Teletype Corporation
Skokie, Illinois, U. S. A.

Errata Sheet for
Specification 50150S
Issue 3, November, 1963

ERRATA SHEET CORRECTING SPECIFICATION 50150S, ISSUE 3, FOR THE 179724 MODIFICATION KIT

NOTE

This Errata Sheet will be obsolete when Issue 4 of Specification 50150S is available.

1. Corrections and Revisions

   a. Figure 1

   Add designation line to associated 3599 Nut. Delete designation line associating 3599 with 110743 Lock Washer.

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INSTRUCTIONS FOR INSTALLING THE 179724 MODIFICATION KIT TO PROVIDE TWO COLOR PRINTING ON A MODEL 28 TYPING UNIT

1. GENERAL

a. The 179724 Modification Kit when installed on a Model 28 Typing Unit provides a two color ribbon mechanism. Additional parts to control this mechanism are ordered separately, as follows:

Mode	Qty.	Parts Required	Description
Sequentially thru Stunt Box Contact	2	153440	Function Bar, Universal
	2	4703	Spring
	2	152653	Pawl
Typical parts needed are listed, other parts needed should also be ordered.	2	157240	Spring
	1	152298	Lever
	1	152299	Lever
	2	152089	Latch
	1	152660	Spring Plate
	2	90517	Spring
	1	172506	Contact Assembly (Normally Open Contact)
	2	151689	Screws
	2	110743	Lock Washers
	1	152357	Stud
	1	110743	Lock Washer
	1	3599	Nut

Upper case in red Lower case in black	Same as above except use 152665 and 152666 Function Bars

b. The 179724 Modification Kit consists of:

2	243M	Magnet Assembly	2	93899	Spring
8	2191	Washer, Lock	1	97117	Ribbon (Red-Black)
2	3599	Nut	4	110743	Washer, Lock
8	3640	Washer, Lock	6	112627	Nut
5	7002	Washer, Flat	2	112630	Spring
2	8330	Washer, Flat	4	119648	Retainer
2	42661	Spring	11	119649	Retainer
2	45024	Spring	3	119651	Retainer
4	90361	Washer, Felt	4	119652	Retainer
6	93117	Washer, Lock	2	119653	Retainer

*Indicates change

2	121243	Clamp, Cable	2	179685	Roller
1	121245	Clamp, Cable	1	179686	Bracket Assembly
4	125011	Washer	1	179687	Lever, Guide
2	126815	Screw	1	179689	Bracket Assembly
1	150040	Screw	1	179690	Plate
2	150089	Screw	1	179691	Bracket Assembly
1	150432	Spacer	3	179692	Spacer
4	151152	Screw	1	179693	Bail, Lifter
2	151630	Screw	1	179694	Bail, Roller
4	151631	Screw	1	179695	Bracket
2	152629	Washer, Felt	1	179696	Bracket, Hinge
6	152893	Screw	1	179697	Lever, Stop
2	153538	Screw	2	179698	Armature
8	155751	Tubing	2	179699	Shaft
8	156558	Washer, Felt	1	179700	Bracket, Hinge
2	161346	Washer, Felt	1	179701	Lever, Stop
1	179675	Bracket Assembly	1	179702	Bracket, Magnet
1	179676	Lever, Guide	1	179703	Bracket Assembly
2	179677	Shaft Assembly	1	179704	Shaft
2	179678	Lever, Reversing	1	179708	Plate, Adjusting
1	179680	Bail, Lifter	1	179709	Shield
4	179681	Post	1	179718	Cable
2	197996	Roller	1	192997	Bracket
1	179682	Bail, Roller	1	195150	Lever
2	179684	Lever, Oscillating			

c. For part numbers referred to and for parts ordering information see Teletype Model 28 Parts Bulletin 1149B.

2. THEORY OF OPERATION

a. Sequence of Operation

The attraction of the selector magnet trips the printer shaft which in turn trips the type box clutch. The cycling of the type box clutch operates the ribbon feed linkage plus ribbon spool bracket. The two color ribbon magnets mounted directly behind the ribbon spool bracket assembly (left and right) operate (through attractions and release) a magnet armature extension. While the armature is attracted, the armature extension blocks the 179684 Oscillating Lever. This lever is mechanically linked to the 179680 and 179693 Lifter Bails. By limiting the travel of the 179684 Oscillating Lever the lifter bail and its lifter roller are raised to the uppermost or extended position. The ribbon guide that is assembled to the lifter roller elevates the position of the ribbon to the "red" printing field in line with the type pallet to be printed.

