

**TK Electronic®
and
TK Total™
Mechanism
Service Manual
March 1999**

**Sho-Rack®
By
Kaspar Wire Works**

For Assistance and Parts Call or Write
PO Box 1127 Shiner, Texas 77984
(361) 594-2911 (800) 527-1134

TK-Total™ is an exclusive Trademark of Kaspar Sho-Rack®

TABLE OF CONTENTS

PAGE 2 - Infrared Sensor and Five Position Lock Switch
PAGE 3 - Latching System and Door Hook Adjustments
PAGE 4 - Error Light
PAGE 5 - Battery Replacement
PAGE 6 - EM-14 Latch Adjustment
PAGE 7 - Locks and Keyswitch
PAGE 8 - Sho-Rack Electronic Mech Keyswitch Assembly
PAGE 9 - Coins or Foreign Objects Lodged in Coil Plates
PAGE 10 - Board Connectors
PAGE 11 - Total Price Changer (TPC)
PAGE 12 - TK Electronic /TK Total Parts List
PAGE 13 - TK Electronic /TK Total Illustration
PAGE 14 - TK Electronic /TK Total Illustration
BACK COVER - TK Electronic /TK Total Parts List and TK Electronic /TK Total Inspection Procedures

TROUBLE SHOOTING

Keyswitch Operations - Pages 2, 7, 8, 10, Back Cover
Door Will Not Open - Pages 3, Back Cover
Door Opens Without Money - Pages 3, Back Cover
Error Light - Pages 4, Back Cover
Battery Replacement - Pages 5, Back Cover
Solenoid Does Not Fire - Page 6
Objects Lodged In Coil Plates - Pages 9, Back Cover
Price Changing - TK Total Mechs - Page 11
Inspection Procedures - Back Cover

CLEANING AND GENERAL CARE

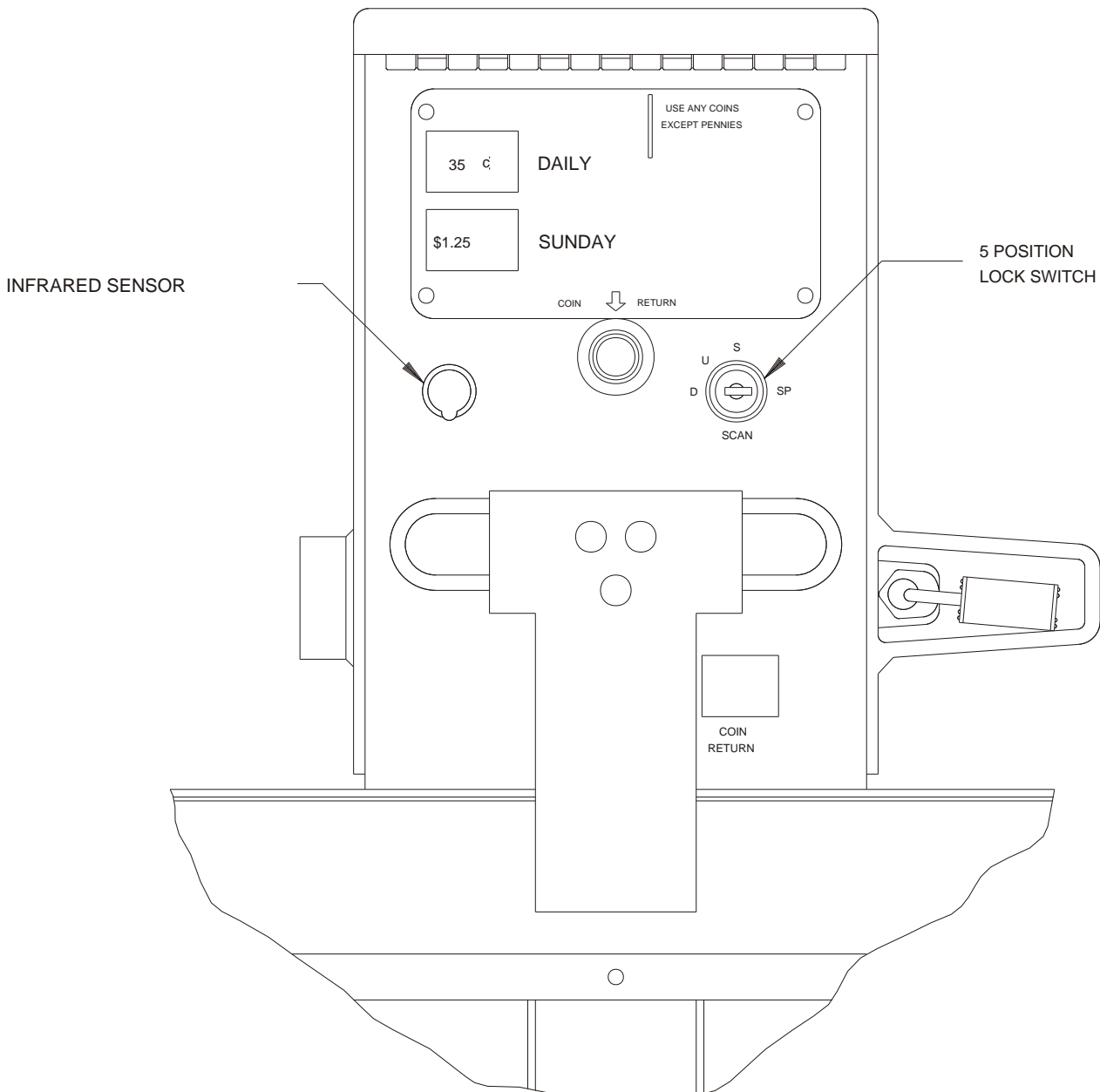
The TK Electronic and TK Total Mechs have no totalizer arm or wheel. They have fewer mechanical parts to wear out, adjust or jam making them less sensitive to dust, dirt or grime. The steel chassis, weather-coated circuit board, gold plated switches and contacts provide unmatched durability and help 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 9 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

