

STATION DIALS

ROTARY TYPE

IDENTIFICATION AND ASSEMBLY OF PARTS

1.00 INTRODUCTION

1.01 This section covers the identification and assembly of parts of 5-, 6-, 7-, and 8-type dials.

1.02 This section is reissued to:

- Add 6P45 dial to Tables E and F
- Add 7L dial to Tables J and K
- Add 8E and 8F dial to Tables L, M, and N.

1.03 Due to extensive changes marginal arrows have been omitted.

2.00 IDENTIFICATION

2.01 5-Type Dials (Fig. 1).

- Table A — assembly of parts
- Table B — use of dials
- Dial contact schematics (Fig. 2 and 3).

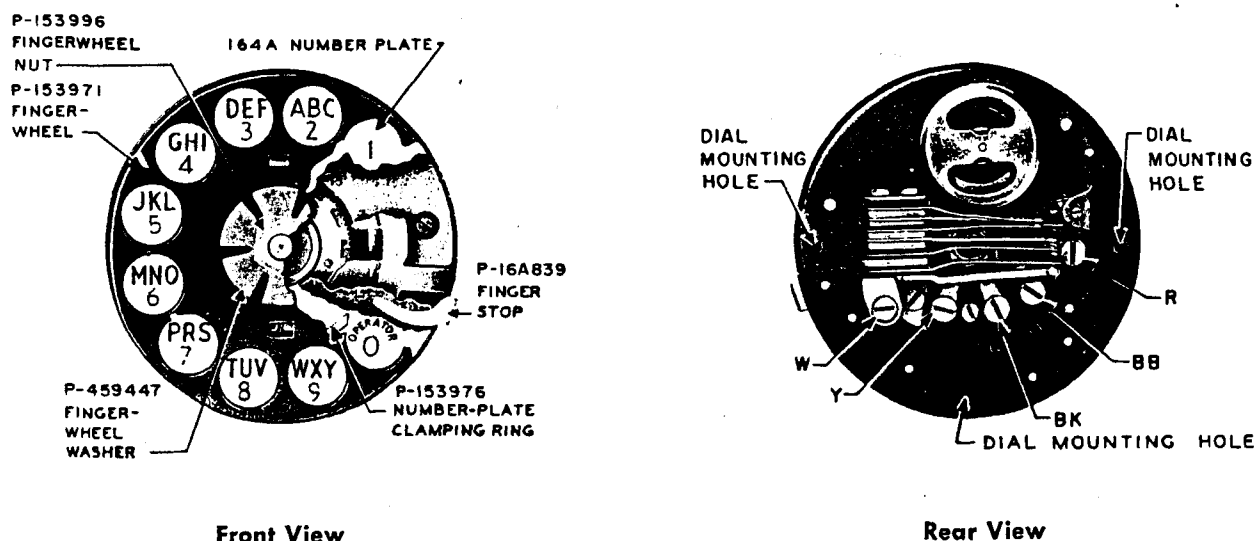


Fig. 1 — 5-Type Dial

TABLE A
ASSEMBLY OF PARTS FOR 5-TYPE DIALS

Dial Type	Number Plate	Card Holder Assembly	Fingerwheel	Fingerwheel Washer	Fingerwheel Nut	Dial Mounting Screw
5	See Tables B and G		P-19B524 (plastic)	P-459447	P-153996	P-131556
		P-298106	P-153971 (metal)			

TABLE B

USE OF 5-TYPE DIALS*

Dial Type	Schematic Fig.	Pulses per Second	Number Plate	Use	Recommended Replacement
5EA 5EB 5ED 5EE	2	10	150A 150B 150D 150E	PBX or operator's "A" position with circuit arranged for 10 pps.	6E
5FB	2	20	150B	Same as above except arranged for 20 pps.	6F
5HA 5HB 5HD 5HE	3	10	150A 150B 150D 150E	Subscriber stations.	6A 6D for color
5HH	3	10	150H	Coin collectors.	6C
5JA 5JB 5JE	3	10	150A 150B 150E	Subscriber stations with colored sets. Have plastic fingerwheels and white cases.	6D
5KB	3	20	150B	High-speed dialing into panel and crossbar central offices.	6G
5LA 5LB 5LD 5LE	2	10	150A 150B 150D 150E	Intertoll dialing. Permits closer regulation of dial speed than 5E dial.	6E

*These dials have been rated Manufacture Discontinued.

