

INSTRUCTIONS FOR INSTALLING THE 173443 AND 176628 MODIFICATION KITS TO PROVIDE REMOTE CONTROL NONINTERFERING "LETTERS" TAPE FEED-OUT MECHANISM ON MODEL 28 TYPING OR NONTYPING REPERFORATORS AND THE 193749 MODIFICATION KIT TO PROVIDE "DELETE" PERFORATIONS FOR MODEL 35 REPERFORATORS.

1. GENERAL

1.01 The 173443 and 176628 modification kits provide a suitable length of "letters" tape at the end of each message by remote control. Model 28 Reperforator units so equipped may be mounted on any existing base other than the keyboard of the Automatic Send-Receive Set (ASR) or the Reperforator Transmitter Set (RT). The 193749 modification kit, when mounted on Model 35 Typing Reperforator units, provides "delete" perforations at the end of each message.

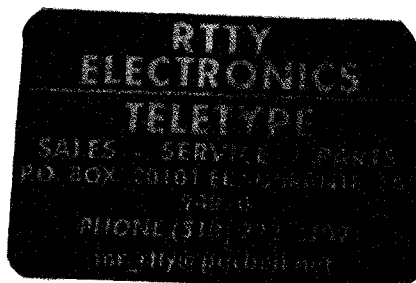
Note: These modification kits are not applicable to the two-shaft variety for ASR mounting.

1.02 The 173443 and 176628 modification kits, after feeding out a predetermined, but adjustable (0.6 to 18 inches) length of "letters" tape, the feed-out mechanism stops, recycles, and remains inoperative until another feed-out cycle is initiated. Should a message be received during any part of the tape feed-out cycle, the mechanism stops and does not interfere with or cause loss of any portion of the incoming message.

1.03 The 173443 and 176628 modification kits are the same except that the 173443 modification kit has the 173465 frame assembly. The start magnet for the 173443 and 193749 modification kits operates on 115 v ac $\pm 10\%$, 120 v dc $\pm 10\%$ with a 1350 ohms series resistance and 48 v dc $\pm 10\%$ with a 350 ohms series resistance. The 176628 modification kit has the 176629 frame assembly on which the start magnet operates on 120 v dc $\pm 10\%$ with a 250 ohm series resistance.

1.04 The modification kits consist of the following:

<u>Qty</u>	<u>Part No.</u>	<u>Description</u>	<u>173443</u>	<u>176628</u>	<u>193749</u>
1	2034	Washer, Flat			X
2	2043	Washer, Flat		X	
3	2043	Washer, Flat	X		
9	2191	Lockwasher		X	X
1	2539	Nut	X	X	X
10	2191	Lockwasher	X		
1	3599	Nut	X	X	X
2	3640	Lockwasher	X	X	X
3	7002	Washer, Flat	X	X	X
1	7655	Spring	X		X
2	8330	Washer, Flat		X	
3	8330	Washer, Flat	X		X
2	45963	Spring	X	X	X
1	55669	Spring	X		X



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<u>Qty</u>	<u>Part No.</u>	<u>Description</u>	<u>173443</u>	<u>176628</u>	<u>193749</u>
1	72522	Wick	X	X	X
1	73175	Lockwasher	X	X	X
1	76422	Spring	X	X	X
1	86079	Washer, Felt		X	
3	110743	Lockwasher	X	X	X
1	113039	Post, Spring	X		X
1	119649	Ring, Retainer			X
2	119649	Ring, Retainer	X	X	
1	119653	Ring, Retainer	X		X
1	119655	Ring, Retainer	X		X
1	119656	Ring, Retainer	X	X	X
2	125011	Washer, Flat	X	X	X
2	151152	Screw	X	X	X
2	151629	Nut	X	X	X
2	151631	Screw	X	X	X
2	151632	Screw	X	X	X
1	151642	Screw	X		X
1	151658	Screw	X	X	X
1	151659	Screw	X	X	X
1	151694	Screw	X	X	X
2	153799	Screw	X	X	X
2	153839	Screw		X	
3	153839	Screw	X		X
1	156136	Bracket	X	X	X
1	156137	Washer, Flat	X	X	X
1	156740	Screw	X	X	X
1	159565	Bracket	X	X	X
1	160842	Washer, Spring	X	X	X
1	162740	Frame Assembly, Feed-out		X	
1	162742	Pawl, Detent	X	X	X
1	162743	Pawl, Feed	X	X	X
1	162744	Shaft	X	X	X
1	162748	Lever, w/Hub	X	X	X
1	162753	Collar, Spacing	X	X	X
1	162754	Plate	X	X	
1	162755	Bracket	X	X	X
1	162758	Lever	X	X	
1	162761	Post		X	
1	162762	Slide Storage Assembly	X	X	X
1	162764	Lever	X	X	
1	162765	Bracket	X	X	
1	162809	Spring	X		X
3	163327	Ring Retainer	X	X	X
1	164883	Lever, Cam Follower			X
1	173465	Frame Assembly	X		X
1	173601	Cam	X		X