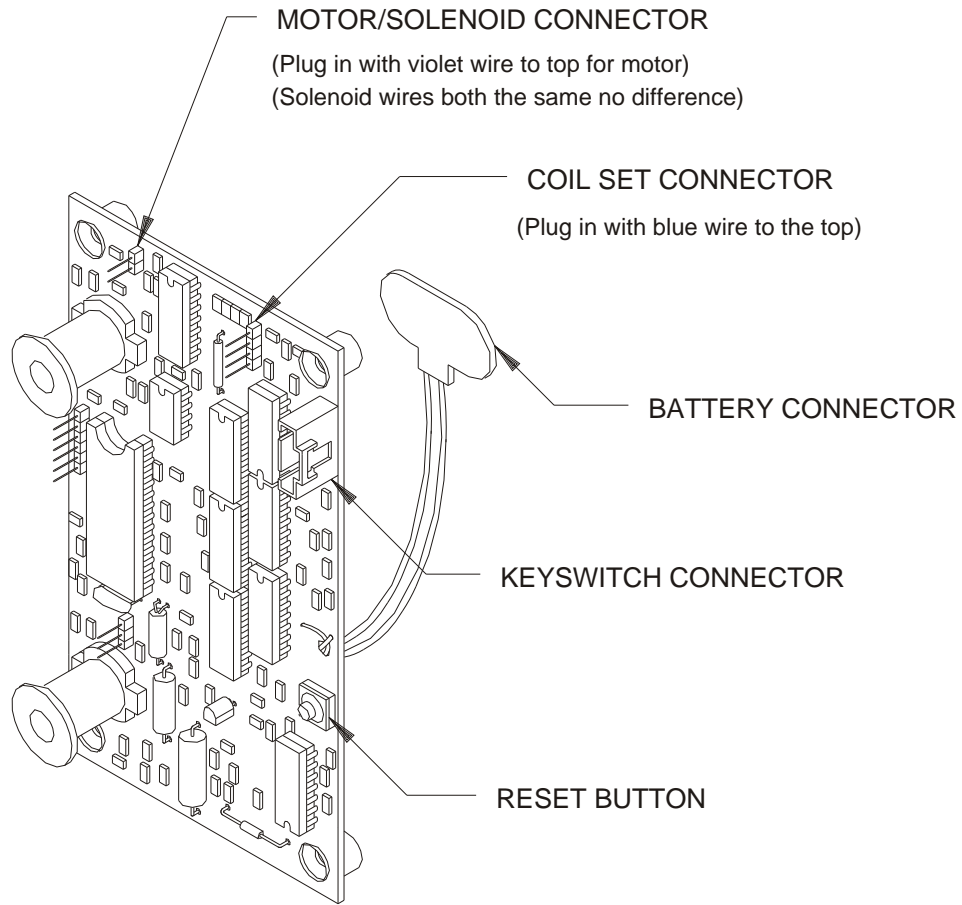
The Infrared Sensor may be used with all Sho-Rack Electronic mechs. This sensor allows communication with Sho-Rack scanners to change prices and to retrieve sales information stored in the circuit board.