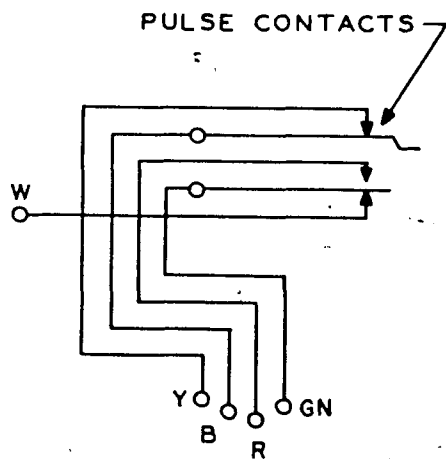


Fig. 2

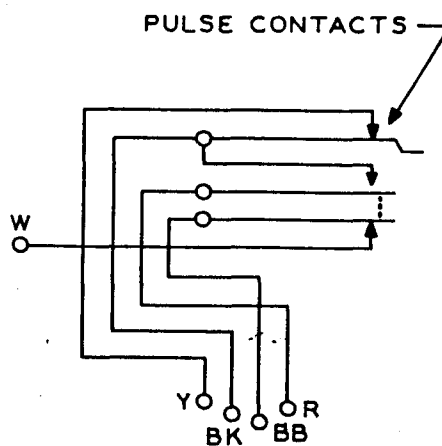


Fig. 3

Dial Contact Schematics

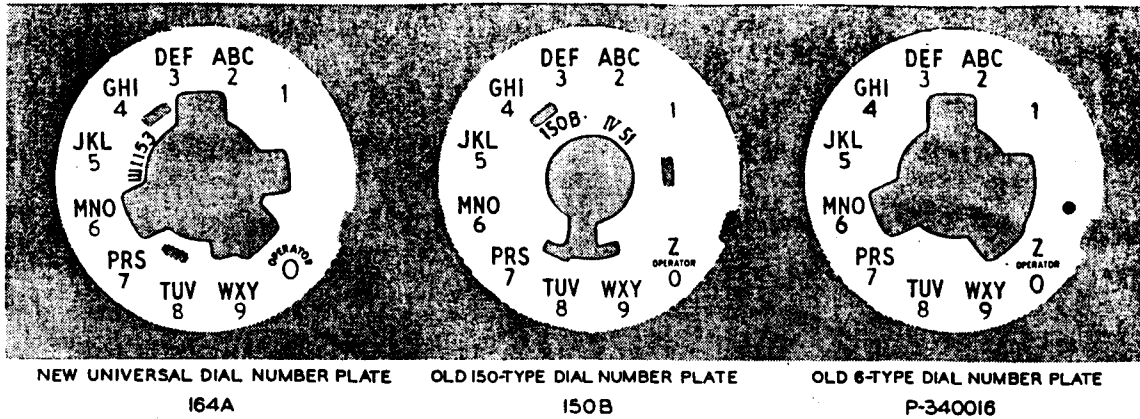


Fig. 4 — Number Plates

2.02 The 164A number plate has been made available for use with 5- and 6-type dials. It is intended for general station use. A blank number plate 164B (see Table C) is available for use with coin collectors. Fig. 4 shows a comparison of universal number plate 164A and 150B and P-340016 number plates.

3.00 NUMBER PLATES FOR 5-TYPE DIAL

3.01 The number plate on a 5-type dial is changed as follows:

- Remove card holder, fingerwheel nut, washer, fingerwheel, and number-plate clamping ring.

3.02 When replacing clamping ring over number plate, first insert a prong of clamping ring into lower slot in number plate, and then force the other two prongs into remaining slots.

3.03 If number plate of 5-type dial is removed for any reason, dial shall be equipped with vincellatate muslin dust cover, P-347826 gasket, and P-347836 metal guard. Metal guard prevents interference between dust cover and main gear assembly.

3.04 When assembling guard and dust cover, metal guard is assembled next to number-plate support; then, dust cover is placed over metal guard. Dust cover shall not be creased or wrinkled. Operate dial after assembly to assure that dial operates freely.

3.05 If 132-type number plate is used, P-459089 (old) guard may be used; or number plate should be replaced with 149, 150, or 164A plate and P-347836 guard.

3.06 The 164C3 number plate used with 5M or 6H dial helps to simulate 7-type dial when used on 5300 and 5400 series telephone set, as shown in Fig. 5.