<u>Qty</u>	<u>Part No.</u>	<u>Description</u>	<u>173443</u>	<u>176628</u>	<u>193749</u>
1	173602	Plate w/Stud	X		X
1	173604	Post, Spring	X		X
1	173605	Bail Assembly	X		X
1	173614	Link w/Stud	X		X
1	173616	Lever w/Hub	X		X
1	173618	Bail	X		X
1	173621	Cable Assembly	X		X
1	176286	Lever	X	X	
1	176629	Frame Assembly		X	
1	179573	Nut	X	X	X
1	193639	Lever w/Shaft	X	X	X
1	193869	Bracket			X
1	193875	Plate, Trip			X
1	193876	Lever, Trip			X
1	193878	Lever, Slide Trip			X
1	194164	Bearing, Ball	X	X	X
1	194168	Lever w/Shaft	X	X	X
1	194179	Bearing Eccentric	X	X	X
1	194180	Frame Assembly, Feed-Out	X	X	X
1	194181	Sleeve, Feed-Out Cam	X	X	X
1	304532	Spring	X	X	X

1.05 For parts ordering information refer to Teletype Parts Bulletins 1167B, 1127B, and 1188B.

2. INSTALLATION

Note 1: References made to left, right, up, down, front, or rear, apply to the unit in its normal operating position as viewed from the front.

Note 2: Refer to Teletype Model 28 Typing Reperforator Set Bulletin 247B and Nontyping Reperforator Bulletin 256B for instructions for removal of major components and assemblies.

2.01 On units that are equipped with an old style 156028 punch front plate (not having two 0.114 inch by 0.188 inch elongated holes located on the right side of the plate just above the center), replace the old punch front plate with a new 156028 punch front plate in accordance with standard practice.

Note: The new 156028 punch front plate is not furnished with these kits and must be ordered separately.

2.02 On units equipped with an old style 156941 selector cam, it is necessary to replace it with a new 156941 selector cam.

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Note: The new 156941 selector cam is not furnished with these kits and must be ordered separately.

2.03 On units equipped with the 156059 punch slide reset bail, it is necessary to replace it with a 162763 punch slide reset bail. (The 162763 punch slide reset bail has a spring hole in the rear leg and the reset blade extends 0.281 inch from the front leg toward the front.)

Note 1: The 162763 punch slide reset bail is not furnished with these kits and must be ordered separately.

Note 2: For dc operation, the remote control magnet armature should be positioned so that the side marked "C" faces the pole face of the magnet core. For ac operation, the unmarked side of the magnet armature should face the pole face of the magnet core.

2.04 Replace the 151416 hexagon nut that fastens the 156094 front toggle link to the 156060 eccentric shaft with the 179573 hexagon nut.

2.05 Mount the 162762 slide storage assembly to the 156028 punch front plate with two 151152 screws, 110743 lockwashers, and 2034 flat washers. The 162772 link (part of the 162762 slide storage assembly), must engage the 179573 nut.

2.06 Remove and retain the selector mechanism in accordance with standard procedures. Discard only the 156472 spring post and the 151442 screw used to mount the 152402 selector lever guide post.