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.



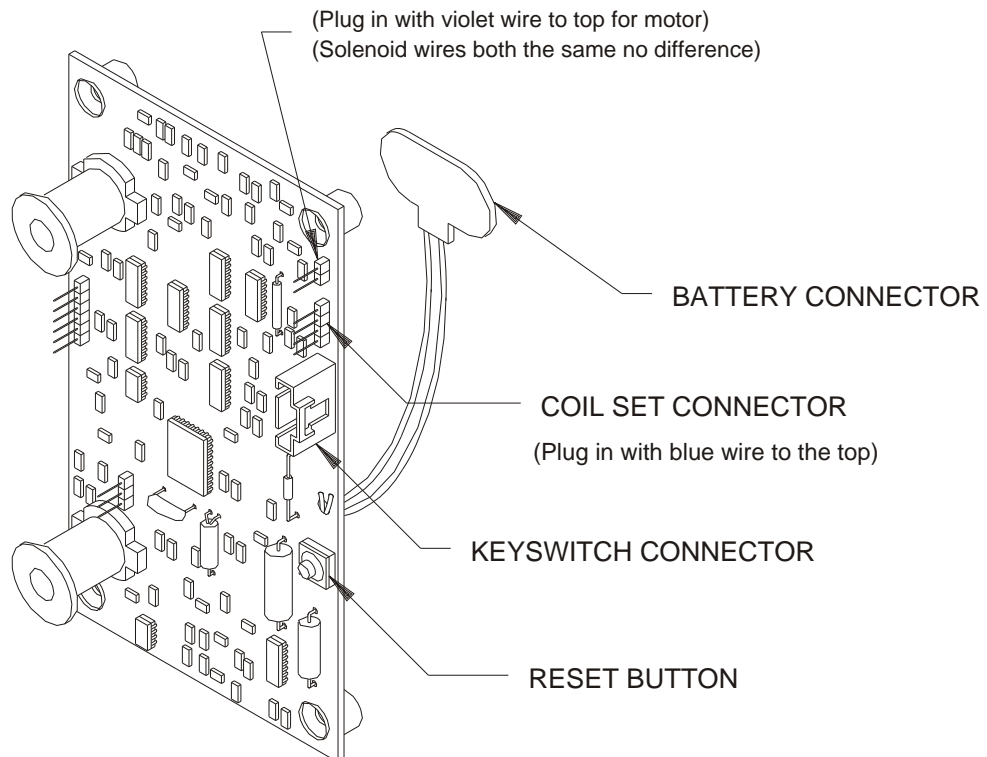
BOARD CONNECTORS

"Proper Connections are Required for Mech Operation"



