

**BELL SYSTEM PRACTICES**  
**Teletypewriter Stations**

**SECTION P33.014**  
**Issue 2, February, 1954**  
**AT&T Co Standard**

## **PREPARATION OF TELETYPEWRITER APPARATUS FOR INSTALLATION**

### **1. GENERAL**

1.01 This section outlines the procedure for inspecting, lubricating and testing repaired or new teletypewriter apparatus prior to putting the apparatus in service.

1.02 This section is reissued:

- (a) To extend the application of the section to units repaired for reissue.
- (b) To change the information on LUBRICATION.
- (c) To provide for the preliminary testing of units intended for 100-WPM operation.
- (d) To recognize and reflect the possibility of this work being made the responsibility of the Western Electric Distributing House when the Telephone Company so elects.

1.03 The inspection, lubrication and other checks and tests specified in this section are those which can be justified prior to installation for the usual customer service. As a result of experience with certain critical installations, it may be desirable to include tests of features not specified herein, or to increase the duration of the test run.

1.04 It is recommended that all **new** apparatus be treated by the procedure of this section. The work may be done by the Telephone Company, or, if requested by the Telephone Company, by the Western Electric Company Distributing House.

1.05 For apparatus which has recently been **repaired** by a Distributing House Shop, the procedure of this section, or its equivalent, will have been carried out in accordance with the applicable Bell System Repair Specification and need not be duplicated. However, if apparatus has been stored on

warehouse shelves for some time, at least the lubrication should be checked and the tests and adjustments of Part 5 of this section made.

1.06 Specific cleaning, lubricating, requirements and adjustment procedures, testing, etc., information, will be found in the sections covering these subjects for the type of unit affected.

1.07 The following general BSP sections should be referred to and followed as required:

Cleaning—General Requirements	P30.010
Lubrication—General Requirements	P30.011
General Requirements	P30.012
Selector Mechanisms	P32.001
Motor Units and Governors	P32.004

## 2. PRELIMINARY OPERATIONS

2.01 **Unpacking:** The unit should be removed from any shipping container or cover after all packing material which would interfere with such removal has been taken out carefully.

2.02 **Visual Inspection:** Immediately after unpacking a unit, an inspection should be made for any broken, missing or loosened parts that can be detected without any disassembly of the unit. If any such condition is discovered, the installer should take the appropriate corrective measures. However, if the services of the Western Electric Distributing House were utilized for preparing the apparatus for installation, the Distributing House should be requested to arrange for such corrections.

## 3. LUBRICATION

3.01 **Relubrication:** Units are thoroughly lubricated at the factory. However, before packing, oil and grease which might run out during shipment is removed from oil cups, hollow shafts, gears and pinions, and similar locations. Therefore, before any testing is started, such points should be relubricated in accordance with the BSP sections covering lubrication of the particular unit.

3.02 **Condition of Lubricants:** In addition to the situation described in 3.01, in some cases units will have been packed and stored for a considerable time prior to shipment and when received the lubricants may have become oxidized or dry. Therefore the condition of the lubrication of the entire unit should be judged by checking the lubricants on such parts

as the printing- and function-bail cam-rollers, printing-bail blade, gears, etc. and the felt washers between the clutch friction disks.

(a) If the grease has not hardened or dried and the felt washers do not show evidence of being dry, the lubrication may be considered adequate. However, in addition to relubrication of certain features as called for in 3.01, the following points should be relubricated.

- (1) Felt washers
- (2) Printing- and function-bail cam rollers
- (3) Left-hand margin adjusting screw and dashpot lever
- (4) Code-bar locking pull-bar (14 typing reperforators)
- (5) Motor ball-bearings

(b) If the grease appears to have hardened or dried or the felt washers appear to have dried, the unit should be completely relubricated in accordance with the general section on lubrication and the particular section applicable to the type of unit.

Note 1: Under no circumstances should a solvent be used to remove grease from a normally-lubricated surface. Grease should be removed with the blade of a screwdriver or similar tool.

3.03 When the services of the Western Electric Company have been utilized to prepare the apparatus for installation it may have been arranged that the Distributing House should remove excess oil and grease from the oil cups, hollow shafts, gears and pinions or similar locations before shipment. If that has been done, the unit will be tagged or marked to that effect. In this case, the installer should relubricate such points, as called for in 3.01.

#### 4. 100-WPM SPEED UNITS

4.01 Units intended for 100-wpm operation should be checked for the ability to meet certain special tests. Such tests are described in the following sections:

- |         |   |
|---------|---|
| P35.632 | 14-type Transmitter Distributor                     |
| P35.652 | 14-type Typing Reperforator<br>(including selector) |
| P36.611 | 15-type Typing Unit<br>(including selector)         |
| P36.621 | 15-type Keyboard                                    |
| P36.661 | 15-type Perforator Transmitter                      |

## 5. TESTING AND ADJUSTING

### 5.01 Selector Mechanism:

- (a) The receiving margins should be checked as called for in P30.002 and the range-finder arm set as described therein.

Note 1: Factory margin tests for 60- and 75-speed operation are made under the 0.060-amp. operating current condition. When units are tested on 0.020-amp. operating current, it may be necessary to make some minor readjustments on the selector.

Note 2: For 100-speed operation, check the special selector adjustments given in the 100-speed sections for the typing unit or typing reperforator.

- 5.02 **Test Operating Run:** If practicable, typing units and reperforator units should be connected to a source of test signals and operated for a period of approximately two hours. During the test run, the type alignment should be satisfactory and the copy should be free from errors.

Note: A convenient method for testing reperforators is to feed the tape from the reperforator into a transmitter distributor whose output is connected back to the reperforator. Thus after introducing one test sentence, it will continue to reproduce itself. Errors experienced in the test run will be cumulative and can be checked on the last copy produced thus avoiding the need for checking all copy.

### 5.03 Testing Keyboards, Perforators and Tape Sending Sets:

- (a) Keyboards and sending sets should be checked by sending to an associated typing unit at least twenty lines of copy in which all of the various combinations are used.

- (b) The touch used to operate the keys should be varied as follows:

- (1) From slow to fast.
- (2) From light to heavy.
- (3) Pressure applied straight downward.
- (4) Pressure applied at an angle from either side of the key.

- (c) The character of sent signals should be checked in accordance with P30.002.

- 5.04 **Special Features:** Any special feature with which the apparatus is equipped shall be tested using as a guide the applicable P sections, or the S specifications listed in P10.382.