2.07 173443 and 176628 Modification Kits: Replace the 152403 selector lever guide bracket with the 162765 selector lever guide bracket replacing all the screws, lockwashers, levers, and springs.

2.08 193749 Modification Kit: Replace the 170234 selector lever guide bracket with the 193869 selector lever guide bracket replacing all the screws, lockwashers, levers, and springs.

2.09 173443 and 176628 Modification Kits: Remove and retain the 156248 punch slide latches and associated springs. Replace the 159430 reset bail trip lever with the 162764 reset bail trip lever. Replace the 156248 punch slide latches and associated springs. Add the 76422 spring with 72522 wick between the reset bail and the new reset bail trip lever.

2.10 193749 Modification Kit: Remove and retain the 156248 punch slide latches and associated springs. Replace the 170203 reset bail trip lever with the 193878 reset bail trip lever. Replace the 156248 punch slide latches and associated springs. Add the 76422 spring with a 72422 wick between the reset bail and the new reset bail trip lever.

2.11 Main Shaft Removal

(a) Remove and discard the 150040 function clutch drum mounting screw retaining the 2191 lockwasher.

- (b) Remove and discard the 151632 screw retaining the 2191 lockwasher used to mount the collar.
 - (c) Loosen the 159411 lower cam follower roller.
 - (d) Remove and retain the 156467 retaining ring, two 151246 washers, and the 156465 spring washer from the selector end of the main shaft.
 - (e) Remove and retain the 158745 bearing clamp and its mounting hardware.
 - (f) Pull the main shaft out from the rear of the unit. The function cam and clutch assembly needles, if the unit is so equipped, and collar will drop. Discard the collar retaining all other parts.
- 2.12 Mount the 162755 spring bracket on the top of the 159625 rocker bail guide bracket using the existing screws, lockwashers, and discarding the two 7002 flat washers.

2.13 Replace the main shaft:

Note: Relubricate in accordance with standard procedure.

- (a) Add the 119656 retaining ring to the main shaft in the groove near the rear ball bearing.
- (b) Add a 160842 spring washer to the main shaft next to the 119656 retaining ring.
- (c) Add 194181 feed-out cam sleeve to the main shaft next to the 160842 spring washer so that the hole in the sleeve is in line with the hole in the main shaft.
- (d) If the unit being modified is equipped with needle bearings for the function cam and clutch assembly, replace the needles removed and retained in 2.11 (f) retaining them with a rubber band.
- (e) Start the selector end of the main shaft through the rear bearing hole in the frame. Over the shaft, add the 194179 eccentric bearing, prongs towards the selector, a 162743 feed pawl, teeth down and towards the right, a 156137 flat washer, a 162742 detent pawl, longest leg down and towards the right, 194180 cam, hub towards selector. Add to the function cam clutch assembly (over the hub of the function clutch drum) the 173601 cam with the hub towards the rear. As the 194179 eccentric bearing is moved over the needle bearings, remove the rubber bands used to retain the needles, if the unit is so equipped.
- (f) Mount the 194180 cam to the main shaft with a 151659 screw and a retained 2191 lockwasher.

Note: Before fastening the 194180 cam make sure the feed pawl, washer, and detent pawl are on their respective eccentric shoulders. Rotate the main shaft until the feed pawl is in its extreme right position, then position the 194180 cam so that its dip is facing down.