If the two color ribbon magnet armatures are not attracted (de-energized) then the 179684 Oscillating Lever is allowed to pass freely under the magnet armature extension. This reduces the ribbon guide movement and positions the ribbon to the black field in line with the type pallet to be printed.

Each revolution of the printer mainshaft returns the ribbon lifter bail and ribbon guides to their normal unoperated or lowest position.

NOTE

The foregoing theory of operation is based on the condition that the Two Color Ribbon is inserted into the printer with the red field on the bottom and the black field on the top.

b. Depending on whether a 48 V DC or 115 V DC supply is used the magnet must be connected either in parallel or series respectively.

3. INSTALLATION

a. 179724 Modification Kit (Figures 1 and 2)

RIGHT RIBBON MECHANISM

(1) Remove and discard the 7835 and 71681 Ribbon and Spool plus the 119652 Retainer that connects the 150387 Link to the ribbon spool bracket.

(2) Remove and retain the 82463 Spring from the 152828 Ribbon Spool bracket.

(3) Remove and discard the 119652 Retainer from the 152648 Shaft.

(4) Remove the 152828 Right Ribbon Bracket and 161346 Felt Washer from the right side frame. Disassemble the following parts from the 152828 Bracket Assembly:

119651	Retainer	discard	119651	Retainer	discard
150327	Roller	"	42661	Spring	retain
112634	Spring	"	152524	Bracket	"
151637	Screw	retain	119653	Retainer	discard
110743	Lock Washer	"	152526	Plate	retain
150336	Spacer	"	152523	Spring	"
150311	Ribbon Lever	discard	152529	Ratchet	"
119649	Retainers (2)	"	152629	Felt Washer	discard
152826	Shaft	retain	152630	Shaft	"
152834	Spring	"	152525	Hub	retain
152819	Detent Lever	"			

(5) Remove the following parts from the right side frame:

151346	Screw	retain	90361	Felt Washer	discard
2191	Lock Washer	retain	152648	Shaft	discard
150932	Bushing	retain	152647	Lever	retain
150344	Lever	retain	151658	Screw	retain
150821	Spacer	retain	2191	Lock Washer	retain
151630	Screw	retain	125015	Washer	retain
2191	Lock Washer	retain	121243	Cable Clamp	discard

(6) Assemble the 179703 Bracket plus 179704 Shaft to the right side frame using 151631 Screw and 2191 Lock Washer plus 151630 Screw and 2191 Lock Washer. Apply film of grease to shaft.

(7) Assemble the 152647 Lever, 150821 Spacer and 150344 Lever to the right side frame using 151631 Screw, 2191 Lock Washer and 150932 Bushing. The 152647 Lever mounts on the 179704 Shaft with the lower opening engaged with the 150335 Gear. Assemble two 90361 Felt Washers to the 179704 Shaft. Assemble two 179692 Spacers to the 179703 Bracket.

(8) Assemble the following parts to the 179686 Bracket:

152629	Felt	42661	Spring
152525	Hub	152819	Lever
179677	Shaft	152834	Spring
152529	Ratchet	152826	Shaft
152523	Spring	119649	Retainer (2)
152526	Plate	126815	Screw
119653	Retainer	93117	Lock Washer
152524	Bracket	112627	Nut
119651	Retainer		

(9) Assemble the 179678 Reversing Lever to the 179686 Ribbon Spool Bracket using 151637 Screw, 110743 Lock Washer and 150336 Spacer.

(10) Connect the 82463 Spring to the 152821 Bracket.

(11) Mount the 179686 Bracket Assembly to the right side frame. The 152819 Lever must engage the 152821 Bracket. The 161346 Felt Washer should be placed on the 179704 Shaft between two vertical mounting holes of the 179686 Bracket. Secure the bracket to the shaft using 119652 Retainer.

(12) Connect the 150387 Link to the 179686 Bracket and secure using 119652 Retainer.

(13) Assemble two 156558 Felt Washers and 179693 Lifter Bail to the stud of the 179686 Bracket and secure using 119649 Retainer.