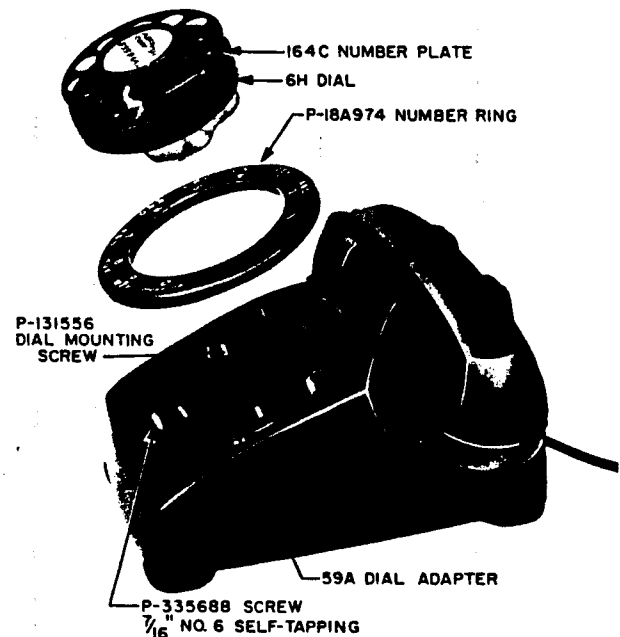
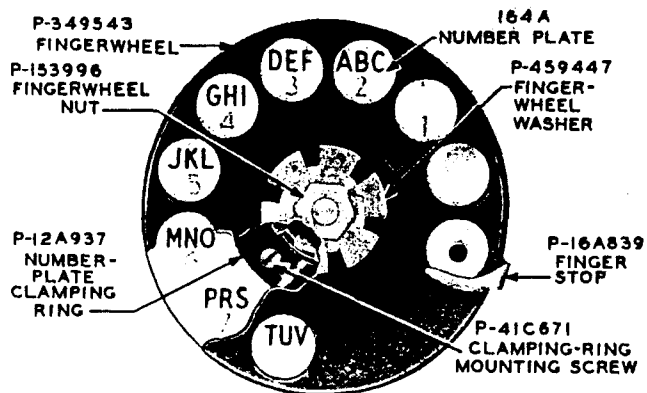


Fig. 5 — 6H Dial and P-18A974 Number Ring

4.00 6-Type Dials (Fig. 6).

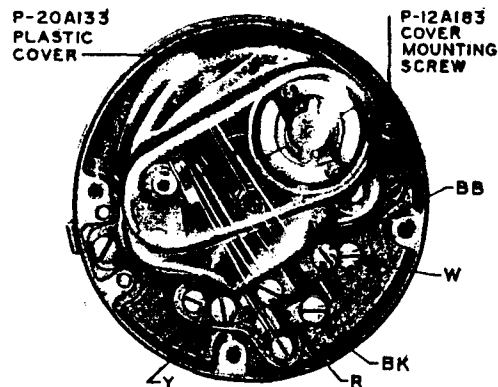
- Table C — assembly of parts
- Table D — use of dials
- Table E — 6-type dials for special uses



Front View

- Table F — assembly of parts for special 6-type dials




- Dial contact schematics (Fig. 7, 8, and 9).



Rear View

Fig. 6 — 6-Type Dial

TABLE C
ASSEMBLY OF PARTS FOR 6-TYPE DIALS

Dial Type	Number Plate	Clamp Plate	Clamping Ring	Fingerwheel	Fingerwheel Washer	Fingerwheel Nut
6A	164A		P-12A937 	P-349543	P-459447 	P-153996 
6C	164B					
6D	164A			P-19B776		
6E	164A					
6F	164A					
6G	164A					
6H	164C					
6J	164A					
6M	164D	P-19B776		P-19B524 (plastic)		
6N	164D			P-11E007 (plastic)		
6R	164A			P-349543		

Note: P-298106 card holder assembly is used with black metal fingerwheels.

TABLE D
USE OF 6-TYPE DIALS

Dial Type	Schematic Fig.	Pulses per Second	Number Plate	Use
6A	8	10	164A	Subscriber stations. Also part of 1011G hand set.
6C	8	10	164B	Coin collectors with a 158B number plate and a 63A dial adapter.
6D*	8	10	164A	Subscriber stations with colored sets.
6E	7	10	164A	PBX and central office switchboards for local and intertoll dialing.
6F	7	20	164A	PBX and central office switchboards arranged for high-speed dialing.
6G	8	20	164A	555-type switchboards.
6H	8	10	164C	5300-type sets in black.
6J*	9	10	164A	211P-3 and 211PR-3 hand telephone sets. 6J-41 used in 705A apparatus unit of SAGE system.
6M	8	10	164D	223- and 233-type coin collectors.
6N	8	10	164D	610-type telephone sets as part of 756 PBX equipment.
6R	8	10	164A	PBX systems and order turrets.

* Available in current colors; see section entitled Telephone Apparatus — Color.

