

STANDARD ADJUSTMENT
FOR
TYPE 31 MONOPHONE DESK SET 1,2, OR 3 KEY SUB-BASE

A - GENERAL:

1. The Type 31 Monophone Desk Set shall meet the general requirements specified in A-100 which are applicable.
2. Unless otherwise specified, make or break contacts shall have a minimum follow of .015".
3. Unless otherwise specified, contact separation for make or break contacts shall be minimum .010".
4. The wire guard shall be bent to provide clearance between the plunger pin and the wire guard on the hookswitch. Adjust trip lever so plunger hits approximately in the center of the trip lever bushing. Adjust trip lever so the upper surface of the trip lever bushing is approximately at right angles to the plunger at the time the key or keys are tripped.

B - KEY OPERATED SPRINGS: (Other than two key Desk Set with Line and Hold Keys)

1. The break spring of a make-before-break assembly shall rest against its back contact with a pressure of minimum 50 grams with the keys at normal.
2. Lever springs not having back contacts shall rest on their respective operating rollers with a minimum pressure of 50 grams measured at the bend in the spring with the keys and locking mechanism at normal.
3. Lever springs having back contacts shall at least perceptibly clear operating rollers with the keys and locking mechanism at normal.
4. When the right-hand lever is operated, there shall not be enough play in the second lever to close the contacts of the latching springs associated with the second lever.
5. Contact springs which latch shall make contact sufficiently before break springs break contact that perceptible follow of the back contact springs is visible after the make springs make contact.
6. In break-make assemblies back contacts shall open before make contacts close.
7. Springs #1 and #2 and #3 and #4 of the right pile-up shall make and break at approximately the same time as the corresponding springs of the left pile-ups as judged visually.
8. The balance springs shall be tensioned against the buffer which is attached to a key link with a pressure of 50 grams minimum, 100 grams maximum.



C - HOLD KEY OPERATED SPRINGS: (Two Key Desk Set with Line and Hold Keys)

1. Lever springs not having back contacts shall rest on their respective operating rollers with a minimum pressure of 50 grams measured at the bend in the spring with the keys and locking mechanism at normal.
2. Springs operated through a bushing by a lever spring shall be tensioned a minimum of 25 grams against the lever spring. The pressure of the lever spring against the roller shall be the combined pressure of the lever spring and all springs resting against it.

D - LINE KEY OPERATED SPRINGS: (Two Key Desk Set with Line and Hold Keys)

1. Each arm of a thin spring of a twin contact make-before-break assembly or reverse make-before-break assembly shall be tensioned against the heavy short spring with a pressure of 40 grams minimum measured at the tip of the thin spring.
2. Make or break contact separation of a twin contact make-before-break assembly or a reverse make-before-break assembly shall be minimum .008".
3. Lever springs with twin contacts shall rest against their respective rollers with a minimum pressure of 50 grams, maximum 125 grams measured at the bend in the spring with the keys and the locking mechanism at normal. The pressure in the two springs must be as equal as is commercially possible.
4. In break-make assemblies back contacts shall open before make contacts close.
5. The stop spring shall hold a damped spring securely against its buffer spring, and the buffer spring shall have maximum 300 grams against the damped spring.
6. Both the buffers and the stop springs shall rest squarely against a damped spring.
7. Damped springs shall have a minimum follow of .025".
8. The twin contacts on any pair of springs shall make or break simultaneously.
9. The sequence of switching on the line key shall be as follows:
 1. Make contact of reverse make-before-break spring assembly closes.
 2. Break contact of reverse make-before-break spring assembly opens.
 3. Make contact closes as break contact on opposite lever spring opens.
 4. Make of make-before-break spring assembly closes.
 5. Break contact of make-before-break spring assembly opens.
10. The contact separation between corresponding springs in the left or right pile-up shall be approximately equal.

