TELETYPE
PRINTING TELEGRAPH SYSTEMS

M23

PARTS
TELETYPE TAPE PRINTER (TICKER)
(FOR TICKERS BEARING SERIAL NUMBERS ABOVE 1000)

TELETYPE CORPORATION
SUBSIDIARY OF
Western Electric Company
CHICAGO, U.S.A.

Printed in U.S.A.
76220 COVER COMPLETE (N.Y.)
76210 COVER COMPLETE (N.Y.O.)

2422 LOCK WASHER
21087 3/8-16 HEX. NUT
76010 COVER (WITHOUT PLATES)
76350 NAME PLATE (N.U.-4-A)
76335 NAME PLATE (N.U.-A-A)
76320 NAME PLATE (N.U. LARGO)
28474 2-56 X4 SCREW

6346 CONTACT SPRING (WITH CONTACT POINT)
6346 CONTACT SPRING CLAMP
6346 CONTACT SPRING
6384 SCREW
6387 SCREW
6391 LOCK WASHER
6391 BLOCK
6392 ADJUSTING WHEEL
6393 ADJUSTING WHEEL BEARING
6341 BUSHING
6341 BUSHING RING

6360 GOVERNOR COVER
6360 GOVERNOR MOUNTING SCREW
6360 LOCK WASHER
6354 BRUSH HOLDER
6354 BRUSH HOLDER SCREW
6354 LOCK WASHER
6354 BRUSH CAP
6357 BRUSH SPRING
6357 BRUSH RING

THE 63220 INNER GOVERNOR RING 6320 OUTER GOVERNOR RING CAN BE INTERCHANGED AND CAN BE USED FOR REPAIRS ONLY IF PARTS ARE AVAILABLE. FOR REPAIRS DOWN AFTER RINGS HAVE BEEN ASSEMBLED ON THE GOVERNOR.

2425 GOVERNOR COMPLETE (FOR 1/2" MOTOR SHAFT)
(GOVERNOR COMPLETE DOES NOT INCLUDE BRUSH HOLDER & BRUSHES)
NOTES OF EXPLANATION

Page 1.
- #82051 main frame (comp.) - new style, with molded inserts, is interchangeable with #76055 main frame (comp.) - old style.

1. #76377 bushing and #34-1 nut are used only with #76055 (old style) frame.

2. #5428 resistance unit, 500 ohms, is used with 220 volt tickers.

Page 2.
- #76433 typewheel shaft (new style) is interchangeable with #76028 typewheel shaft (old style).

Page 3.
- #76453 bracket is used on induction motor tickers in place of #76214 bracket.

1. #76463 terminal block is interchangeable with #76186 terminal block.

2. For Western Union replacements order 1 mfd Condenser W.E. 21-AA, #22049 (W.U.) Screws and #3094 Insulator in place of #78011 one mfd. Condenser, #1116 Screws and #81937 Insulator Block.