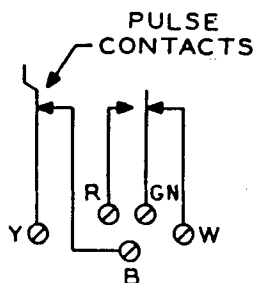


Fig. 7

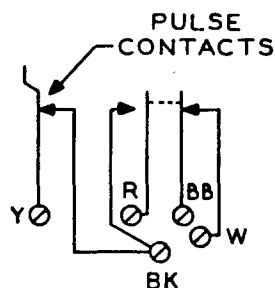


Fig. 8

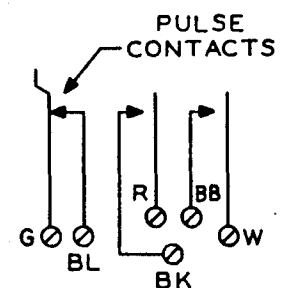





Fig. 9

Dial Contact Schematics

TABLE E
6-TYPE DIALS FOR SPECIAL USES

Dial Type	Color	Schematic Fig.	Pulses per Second	Number Plate	Use
6D-41	Gray	8	10	164A	751A apparatus unit.
6E-41	Gray	7	10	164A	520-type PBX, emergency reporting system.
6F-43	Gray-Beige	7	20	164A	608A PBX equipment.
6J-41	Gray	9	10	164A	750A apparatus unit.
6K-41	Gray	9	10	164B	112A key equipment at U. S. Air Force direction and combat centers of SAGE system.
6L-41	Gray	9	10	164D	600-type telephone set.
6P-43	Gray-Beige	7	10	164A	608A PBX equipment.
6P-45	Gray-Green	7	10	164A	JCSAN/COPAN networks at U. S. Air Force installations.

TABLE F
ASSEMBLY OF PARTS FOR SPECIAL 6-TYPE DIALS

Dial Type	Number Plate	Clamp Plate	Clamping Ring	Fingerwheel	Fingerwheel Washer	Fingerwheel Nut
6D-41	164A		P-12A937 	P-11C079	P-459447 	P-153996 
6E-41	164A	P-11E206		P-19B524		
6F-43						
6J-41	164A			P-11C079		
6K-41	164B					
6L-41	164D	P-19B776		P-11E007		
6P-43	164A	P-11E206		P-19B524		
6P-45						

Note: P-11E006 card support, P-10E071 card holder, and P-137593 window are used with 6J-41 and 6K-41 dials.

5.00 Number Plates for 5- and 6-Type Dials.

TABLE G
NUMBER PLATES FOR 5- AND 6-TYPE DIALS

Code	Numerals	Letters	Replaced by	Use
147A*	Black	Word "Operator" only	147B	56A dial adapter and 5-type dial on coin collectors. 147B is also used on 320- and 325-type sets.
147B	Red	Black	Standard	
147D	Black	Words "Long Distance" only	147B	
147E	Black	†	147B	5-type dial on station sets.
149A*	Black	Black	150A	
149B*	Red	Black	150B	
149D*	Black	Black	150D	
149E*	Black	†	150E	
149H*			150H	
150A*	Black	Black	164A	
150B*	Red			
150D*	Black			
150E	Black	†	164A	
150H*			164B	
158B	Red	Black	Standard	63A dial adapter and 6-type dial on coin collectors.
164A	Red	Black	Standard	5- and 6-type dials.
164B	‡	‡		
164C	§	§		
164D	‡	‡	Standard	6L-41 dial when used with 600-type telephone set.

* Manufacture Discontinued.

† For 4-party service. Word "Operator" is in black. Party line letters are in red.

‡ Numbers and letters omitted.

§ The 164C number plate is used with 5M or 6H dials associated with 5300-type sets.



Fig. 10 — Clamp Plates Mounted on Dials

6.00 PLASTIC FINGERWHEEL

- 6.01 Tables A and C show types of plastic fingerwheels used with 5- and 6-type dials.
- 6.02 Table H shows information pertaining to the plastic fingerwheel assemblies.
- 6.03 The P-19B524 fingerwheel is installed as follows:
1. With dial in normal position, place fingerwheel clamp on dial hub so that spring portion is near digit 9 on number plate, as shown in Fig. 10.
 2. Place fingerwheel washer and nut on hub and tighten (omit spring washer on 5-type dial).

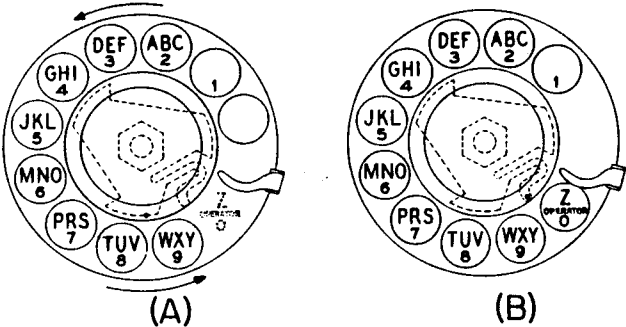


Fig. 11 — Placing Plastic Fingerwheels

TABLE H
PLASTIC FINGERWHEEL ASSEMBLY

Dial Type	Fingerwheel Assembly	Clamp Plate Assembly	Fingerwheel Clamp	Fingerwheel	Plastic Window	Card Support
5	P-43A212*		P-347999	P-19B524	P-137593	P-479182
6 and 7	P-43A342	P-13A106				

* A flat-type number plate clamping ring, P-298942, must be used.