E - LATCHING SPRINGS:

1. The latching springs shall have minimum 50 grams maximum 75 grams tension against the key operated springs when the springs are in their latched position and the latching key is completely operated.
2. The latching springs shall latch the key operated springs by minimum perceptible, maximum .008" when the keys are in their locking position. When the springs are in the latched position and then the latching key is thrown to its full stroke, there shall be at least perceptible movement of the key operated springs. Make contacts shall have 40 grams minimum contact pressure when latched.
3. The latching springs shall release and the keys restore when the hookswitch plunger is pressed down to within 1/8" of the name plate.
4. Contact springs, when used on the same pile-up as the latching springs, shall make or break contact when the monophone is removed from the cradle.
 - (a) When the make contact springs are closed after the monophone is removed from the cradle, there shall be at least perceptible clearance between the latching spring and the bushing of the lever contact springs with all keys at normal.

F - TRIP LEVER OPERATED SPRINGS: (Two Key Desk Set-with Line and Hold Keys)

1. Dead springs shall be tensioned against the buffers with a minimum pressure of 40 grams each. The tension in the two springs shall be approximately equal.
2. The break spring shall have a contact pressure of minimum 40 grams, maximum 100 grams.
3. There shall be minimum perceptible clearance between the dead spring and the break spring bushing.
4. There shall not be sufficient tension in the trip lever operated springs to prevent the handset from completely operating the plunger.
5. The break contacts shall have opened when the outer plunger has been depressed to within 1/8" of the name plate.

G - PUSH BUTTON SPRINGS:

1. The dead spring shall rest against the push button with minimum 50 grams, maximum 100 grams pressure.
2. The break spring shall have a contact pressure of minimum 50 grams, maximum 100 grams.
3. There shall be perceptible clearance between the dead spring and the break spring bushing.

H - KEYS AND KEY RESTORING MECHANISM:

1. All moving parts shall be free from bind or unnecessary friction.
2. Unless otherwise specified, all keys and spring assemblies shall restore to normal when the top of the outer plunger is 1/8" above the name plate, and shall not restore when the top of the outer plunger is 7/32" above the name plate. When making this test, depress the plunger slowly.
3. Unless otherwise specified, when the monophone is in the cradle, it shall not be possible to operate any key and have it remain operated.
4. The line key of a two-key desk set with line and hold keys shall remain in either position 1 or 2 when operated by hand.

J - CLICK TEST: (Two Key Desk Set with Line and Hold Keys)

1. The telephones shall be wired according to Circuit H-27585 and connected to two lines. When the line key is operated rapidly, the click in the receiver of any of the telephones on either of the two lines shall not be of greater intensity than that caused by operating the key very slowly by hand.
2. The switches shall be readjusted to eliminate clicks of objectionable intensity as specified above in J1. Readjust to the following limits if necessary:
 - (a) The minimum pressure of D1 may be reduced to 30 grams.
 - (b) The minimum contact separation of D2 may be reduced to .006".
 - (c) One contact of a pair may lag the other by as much as .003".

K - LUBRICATION:

1. One drop of spindle oil (See Specification 5231) shall be applied at each of the following points:

NOTE: A drop of oil shall be considered to be the amount released from a piece of number 22 B&S gauge, bare tinned copper wire after it has been dipped 1/2" into the lubricant and quickly withdrawn.

- (a) Key bearings.
- (b) Key link bearings.
- (c) Key link slot bearings.
- (d) Lever arm bearings.
- (e) Key trip lever bearings.
- (f) Trip lever spring arm bearings.
- (g) Key interlocking lever bearings.
- (h) Trip lever link bearings.
- (j) Key trip cam bearings.
- (k) Bearing between key trip cam and trip lever link.



2. One dip of spindle oil (See Specification 5231) shall be applied at the following points:

NOTE: A dip of oil shall be considered to be the amount retained in a #4 Artist's Sable Rigger brush after being dipped in the lubricant to a depth of 3/8" and then scraped on the edge of the container to remove surplus oil.

- (a) To the top of the fibre bushing on the key trip lever.
 (b) To the top of the plunger operated by the hookswitch.
3. One dip of switch lubricant (See Specification 5232) shall be divided between the latching lugs of the latching springs.

REVISED BY:

RBK:LS

RBK:LS

FM:AK

LJS:LB

RETYPE

RM

REVISED BY:

LWD:hz

AUTOMATIC ELECTRIC COMPANY
 CHICAGO, U. S. A.

APP'D

H.E.F.

F.E.W.

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