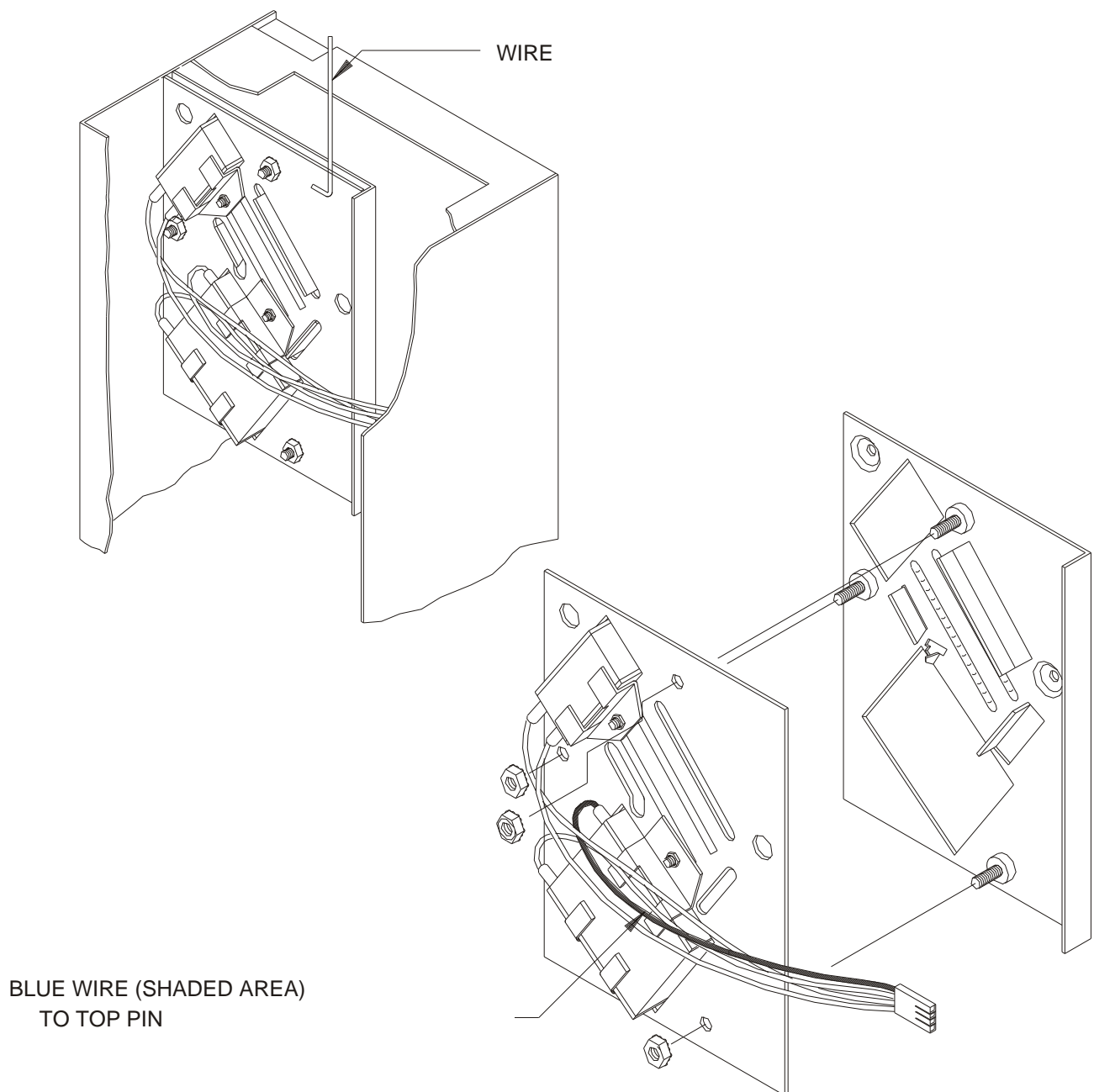


## COINS OR FOREIGN OBJECTS LODGED

### IN COIL PLATES

"Coins Will Not Fall Through Coil Plates"

The Coil (Coin Guide) Plates on the new style TK Electronic Mech are stationary and do not swing open when the coin return button is activated. If an object is lodged between the plates, it may be cleared by removing the T811 (Top Cover Plate) and inserting a wire (bent into a hook shape) to remove the object through the top of coil plates. If necessary, the stationary Coil (Coin Guide) Plates may be taken apart by removing 3 (8-32) nuts. (Use 11/32 nut driver.) The outside plate then can be removed to clear any foreign object or jam. Be sure to reconnect the coils to the circuit board with the blue wire to the top pin.