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- (g) Mount the 173601 cam and 150000 clutch drum to the main shaft with a 151642 screw and retained 2191 lockwasher.
 - (h) Replace the 156467 retaining ring, two 151246 flat washers, and the 156465 spring washer removed and retained in 2.11 (d).
 - (i) Replace the 158745 bearing clamp with its mounting screw and lockwasher removed and retained in 2.11 (e).
- 2.14 Mount the 113039 spring post to the 173602 plate using a 2191 lockwasher.
- 2.15 Remount the selector mechanism, removed in 2.06 in accordance with standard procedures, adding the 173602 plate to the rear of the trip bracket replacing the 151442 screw with a 153839 screw using the retained 2191 lockwasher and adding a 8330 flat washer between the 173602 plate and the frame. Also, replace the 156492 spring post with a 173604 spring post using the retained 2191 lockwasher and 3598 nut.
- 2.16 Mount the 173618 bail and 173616 lever with a 119653 retaining ring to the post on the 173602 plate.
- 2.17 Add the 55669 spring between the 173616 lever and 173618 bail, and the 7655 spring between the 173618 bail and the 173602 plate.
- 2.18 Readjust the rocker bail lower roller, rocker bail guide bracket, selector, and punch in accordance with standard procedures.
- 2.19 Add the following parts to the 194168 drive arm:
- (a) Add the 194164 ball bearing to the post with a 110743 lockwasher and a 3599 nut.
 - (b) Add the 162748 lever to the drive arm with a 156740 screw, 2191 lockwasher, and 8330 flat washer.
- 2.20 Add the 156136 bracket to the frame with two 151630 screws and 2191 lockwashers.
- 2.21 173443 and 176628 Modification Kits: Add the 163327 retaining ring to the end groove of the 162744 shaft and place the shaft through the hole in the 156136 bracket placing the 162745 drive arm assembly over the shaft and push the shaft through the hole in the 159472 main plate until the retaining ring in the shaft butts against the 156136 bracket. Add the other 163327 retaining ring to the other side of the bracket. Mount the 162745 drive arm assembly to the shaft with a 151658 screw and a 2191 lockwasher.

- 2.22 193749 Modification Kit: Add the 163327 retaining ring to the end groove of the 162744 shaft and place the shaft through the hole in the 156136 bracket placing the 162745 drive arm assembly over the shaft and push the shaft through the hole in the 192828 main plate until the retaining ring in the shaft butts against the 156136 bracket. Add the other 163327 retaining ring to the other side of the bracket. Mount the 162745 drive arm assembly to the shaft with a 151658 screw and a 2191 lockwasher.
- 2.23 173443 and 176628 Modification Kits: Add the 176286 adjusting lever to the 162744 shaft with a 153839 screw, 2191 lockwasher, 7002 flat washer, and a 151629 nut.
- 2.24 193749 Modification Kit: Add the 193876 adjusting lever to the 162744 shaft with a 153839 screw, 2191 lockwasher, 7002 flat washer, and a 151629 nut.
- 2.25 173443 and 176628 Modification Kits: Add the 162753 spacer over the 162744 shaft and mount the 162754 plate to right side of the spacer with two 153799 screws, 3640 lockwashers, and 125011 flat washers.
- 2.26 193749 Modification Kit: Add the 162753 spacer over the 162744 shaft and mount the 193875 plate to right side of the spacer with two 153799 screws, 3640 lockwashers, and 125011 flat washers.
- 2.27 Add the 304532 spring between the 194168 drive arm and the 162755 spring bracket.
- 2.28 Mount the 199859 bushing to the trip bracket so that the threaded portion is toward the front with a 73175 lockwasher and a 2539 nut.
- 2.29 Mount the 173605 bail assembly over the 199859 bushing with a 119655 retaining ring and add the 162809 spring between the bail and the 113039 spring post.

Note: The cam follower lever mounts in the selector between the pushlever reset bail and the selector rear plate.

- 2.30 173443 and 176628 Modification Kits: Add a 163327 retaining ring to the 193639 lever w/shaft and mount the lever w/shaft to the unit through the 199859 bushing adding the 162758 cam follower lever to the lever w/shaft with a 153839 screw, a 2191 lockwasher, 8330 flat washer, and 151629 nut.

Note: The cam follower lever mounts in the selector between the pushlever reset bail and the selector rear plate.

- 2.31 193749 Modification Kit: Add a 163327 retaining ring to the 193639 lever w/shaft and mount the lever w/shaft to the unit through the 199859 bushing adding the 164883 cam follower lever to the lever w/shaft with a 153839 screw, a 2191 lockwasher, 8330 flat washer, and 151629 nut.

Note: The cam follower lever mounts in the selector between the pushbutton reset bail and the selector rear plate.