(14) Assemble 179687 Guide Lever to the 179694 Roller Bail using two 179681 Posts, two 93117 Lock Washers and two 112627 Nuts.

(15) Assemble 179684 Oscillating Lever and 8330 Flat Washer to the 179704 Shaft. Assemble the 179694 Roller Bail with 179687 Guide Lever plus two 156558 Felt Washers to the 179704 Shaft. Secure with 119649 Retainer.

(16) Assemble one each of the 179685 Rollers to the rear 179681 Post. Assemble one each of the 197996 Rollers to the front 179681 Post.

(17) Connect 42661 Spring to the 179687 Guide Lever and 179686 Bracket. Connect 45024 Spring to the 179678 Lever and 179686 Bracket. Connect 93899 Spring to the 179693 Lifter Bail and 179694 Roller Bail.

(18) Assemble the magnet assembly (right) using the following:

179702	Magnet Bracket	152893	Screw (2)
243M	Magnet Assembly	3640	Lock Washer (2)
152893	Screw	125011	Washer (2)
3640	Lock Washer	179699	Shaft
179700	Hinge Bracket	119649	Retainer (2)
179701	Stop Lever	150089	Screw
179698	Armature	110743	Lock Washer
151152	Screw (2)	3599	Nut
3640	Lock Washer (2)	112630	Spring

(19) Mount the magnet bracket assembly to the 179692 Spacers using two 153538 Screws, two 2191 Lock Washers, two 7002 Washers and one 179708 Adjusting Plate.

LEFT RIBBON MECHANISM

(20) Remove and discard the 119652 Retainer that holds the 150386 Link to the 152827 Bracket Assembly. Remove and retain 82463 Spring from the 152827 Bracket Assembly and remove bracket assembly plus 161346 Felt Washer.

(21) Disassemble the 152827 Bracket Assembly as follows:

119649	Retainer (2)	discard	152524	Bracket	retain
152826	Shaft	retain	42661	Spring	"
152834	Spring	"	119653	Retainer	discard
152818	Detent	"	152527	Plate	retain
151637	Screw	"	152523	Spring	"
110743	Lock Washer	"	152528	Ratchet	"
150336	Spacer	"	152629	Felt	discard
150310	Lever	discard	152630	Shaft	"
112634	Spring	"	152525	Hub	retain
119651	Retainer	"			

(22) Remove and discard 90361 Felt Washer from the shaft of the 152644 Bracket.

(23) Remove and discard the 119651 Retainer from the 152823 Feed Lever Bracket. Remove and retain 152820 Feed Lever.

(24) Remove the 152644 Bracket with associated parts from left side frame by removing and retaining the following: two 151659 Screws, three 152571 Spacers, one 3599 Nut, one 110743 Lock Washer and one 150335 Gear. Remove and discard one 151693 Screw.

(25) Remove and retain the following parts from the 152644 Bracket Assembly: 151657 Screws, 2191 Lock Washer, 150932 Bushing, 150343 Lever. Discard the 152644 Bracket, 152646 Lever and 152823 Bracket.

(26) Assemble the following parts to the 179689 Bracket: 195150 Lever, 150343 Lever, 151657 Screw, 2191 Lock Washer, 150932 Bushing, 179692 Spacers, 179691 Bracket Assembly, 192997 Bracket, 151631 Screw, 2191 Lock Washer, 7002 Washer. Apply film of grease on shaft.

(27) Assemble the 179689 Bracket Assembly to the left side frame using the following: three 152171 Spacers, two 151659 Screws, one 150040 Screw, three 2191 Lock Washers, and one 150432 Spacer. Insert the 150432 Spacer between the 192997 Bracket and 179689 Bracket.

(28) Assemble the 152820 Feed Lever and 82463 Spring on the stud of the 179691 Bracket. Secure by means of 119651 Retainer. Assemble the 150335 Gear, 110743 Lock Washer, and 3598 Nut to the 152582 Shaft protruding through the 179689 Bracket.

(29) Assemble two 90361 Felt Washers to the shaft of the 179689 Bracket.