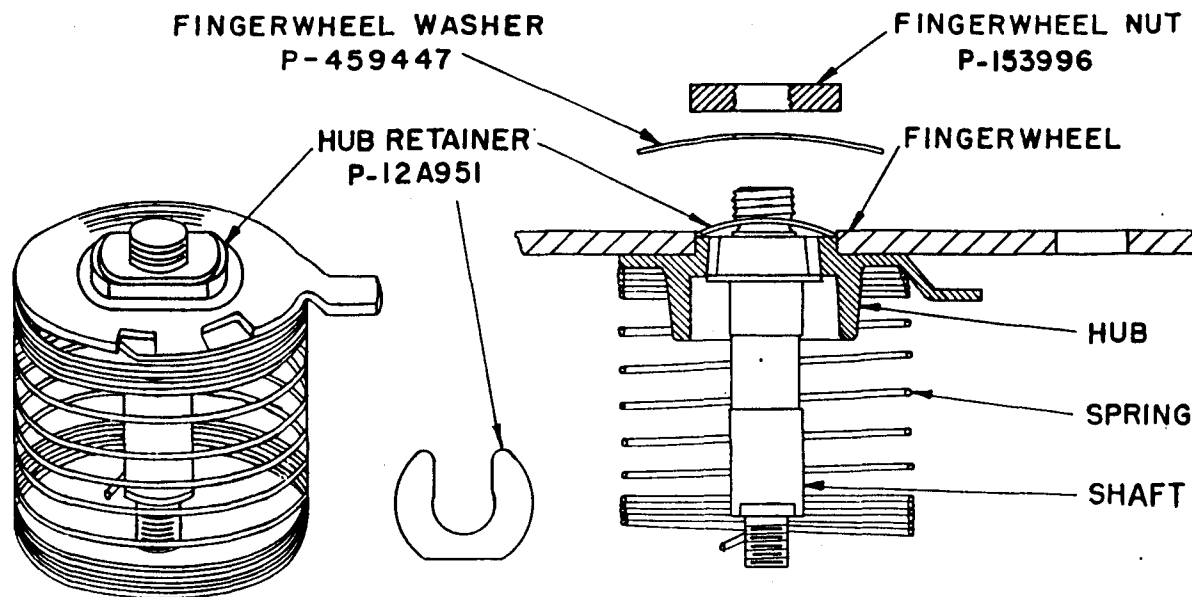


Fig. 12 — Dial Hub Retainer and Spring Washer

3. Place station number card in fingerwheel between window and card support.
4. Place fingerwheel over clamp with 0 hole directly on digit 9, making sure fingerwheel depressions are properly positioned on prongs of clamp plate, as shown in Fig. 11 (A).

5. Rotate fingerwheel in counterclockwise direction until clamp spring snaps into notch on underside of fingerwheel, as shown in Fig. 11 (B).



Fig. 13 — Removing Plastic Fingerwheel

6.04 The fingerwheel is removed as follows:

1. Rotate fingerwheel in clockwise direction as far as possible.
2. Insert KS-16750, List 1 releaser into small hole located in edge of raised center of fingerwheel, as shown in Fig. 13, and push down to disengage the fingerwheel clamp spring. Continue to rotate the fingerwheel in a clockwise direction.
3. When clamp spring releases, remove fingerwheel and dial will return to normal.