2.32 Mount the 173465 or 176629 feed-out frame assembly as follows:

Note: To simplify installation, remove the ratchets from the frame assembly by removing two retaining rings. The 162786 blocking arm should engage the 162745 drive arm. The lever on the 193639 lever w/shaft fits into the rectangular opening of the 162760 latchlever. The 173620 armature bail should be positioned so that it will move the 173618 bail away from the 173605 bail assembly.

- (a) If the unit being modified is equipped with timing contacts; remove and discard the 151632 screw, 2191 lockwasher, 7002 flat washer, and the 2481 spacer used to mount the 159565 bracket to the right side of the frame.
- (b) Mount the feed-out frame assembly to the frame by its lower mounting hole with a 151632 screw, 2191 lockwasher, and a 7002 flat washer.
- (c) Mount the 173614 link w/stud to the 173605 bail assembly with a 119649 retaining ring and to the 164888 lever w/post with a 2034 flat washer and a 119649 retaining ring.
- (d) On units equipped with timing contacts, proceed as follows:
 - (1) If the furnished 159565 bracket is similar to the one on the unit; discard the furnished bracket, a 151694 screw, and a 2191 lockwasher, furnished in the kit.
 - (2) If the furnished 159565 bracket is not similar to the bracket on the unit; replace it with the furnished bracket retaining the associated parts and discard the old bracket, 151694 screw, and a 2191 lockwasher, furnished in the kit.
- (e) On units that are not equipped with timing contacts, proceed as follows:
 - (1) Remove and retain the 153839 screw and 2191 lockwasher, and if unit is equipped with a connector bracket, discard the 2481 spacer, used to mount the 162862 bar to the frame.
 - (2) Mount the 159565 bracket to the unit with a 151694 screw and a 2191 lockwasher and replace the 153839 screw and 2191 lockwasher removed in 2.32 (e) (1).
- (f) Mount the feed-out frame assembly with its upper mounting hole and the 159565 bracket with its formed over leg with a 151632 screw, 2191 lockwasher, and 7002 flat washer.

2.33 Add the 45963 springs between the 159565 bracket and the 162743 feed pawl and 162742 detent pawl.

2.34 Add the 173621 cable assembly and wire per Wiring Diagram 3628WD, 4351WD, or 4957WD.

Note: Replace retaining rings and ratchets if removed per note in 2.32.

3. ADJUSTMENTS AND LUBRICATION

3.01 For standard adjustments and lubrication procedures of Model 28 units refer to Teletype Bulletin 247B and for Model 35 units, refer to Teletype Bulletin 280B.