(30) Assemble the following parts to the 179675 Bracket:

152629	Washer Felt	119649	Retainer (2)
152525	Hub	179678	Lever
179677	Shaft Assembly	151637	Screw
152528	Ratchet	110743	Lock Washer
152523	Spring	150336	Bushing
152527	Plate	179680	Lifter Bail
119653	Retainer	156558	Felt Washer (2)
152524	Bracket	119649	Retainer
119651	Retainer	126815	Screw
42661	Spring	93117	Lock Washer
152818	Lever	112627	Nut
152826	Shaft		
152834	Spring		

(31) Assemble the two 90361 Felt Washers and the 179675 Bracket Assembly to the 179689 Bracket with shaft. Insert 161346 Felt Washer on the shaft between the mounting holes of the 179675 Bracket, secure using 119652 Retainer. Connect the 150386 Link to the 179675 Bracket using 119652 Retainer. Connect the 82463 Spring to the 179675 Bracket.

(32) Assemble the 179681 Post to the 179682 Roller Bail (front mounting hole) using 112627 Nut and 93117 Lock Washer.

(33) Assemble the 179676 Guide Lever to the 179682 Roller Bail using 179681 Post, 112627 Nut, and 93117 Lock Washer. Assemble one 179685 Roller to the rear 179681 Post and one 197996 Roller to the front post; secure with 119648 Retainers.

(34) Assemble the 179684 Oscillating Lever and 8330 Washer to the shaft of the 179689 Bracket. Assemble the roller bail with guide lever and posts plus two 156558 Felt Washers to the shaft of the 179689 Bracket Assembly. Secure using 119649 Retainer.

(35) Connect 45024 Spring to the 179678 Lever and 179675 Bracket. Connect 42661 Spring to the 179676 Guide Lever and 179675 Bracket. Connect 93899 Spring to the 179680 Lifter Bail and 179682 Roller Bail.

(36) Assemble the left magnet assembly using the following:

179695	Bracket	179698	Armature
243M	Magnet Assembly	151152	Screw (2)
152893	Screw	3640	Lock Washer (2)
3640	Lock Washer	179699	Shaft
179696	Hinge Bracket	119649	Retainer (2)
152893	Screw (2)	150089	Screw
3640	Lock Washer (2)	110743	Lock Washer
125011	Washer (2)	3599	Nut
179697	Stop Lever	112630	Spring

(37) Assemble the 179690 Plate to the 179692 Mounting Spacers and 192997 Bracket using two 151631 Screws and two 2191 Lock Washer.

(38) Mount the magnet assembly to the 179690 Plate using two 151630 Screws, two 2191 Lock Washers and two 7002 Washers.

(39) Route the 179718 Cable Assembly from the "R" connector through the right side frame along the handle of the stunt box around the left side frame to the ribbon magnet. Wire per Figure 3.

(40) Form the selector magnet cable and 179718 Cable so that it does not interfere with the ribbon magnet bracket assembly. Secure the two cables to the 179703 Bracket using 151658 Screw, 2191 Lock Washer, 125015 Washer and 121245 Cable Clamp.

(41) Remove 157237 Shield from selector magnet assembly and replace using 179709 Shield.

*4 ADJUSTMENTS AND LUBRICATION

a. Adjustments

For standard adjustment and lubrication procedure refer to standardized information, for other than Bell System see Teletype Bulletin 217B. Make the Two Color Ribbon Adjustments.

b. Lubrication

Apply two drops of oil to the following parts on the left and right side frames.

(1) Ribbon Drive Link - both ends.

(2) Ribbon Ratchet Friction Felt Washer - saturate.

(3) Ribbon Spool Bracket Shaft Felts - saturate, oscillating lever, roller bail.

(4) Ribbon Reversing Levers - all engaging surfaces.

(5) Ribbon Spool Bracket - all engaging surfaces.

(6) Ribbon Magnet Bracket - hinge and stop lever.

(7) Support Shaft (179704, 179689) - film of grease.