MOTOR SOLENOID CONNECTOR

(NEW STYLE after June 1995)



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

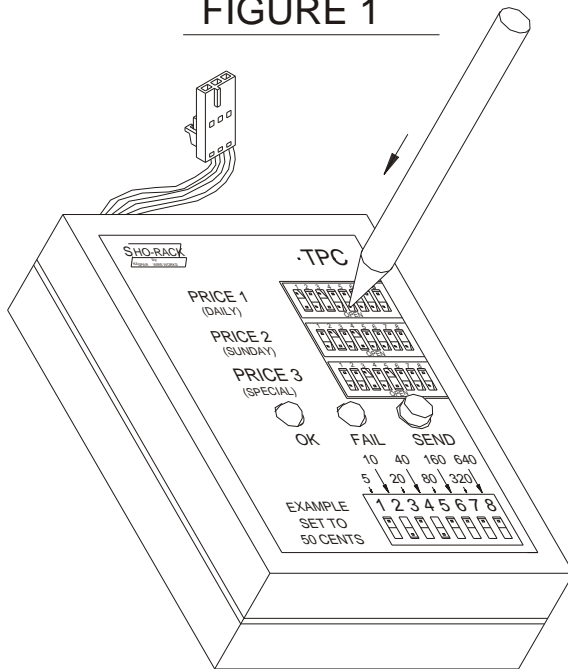
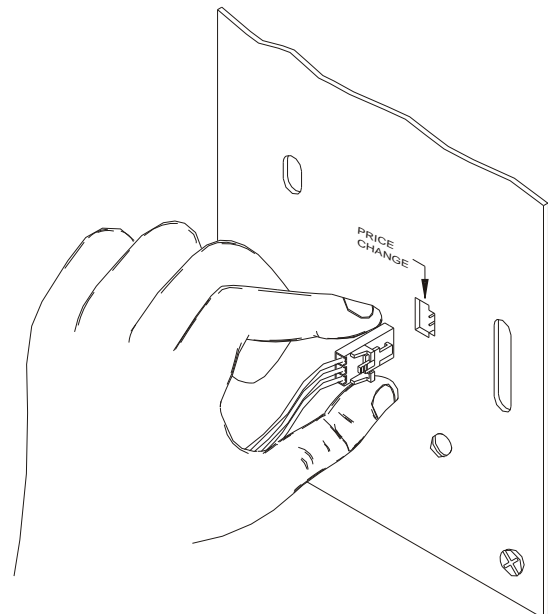