6.05 The P-11E007 fingerwheel is installed as noted in items 4 and 5 of 6.03.

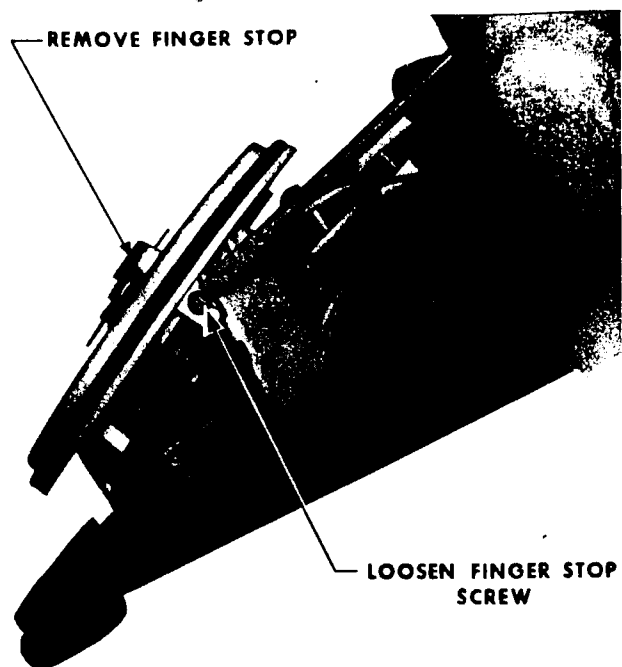


Fig. 14 — Removing Finger Stop

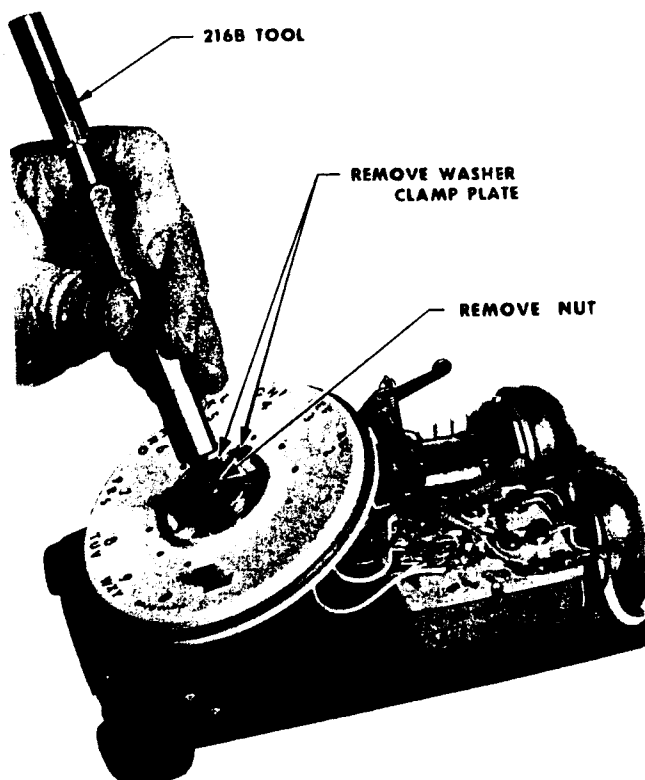


Fig. 15 — Removing Nut, Washer, and Clamp Plate

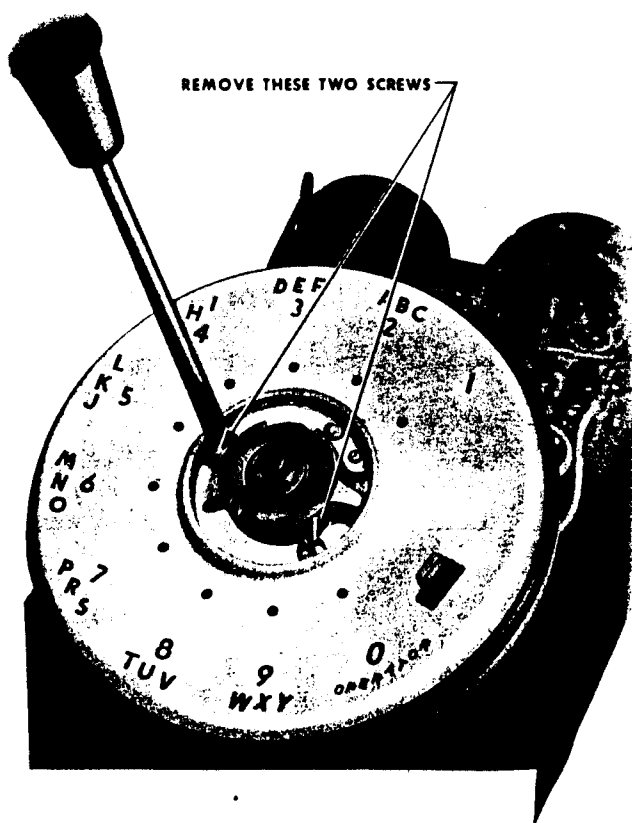


Fig. 16 — Removing RHMS Screws Holding Number Plate

7.00 6- AND 7-TYPE DIALS

7.01 Dials with black finished fingerwheel nut do not need hub retainer P-12A951; either these dials have been equipped with a retainer, or the hub has been staked.

7.02 If for any reason fingerwheel hex nut is removed on dials of earlier manufacture not equipped with a black finished fingerwheel nut, the motor spring and hub assembly may jump out of its proper position. This condition can be prevented by use of hub retainer P-12A951, as shown in Fig. 12. To assemble, hold fingerwheel down while nut and washer are removed, and insert hub retainer. Replace dial if motor spring and hub assembly jump out of place.