* * *

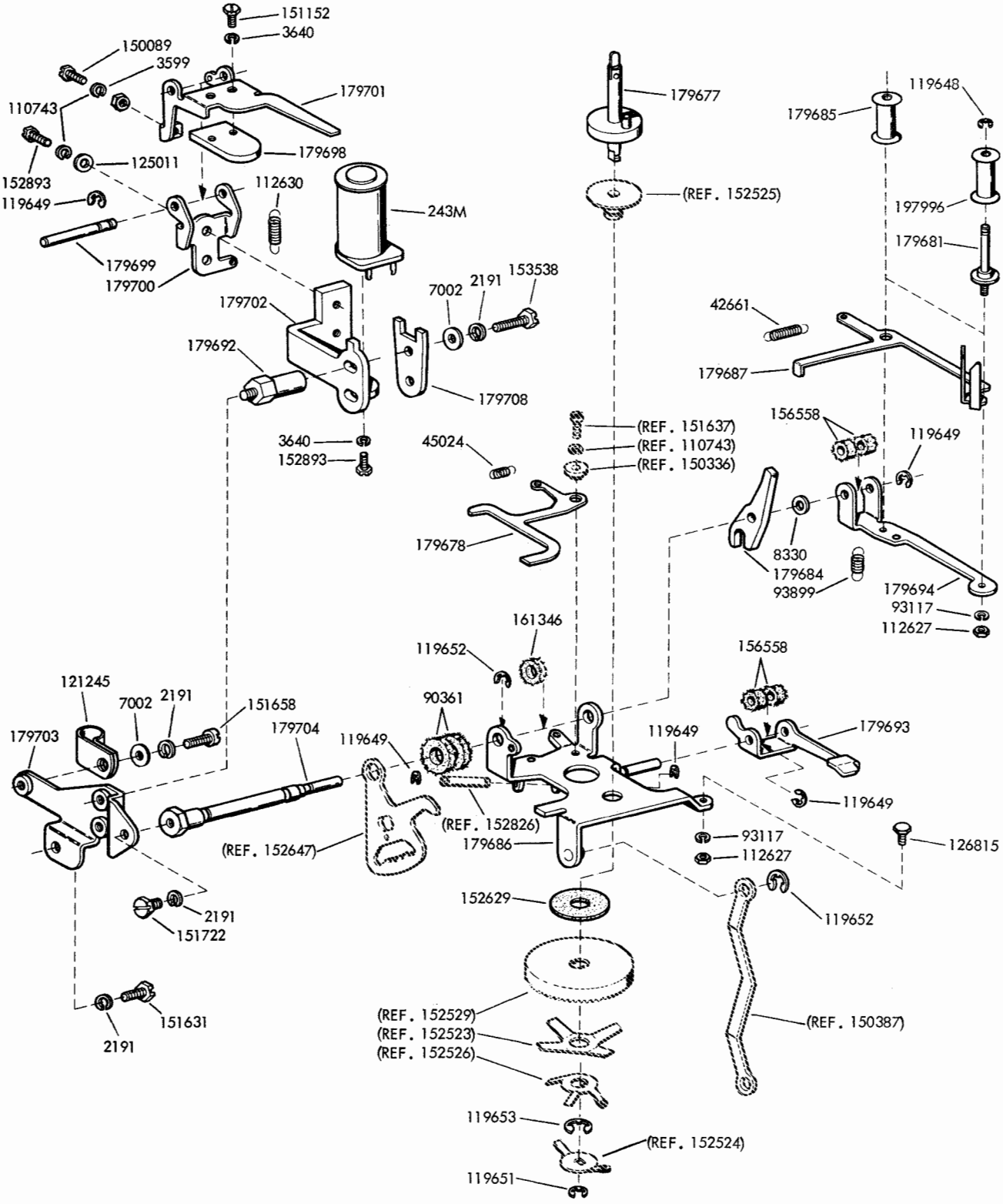
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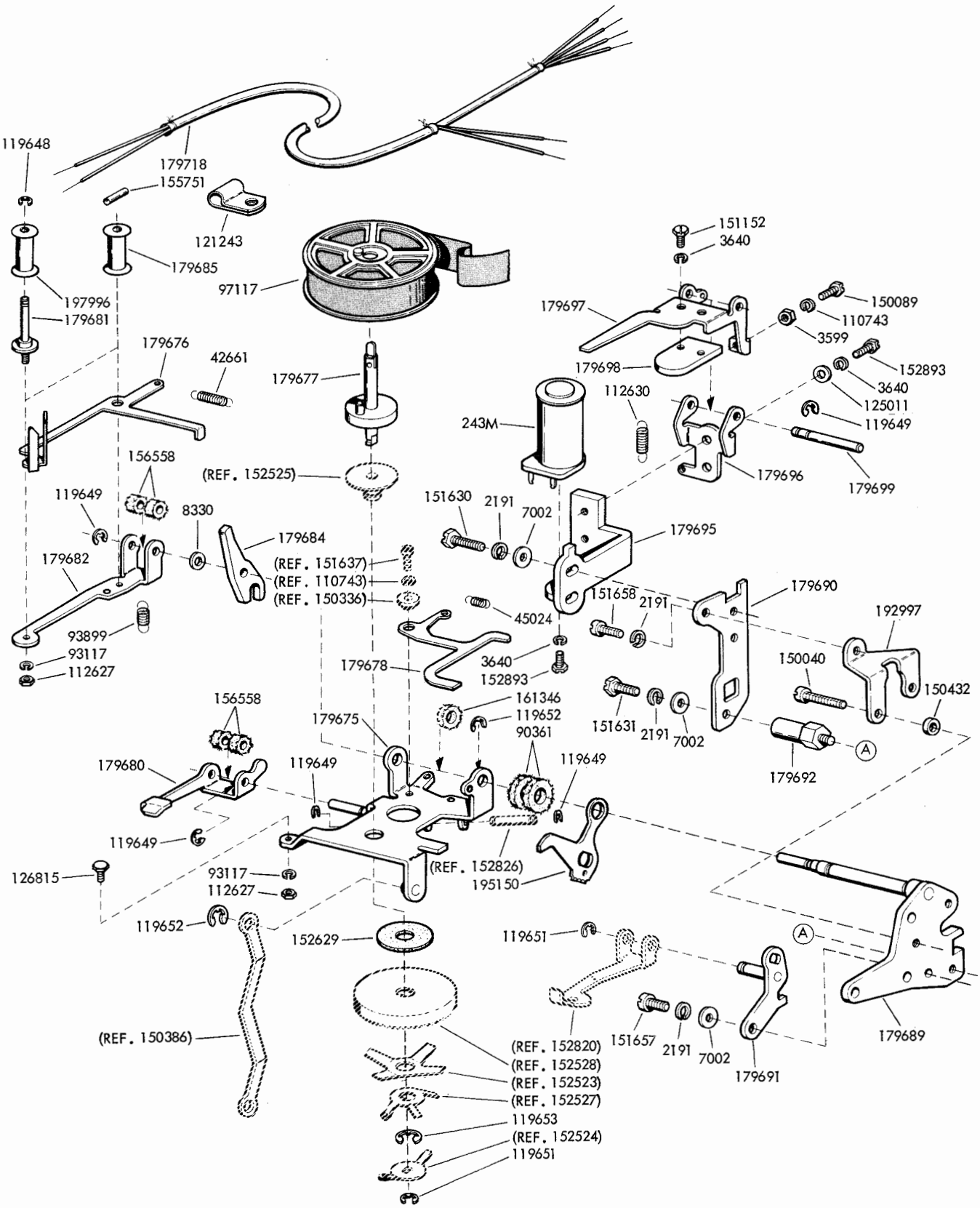