Page 4.
- #78593 motor control (comp.) is used on 220 volt tickers.
76495 Hub (with gear) - 30 T. (60 C. Ind. - 4-A), 5
76496 Gear - 44 T. (60 C. Ind. - 4-A), 5
77140 Locknut, 2
77377 Hook, 3
77399 Cotter Pin, 2
77915 Fuse - 2 Amp., 3
77925 Locknut, 2
77933 Motor 1/25 H.P., 110 V., A.C. (Series), 5
77977 Cover - Metal, 4
77978 1 W.P. Condenser, 1, 3
78025 4-45 x 3/16 Screw, 5
78028 6-40 x 1/16 Screw, 7
78035 Resistor - 300 Ohms, 3
78066 Resistance Unit (Comp.) 150-300, 600 Ohms, 3
78077 Bearing Cap, 1
78088 Bearing Cap, 1, 2
78099 Bearing Cap, 1
78231 Armature (For #76493 Motor), 5
78240 Field Core (For 77953 Motor), 5
78241 Field Coils (For 77953 Motor), 5
78249 Field Coils (For Threading Motor), 5
78340 Cable Clamp, 1
78341 0.56 x 1/4 Screw, 6
78347 Field Core (For 73644 Motor), 5
78480 Field Coils (For 73644 Motor), 5
78562 Relay Insulator, 4
78593 Motor Control (Comp.) 4
78594 Bracket, 4
78595 4-36 x 1/16 Screw, 4
78596 Spacer, 4
78597 Insulator, 4
78598 Bushing (Short), 4
78646 Terminal, 4
78657 4-36 x 1/4 T.H. Screw, 4
78658 Washer, 4
78659 4-45 x 7/16 Screw, 4
78660 Magnet, 4
78661 Terminal, 4
78662 Terminal, 4
78663 Clamping Plate, 4
78665 Spacer, 4
78666 Frame, 4, 8
78667 Terminal (Left), 4
78668 Terminal (Right), 4
78669 Bracket (Left), 4
78670 Bracket (Right), 4
78680 Terminal, 4
78681 4-35 x 1/16 T.H. Screw, 4
78682 Insulator, 4
78683 4-45 x 3/4 F.H. Screw, 4
78684 4-45 x 7/32 F.H. Screw, 4
78685 Frame, 4
78695 Bracket (Adjusting Screw), 4
78696 Adjusting Screw, 4
78677 Biasing Spring, 4
78698 Contact Screw, 4
78699 Armature, 4
78900 Coil (5 ohms), 4
78907 Bushing (Long), 4
78908 4-45 x 3/16 F.H. Screw, 4
78909 4-45 x 1/2 Screw, 4
78911 Slewing - Short, 4
78912 Slewing - Long, 4
80011 Tape Reel Retainer (K. Y. Q. J.), 3
80012 Target - 29 Spot, 2
80016 Standard Base (Comp.) For D.O. Ticker, 3
80017 Standard Base (Comp.) - For A.O. Ticker (With Induction Motor), 3
80018 Radio Interference Base (Comp.) (W.U.), 3
80019 Fuse - 10 Amp., 3
80108 End Play Spring, 5
80263 Stator (For 76493 Motor), 5
80264 End Shield, 5
80265 Ball Bearing, 5
80266 Switch (For 76493 Motor), 5
80267 Centrifugal Mechanism, 5
80268 Fan, 5
80271 Clamping Screw, 5
80272 Fibre Washer, 5
80273 Felt Washer, 5
80274 Cup Washer 5
80275 Washer, 5
80276 Steel Washer, 5
80277 C-40 x 5/16 Screw, 5
80306 Bracket (With outlet bushings), 5
80312 Washer, 5
80315 Felt Washer, 5
80427 Rotor (Comp.) (For #76495 Motor), 9
80428 Stator (For #76495 Motor), 5
80430 Motor (Comp.) (For #76495 Motor), 5
80431 Switch (For #76475 Motor), 5
80440 Spring, 5
80441 Induction Motor Unit (Assam.)
80444 C-40 x 1/4 Screw, 1
80445 Slot, 5
80446 Cable, 5
80447 Cable, 5
80448 Washer 1/16, 5
80449 Washer 1/32, 5
80450 Washer 3/32, 5
80451 Spacing Sleeve, 2
80452 Oil Cup, 5
80453 Clamping Screw, 5
80564 Spring, 1
81000 Push Collar, 5
81027 Insulator Block, 3
81942 Gear - 41 T. (50 C. Ind. - 4-A), 5
81943 Pinion - 9 T. (50 C. Ind. - 4-A), 5
81944 Hub (with gear), 26 T.
81945 150 C. Ind. - 4-A), 5
81946 Induction Motor Unit (Assam.) - Low Speed - 60 Cycle A.C., 5
82051 Main Frame, (Comp.), 1
82289 Plate (with rockers), 5
82270 Spring Shaft, 5
ADDITION TO BULLETINS