# TOTAL PRICE CHANGER - TPC

"Changing Prices on TK-Total and K-Total"

Kaspar Sho-Rack has the TPC (Total Price Changer) to make changing the prices on your TK-Total and K-Total Mechs affordable, simple and fast. The TPC uses Dip Switch Banks to set your desired price. NO PC or programming is required.

To set your prices, use a pointed object to push in the Dip Switches for Price 1 (Daily), Price 2 (Sunday) and Price 3 (Special) as illustrated in Figure 1. Set the Dip Switches to total each of your prices. Plug the wire into the Price Change connector on the back of your mechanism as shown in Figure 2. Press the Push Button Switch (Send) for one second. The Green "OK" light will blink and beep once to indicate a successful price change. Red will signal failure and blink and beep three times. Run coins through the mechanism to check each price for accuracy. Two light blinks on fail means the battery is low in the TPC. Replace with a 9 volt battery.

FIGURE 1

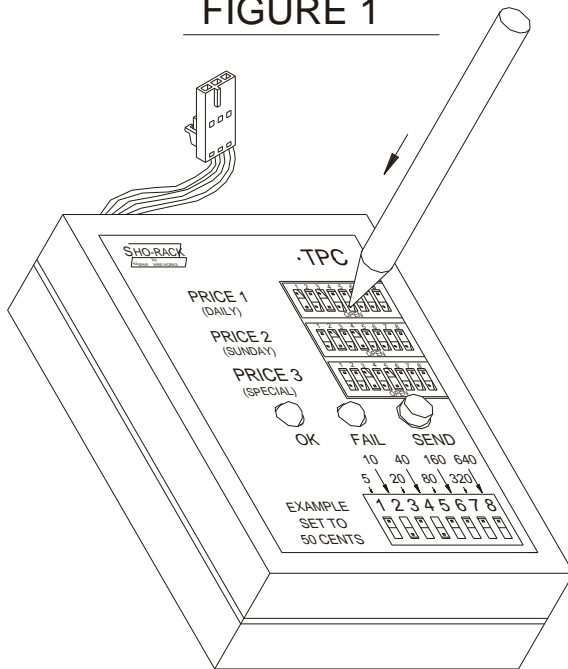
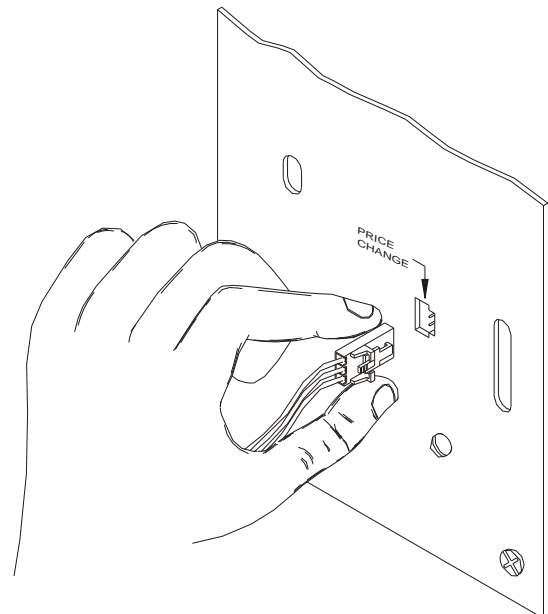


FIGURE 2



# ERROR LIGHT

"Low Battery, Coil Jam and Reset Button"

The Circuit Board on the TK Electronic /Total Mech is designed to check all functions once daily. The LED (error light) is red in color and is visible through a hole in the T885E Back Mounting Plate. If no error is present, the LED will have one flash every (5) five seconds showing that the Mech is working properly.