FIGURE 1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179689
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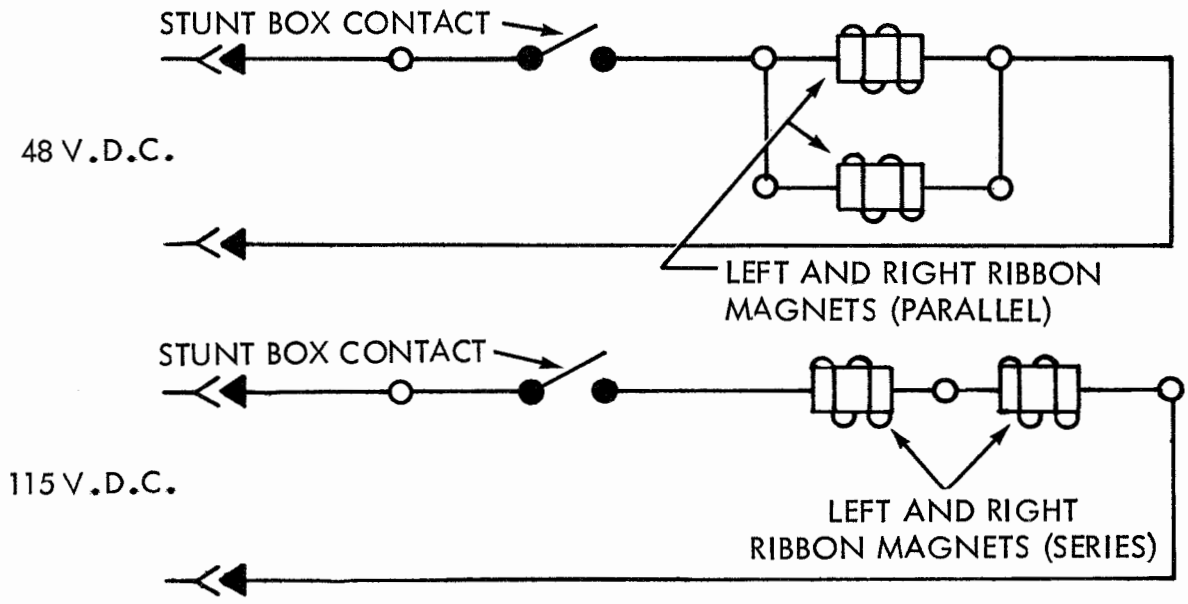
FIGURE 2