Bulletin 127, Issue 3, Type Bar Tape Printer (Model 14), Page 36
Bulletin 137, Issue 2, Typewriter Tape Printer (Ticker), Page 29
Bulletin 138, Issue 5, Type Bar Page Printer (Model 15), Page 50
Bulletin 141, Issue 3, Transmitter, Page 18
Bulletin 147, Issue 2, Single Magnet Reperforator, Page 14
Bulletin 159, Issue 2, Typewriter Page Printer (Model 26), Page 36
Bulletin 160, Issue 1, Type Bar Printer (Model 20), Page 38
Bulletin 170, Issue 1, Multiple Transmitter Distributor and Base, Page 9
Bulletin 171, Issue 2, Typing Reperforator, Page 22
Bulletin 173, Issue 1, Single Unit Transmitter and Base, Page 8
Bulletin 176, Issue 1, Translator Unit, Receiving Distributor and Pane, Page 8
Bulletin 178, Issue 1, Reperforator Transmitter Distributor, Page 56
Bulletin 182, Issue 1, Multiplex, Start-Stop Extensor Set, Page 22
Bulletin 183, Issue 1, Portable Signal Distortion Test Set, Page 5
Bulletin 185, Issue 1, Multiple Transmitter Distributors and Base, Page 12
Bulletin 186, Issue 1, Two Channel Start-Stop Transmitter Distributor, Page 20
Bulletin 189, Issue 1 XD79 and XD95 Distributors, Page 15
Bulletin 192, Issue 1, Teletype Automatic Wheatstone Reperforator Set, Page 19
Bulletin 193, Issue 1, Reperforator Transmitter Distributor (Model 14), Page 9
Bulletin 197, Issue 1, Multiple Reperforator Set, Page 25

Add the following adjustment immediately preceding the "SPEED ADJUSTING WHEEL FRICTION WASHER SPRING TENSION ADJUSTMENT":

ADJUSTMENTS FOR ALIGNMENT AND SQUARENESS OF GOVERNOR CONTACTS

All governor contacts can be adjusted for alignment of edges; only those governor shells which provide elongated mounting holes for the fixed contact bracket permit adjustment of the contact for height by positioning the contact bracket.

The governor contacts should be in line and meet squarely so that maximum contact surface is provided. (Check with the retractile spring tension Adjusted so that the contacts just make, or the the limit of the adjusting screw).

(a) Line up edges of contacts by means of the floating contact hinge mounting screw.

(b) Adjust contacts for squareness from right to left by positioning the height of the fixed contact bracket using the elongated mounting holes in the governor shell.

(c) To adjust from front thack, twist the floating contact hinge, applying pressure to the arm near the contact.

NOTE: Check by use of a .002" gauge (smaller if available). Check with gauge between edges of contacts to see that the gauge enters (or does not enter equally on all sides.

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CHANGES IN BULLETINS

137, Issue 2, Type Wheel Tape Printer (Ticker), Page 29
147, Issue 2, Model 14 and 20 Nontyping Reperforator, Page 14
159, Issue 2, Model 26 Type Wheel Page Printer, Page 36
170, Issue 1, Single and Multiple Transmitter Distributor and Base, Page 9
175, Issue 1, Single Unit Transmitter and Base, Page 8
176, Issue 1, Translator Unit, Receiving Distributor and Panel, Page 8
183, Issue 1, Portable Signal Distortion Test Set (Code Disc Operated), Page 5

SPEED ADJUSTING WHEEL FRICITION WASHER SPRING TENSION ADJUSTMENT

Change the tension requirement for starting the adjusting wheel moving to read "16 to 24 ozs." instead of "16 to 20 ozs."

Bulletin 137 - Change the requirement to read "16 to 24 ozs." instead of "8 to 12 ozs."

Bulletin 147 - Change the requirement to read "16 to 24 ozs." instead of "8 to 16 ozs."

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Printed in U.S.A.
CHANGES IN LUBRICATION SPECIFICATIONS
WHICH APPLY TO ALL TELETYPRE APPARATUS

The following lubricants have been standardized for use on all types of Teletype apparatus. These lubricants supersede those referred to in preceding Teletype specifications. The lubricants can be ordered from Teletype as follows:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>88970</td>
<td>1 Qt. of KS-7470 Oil</td>
</tr>
<tr>
<td>88971</td>
<td>1 Gal. of KS-7470 Oil</td>
</tr>
<tr>
<td>88973</td>
<td>1 Lb. of KS-7471 Grease</td>
</tr>
<tr>
<td>*88975</td>
<td>KS-8319 Grease Gun</td>
</tr>
<tr>
<td>97116</td>
<td>4-oz. Tube of KS-7471 Grease</td>
</tr>
</tbody>
</table>

The above grease is recommended instead of oil for lubricating motors equipped with ball bearings. The 88975 grease gun should be used for injecting grease into the bearings of Teletype ball bearing motors. The gun may be used also for applying grease to other parts of the apparatus and no other grease container need be carried. If this grease gun is not available, the oil listed in the foregoing should be substituted for lubricating ball bearing motors.