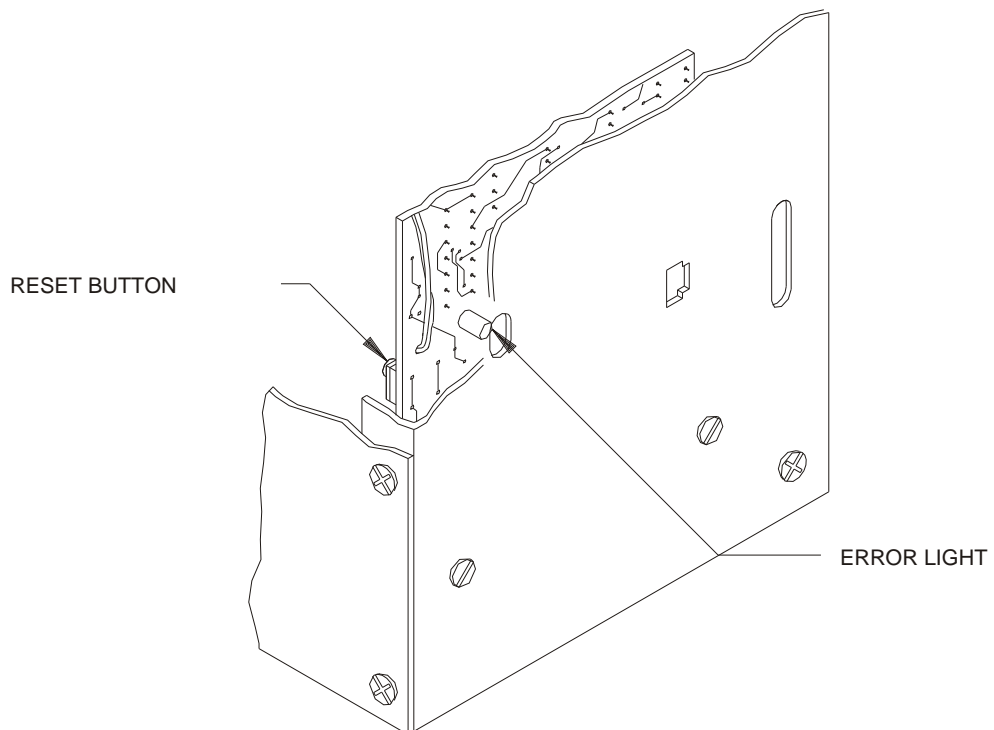
When an error occurs, the LED will flash two or three times (depending on error) until the error is cleared. See error light codes below.

- 1 Flash - All functions working properly
- 2 Flashes - Low battery (see error code list next page)
- 3 Flashes - Coil jam or other error (see error code list next page)

When any customer thinks they have an error condition of any kind, they should press the RESET button once for about one second, then release. (See error code list next page.)

If for some reason the error light will not reset itself back to one flash, disconnect the battery and connect again to check for proper connection. If error flashing continues, battery may need replacing or a jam may need to be cleared.

If error light is not flashing the Mech is probably not powered. Press the reset button and check error light for flash. If this does not work, check battery connection or replace battery.



## NOTE:

THIS RESET DOES NOT ERASE ANY PRICE, CALIBRATION, OR SALES DATA STORED IN THE MECH MEMORY.