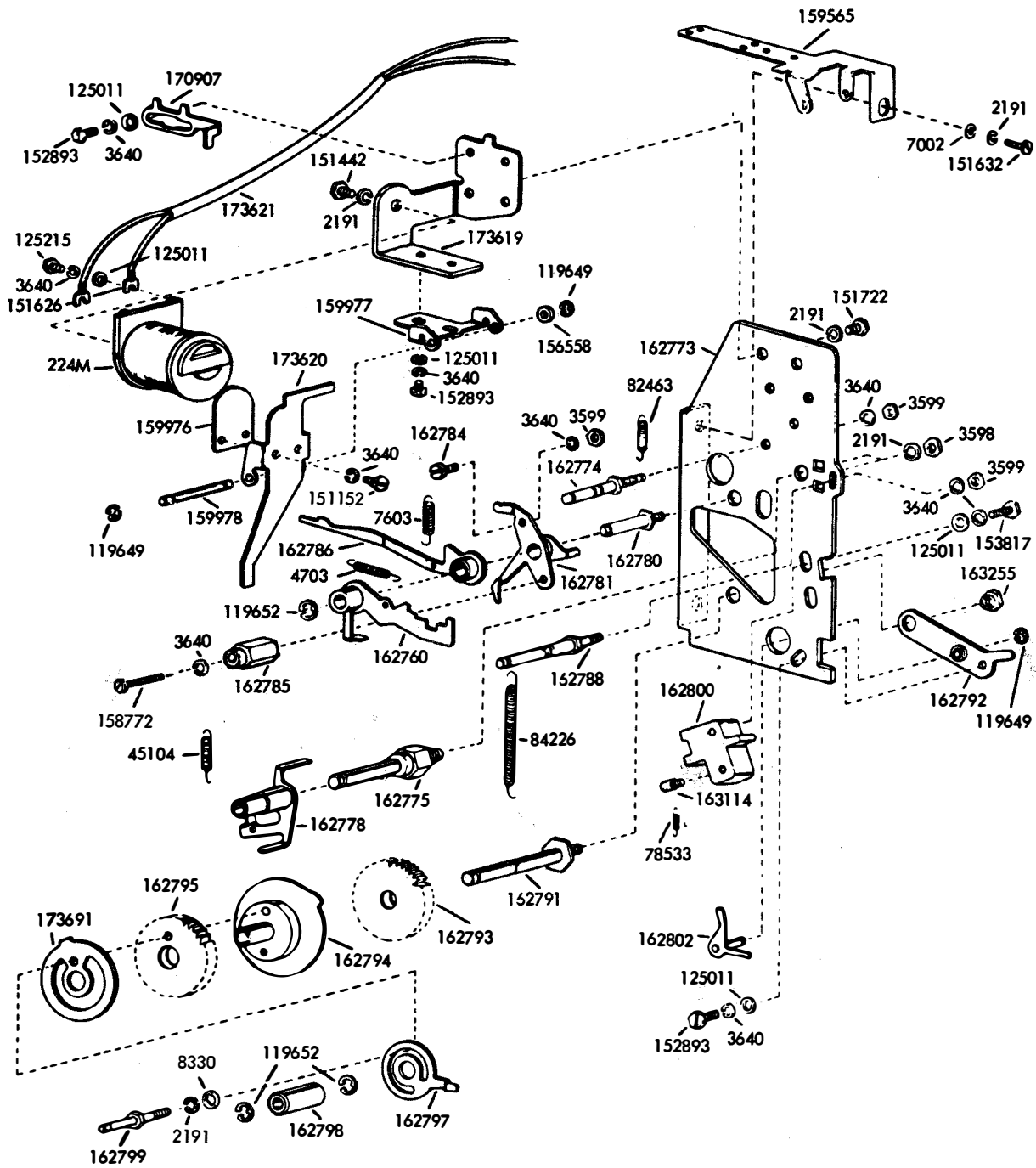


FIGURE 1