*Instructions for Filling the Grease Gun*

1. Unscrew the lubricant tube from the cap casting of the grease gun.

2. Insert fresh lubricant through the open end of the tube with the fingers. Apply gradually to eliminate air pockets.

3. Tamp the lubricant down solidly in the tube by pounding the closed end solidly against the palm of the hand. Continue to add lubricant until the tube is completely filled and the metal follower rests against the perforated tube cover.

4. Fill the cap casting with lubricant flush to the bottom side of the tube threads.

5. Screw the lubricant tube into the cap casting part way only. Then insert a pencil or rod through the perforated tube cover and exert pressure against the metal follower so as to expel any entrapped air past the tube threads. When lubricant begins to ooze through the threads, tighten the lubricant tube securely in the cap casting.

6. Operate the handle back and forth for several strokes or until lubricant is pumped from the nozzle. The gun is then ready for use. If the lubricant does not flow from the nozzle in a solid stream, it is an indication that all air has not been expelled from the lubricant tube. Invert the gun and pound the cap casting end against the palm of the hand to jar the lubricant into the pump cylinder.

*Instructions for Lubricating Motor Ball Bearings*

The motor bearings are packed with grease before the motor leaves the factory and under ordinary operating conditions need no additional lubrication for
approximately two months. At the regular lubricating intervals one or two
strokes of the plunger of the gun should apply sufficient grease to each
bearing. To lubricate, press the nozzle of the gun against the ball oiler
and force the grease into the hole by pushing on the plunger of the gun.
Care should be taken that the bearings are not overloaded. Overloading will
result in the grease oozing out of the end castings and being forced into the
motor or being thrown on other parts of the mechanism. After lubricating,
the motor should be run for a few minutes and then any excess grease that has
been forced out of the ends of the castings should be wiped off. Each time
that the gun is used for lubricating a motor bearing, the plunger should
first be depressed slightly to make sure that grease will be delivered.
ADJUSTMENTS OF TICKER SELECTOR MAGNET UNIT
WITH "T" SHAPED ARMATURE

To be used in conjunction with Bulletin 137 -
Description and Adjustments of the
Typewheel Tape Printer (Ticker).

Page 12.
Cancel: SELECTOR ARMATURE PIVOT SCREWS ADJUSTMENT.
SELECTOR ARMATURE POLE PIECES AND BUFFER SCREWS ADJUSTMENT, FIG. 7.

and substitute the following:

SELECTOR ARMATURE PIVOT SCREWS ADJUSTMENT: - Remove permanent magnet and back
off armature buffer screws. Adjust the "up" and "down" position of the
armature, by means of its pivot screws, so that the top surface of the arm-
ature is flush with the top surfaces of the right ends of the pole pieces,
and so that the armature is free, without end play. Replace permanent
magnet so that the mark "TOP" is uppermost.

PERMANENT MAGNET ADJUSTMENT: - Adjust the position of the permanent magnet so
that the ends of the magnet are approximately 3/4" from the left ends of the
pole pieces (See figure).

POLE PIECES ADJUSTMENT: - Loosen pole piece mounting screws. Move one pole
piece as far toward the buffer screws as possible, holding it against the
permanent magnet, and tighten the mounting screws just enough to hold
the pole piece in this position. Hold the armature against this pole piece at
the left end and adjust the other pole piece so that it just touches the
"T" arm of the armature. Make sure that this pole piece is against the per-
manent magnet and tighten the mounting screws. Now hold the left end of the
armature against this pole piece and adjust the other pole piece so that it
just touches the "T" arm of the armature. Make sure that this pole piece is
against the permanent magnet and tighten the mounting screws.

Note: - When tightening the left hand pole piece mounting screws hold the
selector coil retainer plates so that the selector coils are held
securely between the retainers.