# FLEX™ MECH PARTS LIST

PART NO	ILLUS NO	DESCRIPTION	PRICE CODE NO	PART NO	ILLUS NO	DESCRIPTION	PRICE CODE NO
T-81	1	Receiver Door Link	5021	T-900	32	Keylock Ext. Harness - 7652-6 (Length 11")	4820
T-800-E	2	"E" Chassis	4800	T-901	*	Lock Assembly Retainer Ring - 5105-21	4821
T-801-E	3	Inside Coin Guide Plate (Stainless Steel)	4801	T-902	*	Nylon Cable Clamp - 3352	4822
T-802-E	4	Outside Coin Guide Plate (Stainless Steel)	4802	T-905	*	Motor RF-37-370CA-15370	4825
T-806	5	Hold Down Assembly	5070	T-800 - T-824-E	35	Extension Spring	5037
T-808	6	Coin Return Door	5019	T-800E - T-835	36	Extension Spring	5011
T-809-F	7	Coin Receiver Door	4875	T-800E - T-842	37	Extension Spring	5016
T-810	8	Top	5066	T-835- T-840	38	Extension Spring	5035
T-811	9	Top Cover Plate	5065	T-800E - T-820-E	39	Extension Spring	5042
T812-F	10	Side Cover	4876	T-82 (3)	40	Rollers	5006
T-820-E	11	Latch Release & Anti-Cheat Stop	4804	T-80	41	Roller	5015
T-824-E	12	Coin Return Bar & Cancellation	4805	T-43 (2)	42	Coin Guide Spacers (In Field Replacement)	5024
T-825	13	Latch	5047	T-807-F	43	Side Mounting Plate	4855
T-830	14	Cushion Arm Link	5046	EM-13	44	Disc Latch	4826
T-835	15	Rocker Arm	5009	EM-14	45	Release Disc	4827
T-837	16	Actuator Bar	5010	T-909 (6)	*	#4 Internal Shakeproof Washer	4834
T-838	17	Rocker Arm Connector Link	5007	T-911	*	Molex 2 Pin Connector 50-57-9202-D	4836
T-840-F	18	Receptacle Arm & Sale Acceptance	4877	T-913	54	Chicago Retainer Clip for IR Sensor	4838
T-841-F	19	Rocker Arm Link	4878	T-892-E	56	Solenoid Linkage & Latch Release	4844
T-842-E	20	Coin Return Door Arm	4854	T-917-F	57	2.7VDC Flex Solenoid BP-257	4882
T-854	*	National Cylinder Lock Retainer Clip	5048	T-918-E (2)	58	2-56 X 1/8" RPMS	4846
T-855 (16)	*	M4 X 8MM Pan Head Machine Screw	5081	T-919-E	59	Cancellation Flag	4847
T-856 (1)	*	M4 X 8MM Flat Head Machine Screw	5082	T-920-E	60	Return Cancellation Linkage	4848
T-857 (13)	*	M4 X .7 Hex Nut	5083	T-308	61	Extension Spring	4960
T-857-1 (2)	*	M4 X .7 Nylon Stop Nut	5099	KM-8-0-10	62	Bushing	4883
T-881-E (3)	22	Bolt on Coil Mount	4807	T-921-E	63	Illinois Lock (Specify Key Number)	4850
T-885-F	23	Back Mounting Plate	4879	T-922-E	64	Illinois Lock Retainer Clip	4851
T-886-F	24	Baffle	4880	T-914	*	Jam Washer #6003	4839
T-887-E	25	Coin Return Linkage	4810	CM-100-68 (3)	*	6-32 Kep Nuts	1059
T-892	27	Coil Assembly - 58507-101 (200 X 175)	4812	CM-100-71 (3)	*	8-32 Kep Nuts	1061
T-893-F	28	Flex Circuit Board - 57561-U50 (Full Audit)	4881	CM-100-63 (4)	*	6-32 X 5/16" Screws	1055
T-896	30	IR Extension Wire Assembly (Length 5")	4816	5133-9ZF	A	"E" Ring (For 3/32" Dia. Shaft)	5074
T-897	*	Micro-Switch - 311 SM701-T (Motor Style)	4817	5133-12ZF	B	"E" Ring (For 1/8" Dia. Shaft)	5075
T-898	31	IR Sensor - 47571	4818	5133-15ZF	C	"E" Ring (For 5/32" Dia. Shaft)	5076
T-899	*	P/N 413-1AA1 1" Plastic Cap Plug	4819	5133-18ZF	D	"E" Ring (For 3/16" Dia. Shaft)	5077

Note: \* Not Shown or Illustrated

# FLEX™ MECH PARTS LIST

## FLEX™ INSPECTION PROCEDURES

Symptom Observed	Cause/Action
Error light does not flash	<ul style="list-style-type: none"><li>* Press reset button</li><li>* Dead battery</li></ul>
Error light flashes twice	<ul style="list-style-type: none"><li>* Press reset button</li><li>* Reconnect battery</li><li>* Replace battery if necessary</li></ul>
Error light flashes three times	<ul style="list-style-type: none"><li>* Remove jam from coil plates</li><li>* Coil set disconnected or plugged in wrong on circuit board (blue wire on top)</li><li>* Press reset button and insert coins</li></ul>
Rack door will not open for any reason	<ul style="list-style-type: none"><li>* Door hook too high</li><li>* Wrong door hook (T-847)</li><li>* Dead battery</li><li>* Rack door out of alignment</li></ul>
Rack door opens without money	<ul style="list-style-type: none"><li>* Door hook too high (lower door hook)</li></ul>
Rack door will not open for key, but works with cash/scanner	<ul style="list-style-type: none"><li>* Keyswitch wires broken or loose</li><li>* Keyswitch or lock installed wrong</li><li>* Key turned to wrong setting</li></ul>
Rack door will not open for scanner, but works with cash/key	<ul style="list-style-type: none"><li>* IR sensor wires broken</li><li>* IR sensor damaged or painted face</li><li>* Scanner IR damaged or broken</li><li>* Power from scanner to IR head failed (try another head or return to Sho-Rack)</li></ul>
Rack door opens at unexpected or unselected price	<ul style="list-style-type: none"><li>* Keyswitch broken</li><li>* Keyswitch installed incorrectly</li><li>* Scanner program set to wrong place</li><li>* Mech programmed to wrong price</li><li>* Lock turned to wrong price position</li></ul>



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