FIGURE 2



TK-ELECTRONIC/TK-TOTAL 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-898	31	IR Sensor - 47571	4818
T-800-E	2	"E" Chassis	4800	T-899	*	P/N 413-1AA1 1" Plastic Cap Plug	4819
T-801-E	3	Inside Coin Guide Plate (Stainless Steel)	4801	T-900	32	Keylock Ext. Harness - 7652-6 (Length 11")	4820
T-802-E	4	Outside Coin Guide Plate (Stainless Steel)	4802	T-901	*	Lock Assembly Retainer Ring - 5105-21	4821
T-806	5	Hold Down Assembly	5070	T-902	*	Nylon Cable Clamp - 3352	4822
T-808	6	Coin Return Door	5019	T-905	*	Motor RF-370CA-15370	4825
T-809-E	7	Coin Receiver Door	4852	T-800 - T-824-E	35	Extension Spring	5037
T-810	8	Top	5066	T-800E - T-835	36	Extension Spring	5011
T-811	9	Top Cover Plate	5065	T-800E - T-842	37	Extension Spring	5016
T812-E	10	Side Cover	4803	T-835- T-840	38	Extension Spring	5035
T-820-E	11	Latch Release & Anti-Cheat Stop	4804	T-800E - T-820-E	39	Extension Spring	5042
T-824-E	12	Coin Return Bar & Cancellation	4805	T-82 (3)	40	Rollers	5006
T-825	13	Latch	5047	T-80	41	Roller	5015
T-830	14	Cushion Arm Link	5046	T-43 (2)	42	Coin Guide Spacers (In Field Replacement)	5024
T-835	15	Rocker Arm	5009	T-807-E	43	Side Mounting Plate	4855
T-837	16	Actuator Bar	5010	EM-13	44	Disc Latch	4826
T-838	17	Rocker Arm Connector Link	5007	EM-14	45	Release Disc	4827
T-840-E	18	Receptacle Arm & Sale Acceptance	4806	EM-23	46	Release Disc Recoil Spring	4828
T-841-E	19	Rocker Arm Link	4853	EM-24	47	Motor Shaft Bracket Linkage	4829
T-842-E	20	Coin Return Door Arm	4854	EM-27	48	Motor Mount Micro-Switch Bracket	4830
T-854	*	National Cylinder Lock Retainer Clip	5048	T-906 (2)	49	2-56 Hex Nuts	4831
T-855 (16)	*	M4 X 8MM Pan Head Machine Screw	5081	T-907 (2)	50	2-56 X 7/16" RSMS (S/S)	4832
T-856 (1)	*	M4 X 8MM Flat Head Machine Screw	5082	T-908 (2)	51	4-40 X 3/16" SBHS	4833
T-857 (13)	*	M4 X .7 Hex Nut	5083	T-909 (6)	*	#4 Internal Shakeproof Washer	4834
T-857-1 (2)	*	M4 X .7 Nylon Stop Nut	5099	T-910	52	Socket Set Screw - 6-32 X 1/8"	4835
T-881-E (3)	22	Bolt on Coil Mount	4807	T-911	*	Molex 2 Pin Connector 50-57-9202-D	4836
T-885-E	23	Back Mounting Plate	4808	T-912 (2)	53	M3 X 4MM Cheese Head Screw	4837
T-886-E	24	Baffle	4809	T-913	54	Chicago Retainer Clip for IR Sensor	4838
T-887-E	25	Coin Return Linkage	4810	T-916-E	55	Snap-In Door	4843
T-888-E	26	Motor Bracket & Latch Release	4811	T-892-E	56	Solenoid Linkage & Latch Release	4844
T-892	27	Coil Assembly - 58507-101 (200 X 175)	4812	T-917-E (K9404-A)	57	Solenoid	4845
T-893	28	Circuit Board - 57651-20 (Full Audit)	4813	T-918-E (2)	58	2-56 X 1/8" RPMS	4846
T-896	30	IR Extension Wire Assembly (Length 5")	4816	T-919-E	59	Cancellation Flag	4847
T-897	*	Micro-Switch - 311 SM701-T (Motor Style)	4817	T-920-E	60	Return Cancellation Linkage	4848

TK-ELECTRONIC/TK-TOTAL PARTS LIST

PART NO	ILLUS NO	DESCRIPTION	PRICE CODE NO	PART NO	ILLUS NO	DESCRIPTION	PRICE CODE NO
T-308	61	Extension Spring	4960	CM-100-71 (3)	*	8-32 Kep Nuts	1061
CM-100-72 (2)	62	Bushing	1102	CM-100-63 (4)	*	6-32 X 5/16" Screws	1055
T-921-E	63	Illinois Lock (Specify Key Number)	4850	5133-9ZF	A	"E" Ring (For 3/32" Dia. Shaft)	5074
T-922-E	64	Illinois Lock Retainer Clip	4851	5133-12ZF	B	"E" Ring (For 1/8" Dia. Shaft)	5075
T-914	*	Jam Washer #6003	4839	5133-15ZF	C	"E" Ring (For 5/32" Dia. Shaft)	5076
CM-100-68 (3)	*	6-32 Kep Nuts	1059	5133-18ZF	D	"E" Ring (For 3/16" Dia. Shaft)	5077

Note: * Not Shown or Illustrated

TK-ELECTRONIC/TOTAL INSPECTION PROCEDURES

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