BUFFER SCREWS ADJUSTMENT: - (A) Insert a .020" gauge between the left end of
one pole piece and the armature. Hold the armature against the gauge and
adjust the buffer screws so that there is from .004" to .005" space between
each buffer screw and the side of the armature. Remove the .020" gauge.
(B) Place the selector armature on the spacing side, hook an 8 oz. scale
over the pin on the armature and pull at right angles toward the front of
the printer. Observe the tension required to pull the armature to the mark-
ing side. Now hook the scale over the pin and pull at right angles toward
the rear of the printer. Observe the tension required to pull the armature
to the spacing side. If the two tensions are not within one ounce of being
equal, refine the buffer screws adjustment. This adjustment should be made
so that the armature will have from .008" to .009" travel between the buffer

(over)
screws (See figure).

Page 13.

MAGNET BASE POSITION, FIG. 8 - change to read: "from .003" to .005" instead of "from .002" to .004".

Insert after MAGNET BASE POSITION, FIG. 8.

After tightening base mounting screws recheck BUFFER SCREWS ADJUSTMENT, item (B). If it is necessary to change the adjustment of the buffer screws recheck MAGNET BASE POSITION.
ADJUSTMENTS OF FIVE UNIT TICKER SHIFT MECHANISM

To be used in Conjunction with Bulletin #137 — Description & Adjustments of Typewheel Tape Ptr. (Ticker)

For tickers equipped with the five unit shift mechanism add the following adjustments after flutter cam oiler adjustment on page 23, Bulletin 137.

1-Remove cover guide. Place the code discs in the spacing position. Loosen the shift pawl lever arm mounting screws and the shift bracket mounting stud and screw. Adjust the shift bracket so that there is from .070" to .080" space between the shift pawl lever roller and the lower shift pawl when the roller is against the upper shift pawl (near the upper end). Tighten the shift bracket mounting stud and screw and recheck the above adjustment.

2-Remove both shift pawl springs and check pawls for freeness. Replace springs.

3-Check to see that the shift pawl lever roller turns freely and that the pin is bent so as to be safe from falling out.

4-Check to see that the shift pawl lever is free and has not more than .006" end play.

5-Adjust the shift pawl lever arm so that the pin on the shift pawl lever does not bind in the selector lever when in either the marking or the spacing position and so that the travel of the shift pawl lever roller is centered between the upper and lower shift pawls. Tighten the shift pawl lever arm mounting screws and recheck the above adjustment.

6-Check to see that when the #6 selector lever is in the marking position there is a clearance of from .002" to .006" between the shift pawl lever roller and the lower shift pawl when the play of the shift pawl lever and roller is taken up in a direction to make this clearance a maximum. Make the same check between the shift pawl lever roller and the upper shift pawl with the #6 selector lever in the spacing position. If necessary readjust the shift pawl lever arm or the shift bracket to obtain the above clearances. If it is necessary to readjust either arm or bracket recheck adjustment #5.

7-Check to see that both upper and lower shift pawls are safely on their stop pin rollers and that they clear the front guide disc.

8-Place the code discs in the marking position and #6 selector lever in the spacing position and check to see that there is not more than .015" clearance between the shift pawl lever roller and the lower shift pawl when all the play of the shift pawl lever and roller is taken up in a direction to make this clearance a maximum.

Make the same check between the shift pawl lever roller and the upper shift pawl when #1, #2, #4 and #5 code discs and #6 selector lever are in the marking position and #3 code disc is in the spacing position.

9-Place the code discs in the spacing position and check to see that the center of the shift pawl lever roller is at least .010" below a line connecting the upper ends of the shift pawls.

10-UPPER AND LOWER SHIFT PAWL SPRING TENSION: With the code discs in the spacing position hook a 32 oz. scale over each pawl at the end of the pawl and pull at right angles to the pawl. It should require from 10 1/2 to 14 ozs. to just start each pawl moving.

11-Replace cover guide.

LUBRICATION:

In addition to the parts listed on page 8, Bulletin 137, the following parts of the new shift mechanism should be lubricated in the same manner:

(1) Shift pawl lever roller
(2) Shift pawl lever bearing
(3) Shift pawl lever pin
(4) Shift pawl bearing