7.03 Number plate on 6-type dial is changed as follows:

- Remove card holder, fingerwheel nut, fingerwheel, and three exposed screws.

7.04 The 6P45 dial is the same as the 6-type dial except it is equipped with a plastic fingerwheel and a gray-green colored frame.

7.05 Number plate on 7-type dial is replaced as follows:

- Remove card holder frame, fingerwheel nut, washer, fingerwheel, finger stop, and P-174053 RHMS shoulder-type special screws.

7.06 To remove the number plate on the 7A-, C-, H-, J-, or K-type dial, follow the sequence in Fig. 13 through 17.

7.07 To replace the number plates on 7A-, C-, H-, J-, or K-type dials, reverse the sequence in Fig. 13 through 17. *Re use ring assembly from the previous number plate. (See Fig. 17.)*

7.08 The 7L3 dial is the same as the 7G3 dial except the number plate does not have letters and the operator designation. It has all numeral designations for all-number-calling application.

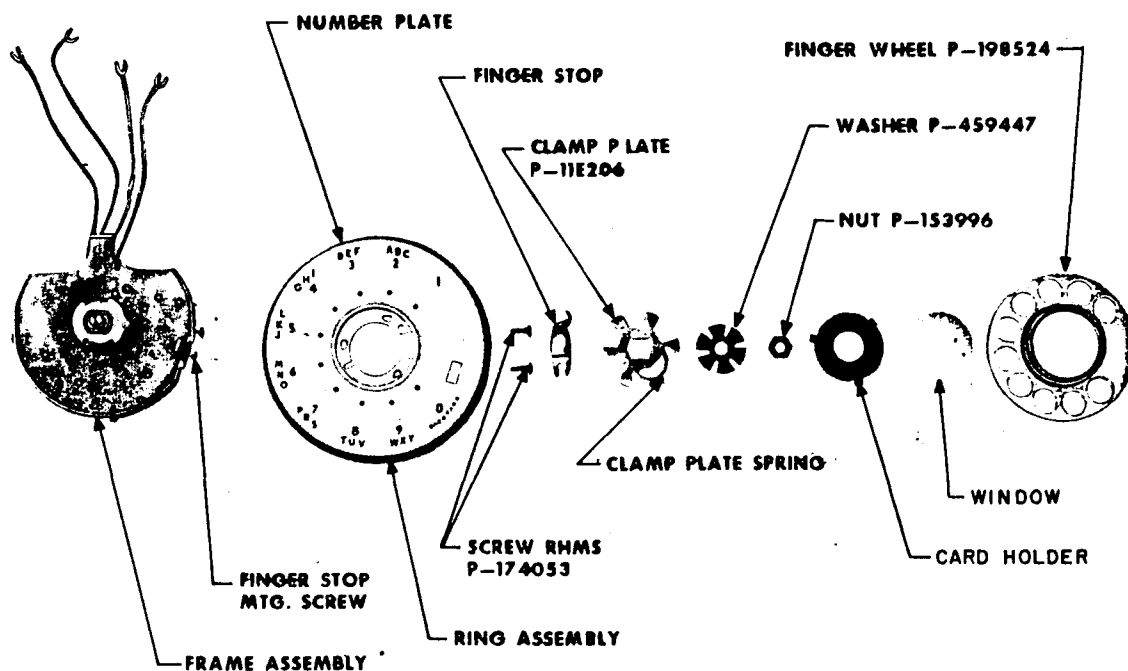
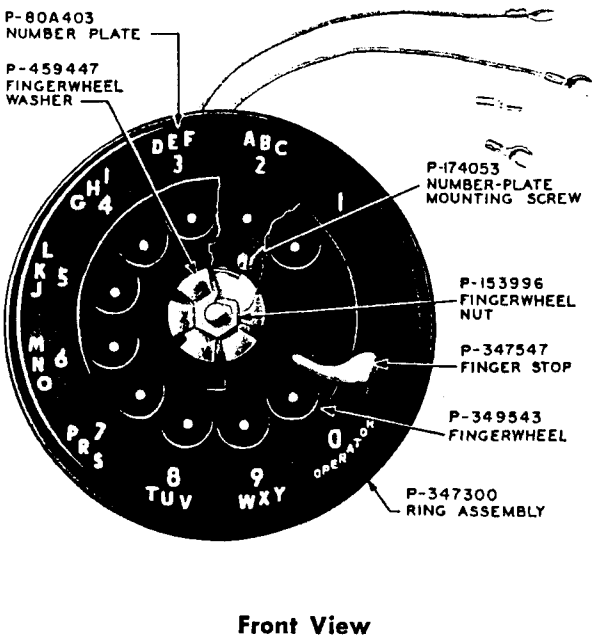


Fig. 17 - 7-Type Dial, Assembly of Parts

8.00 7-TYPE DIAL

71 7-Type Dials (Fig. 18)

• Table J — assembly of parts



• Table K — use of dials

• Dial contact schematics (Fig. 19, 20, and 21).