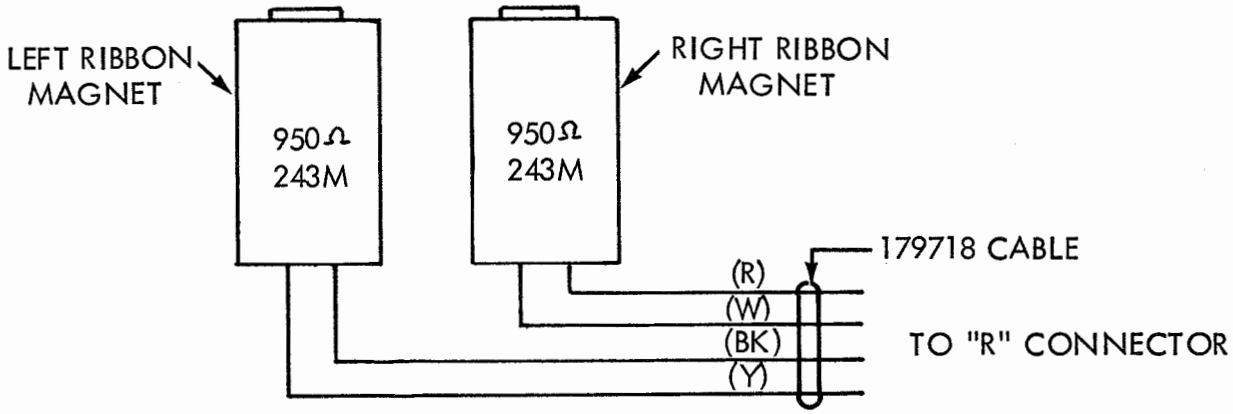


"R" CONNECTOR, RECEPTACLE

"R" CONNECTOR, PLUG

"R" CONNECTOR, TERMINAL

STUNT BOX TERMINAL



48 V.D.C. CONNECT MAGNET COILS IN PARALLEL
115 V.D.C. CONNECT MAGNET COILS IN SERIES

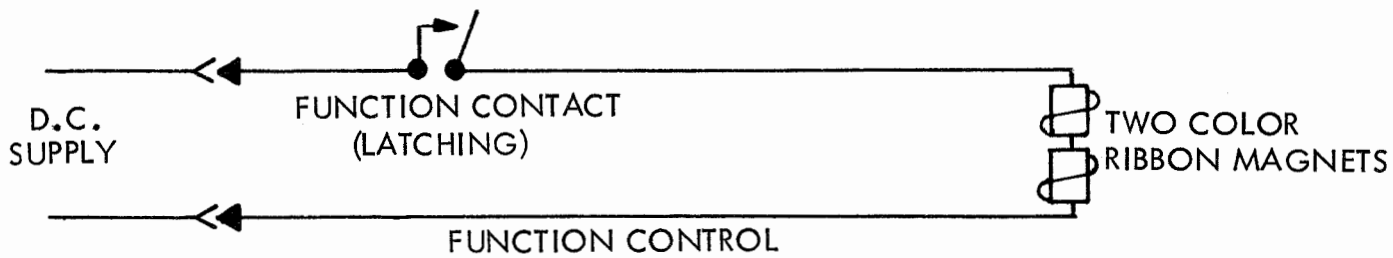


FIGURE 3