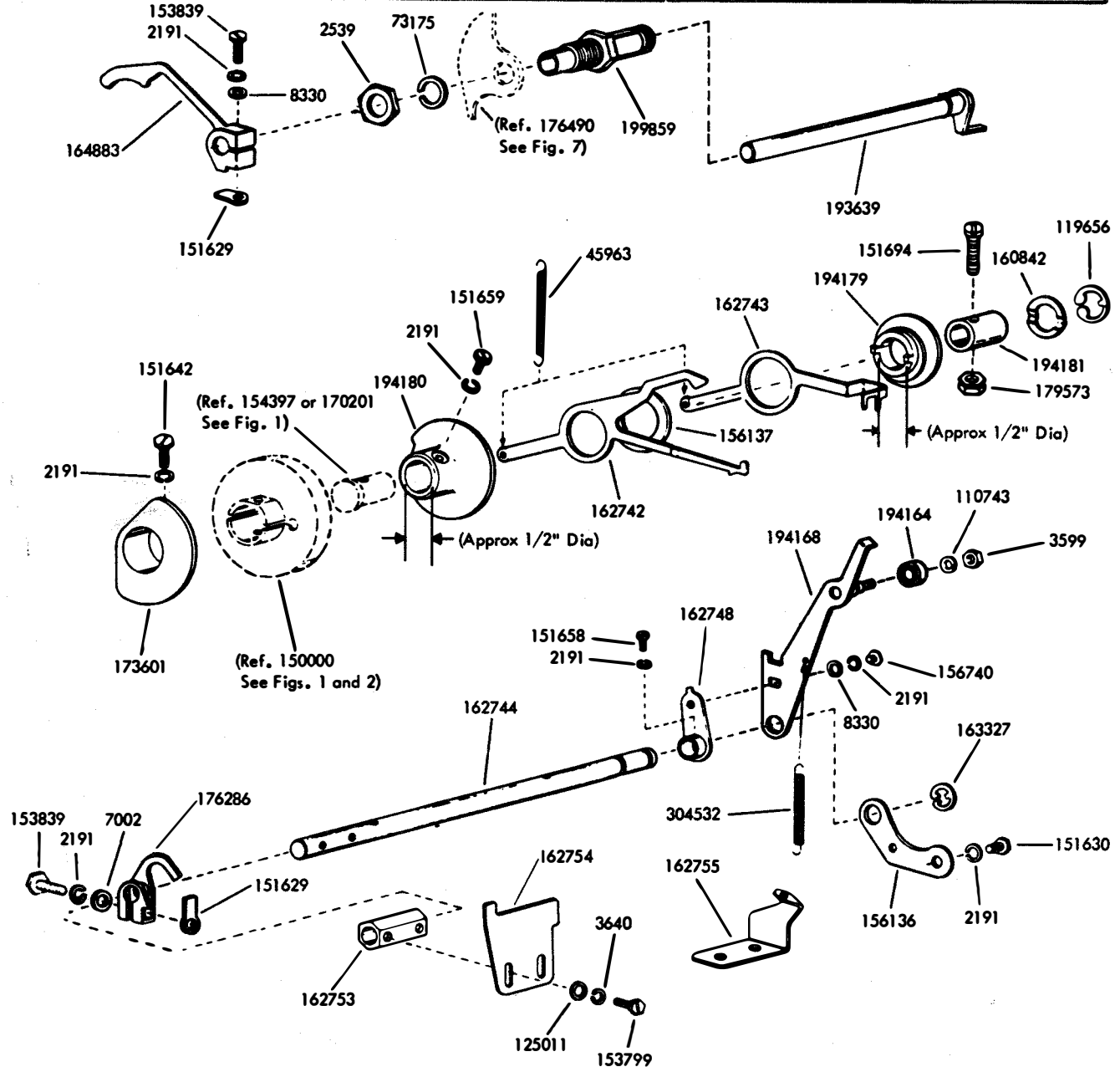
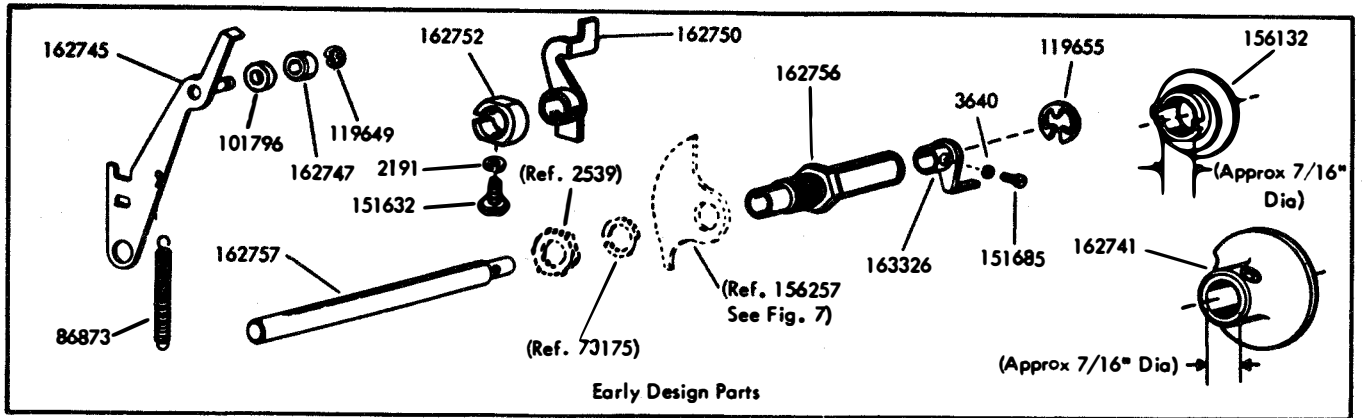


FIGURE 2

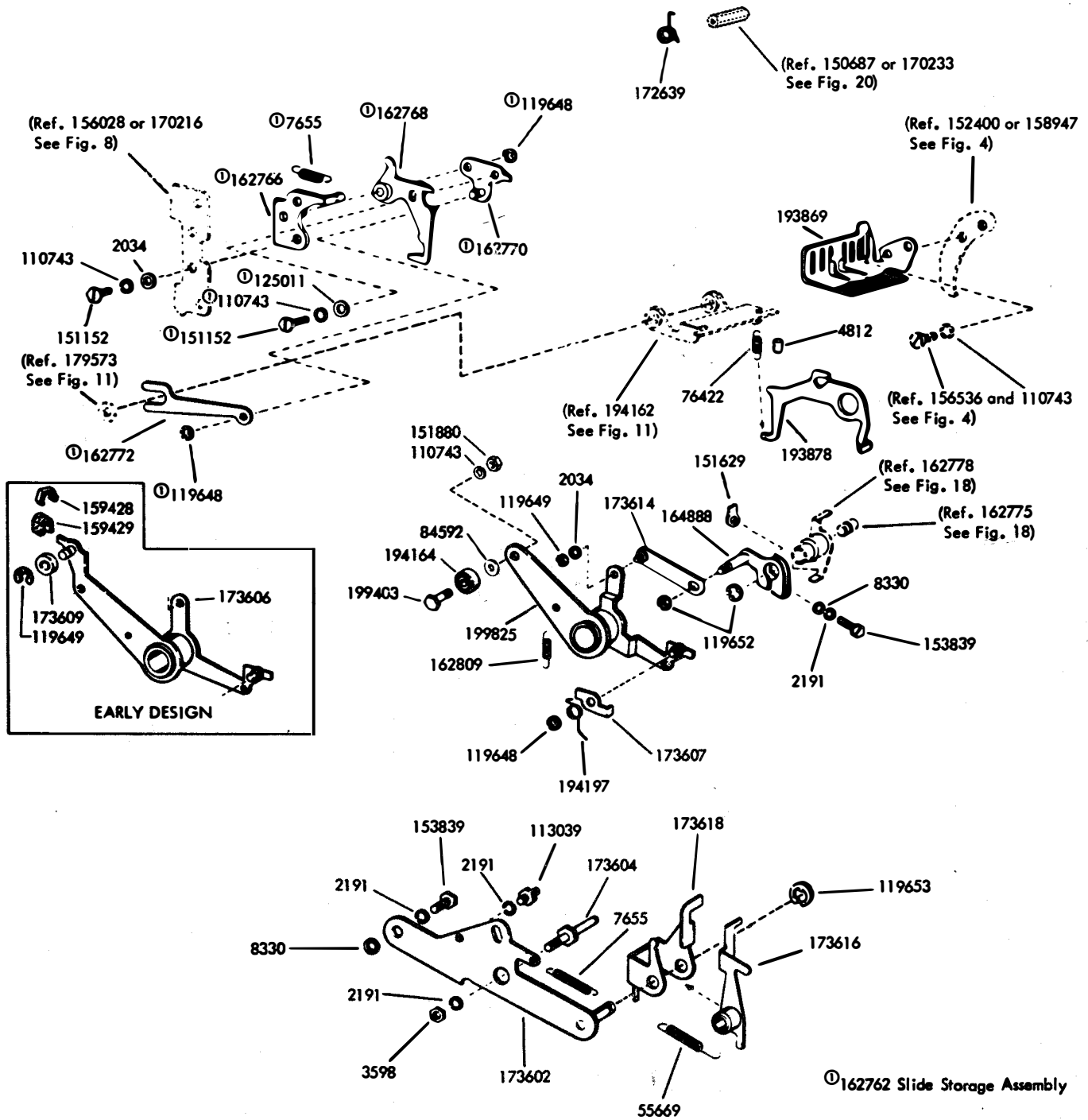


FIGURE 3