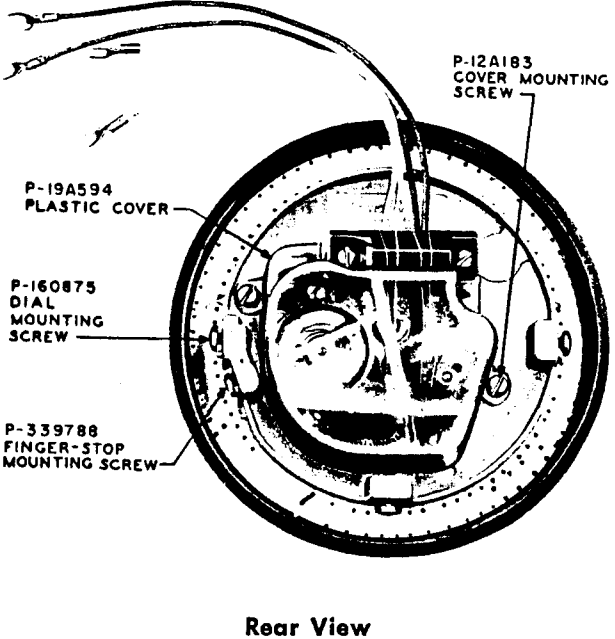


Fig. 18 — 7-Type Dial

TABLE J
ASSEMBLY OF PARTS FOR 7-TYPE DIALS

Dial Type	Number Plate	Clamp Plate	Fingerwheel	Fingerwheel Washer	Fingerwheel Nut
7A	P-349755	P-11E206	P-19B524	P-459447 ↓	P-153996 ↓
7C	P-80A4—*				
7D					
7E	P-80A4—*		P-349543		
7F	P-344918		P-344917		
7G	P-80A4—*		P-349543		
7H	P-80A4—*	P-11E206	P-19B524 P-349543		
7J	P-80A4—*	P-19B776			
7K	P-81H5—*	P-11E206			
7L	P-83A2—*				

* P-80A4 shall be completed with appropriate color suffix. For example: P-80A403 = black, P-80A450 = ivory, etc.

TABLE K
USE OF 7-TYPE DIALS

Dial Type	Schematic Fig.	Use
7A	19	General station. Designed for 3-post mounting.
7C*	19	General station. With colored sets or illuminated dial sets.
7D	19	Replaces 7A. Designed for 2-post mounting.
7E	21	Has two pairs off-normal contacts. Designed for speakerphone and 1A and 1A1 key systems.
7F	20	Has pulse contacts only. For Air Defense Warning System.
7G	21	Replaces 7E dial. Also used on 532-, 533-, 535-, and 536-type telephone sets.
7H*	21	Same as 7G. For use on colored sets.
7J*	21	Same as 7H.
7K	21	Modular telephone panels.
7L	21	691A-3 subscriber set. Data set 101A.

* Equipped with plastic fingerwheel. Available in standard colors; see section entitled Telephone Apparatus — Color.

9.00 8-TYPE DIAL

9.01 8-Type Dials (Fig. 20)

- Table L — number plate colors
- Table M — assembly of parts
- Table N — use of dials
- Dial contact schematics (Fig. 19, 20, and 21).

9.02 To replace fingerwheel, follow the procedure outlined in 6.04 and 6.05.

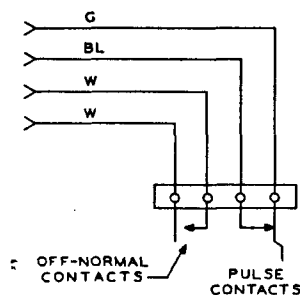


Fig. 19

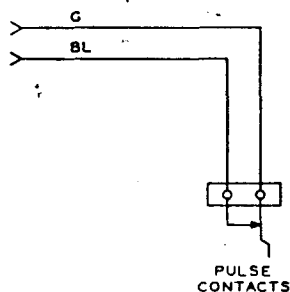


Fig. 20

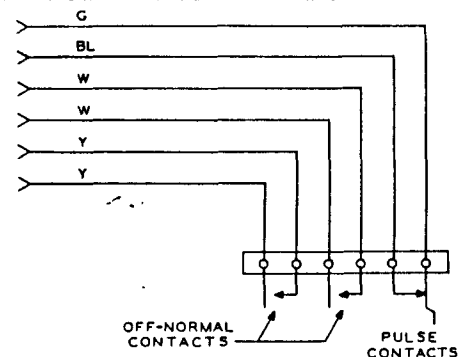


Fig. 21

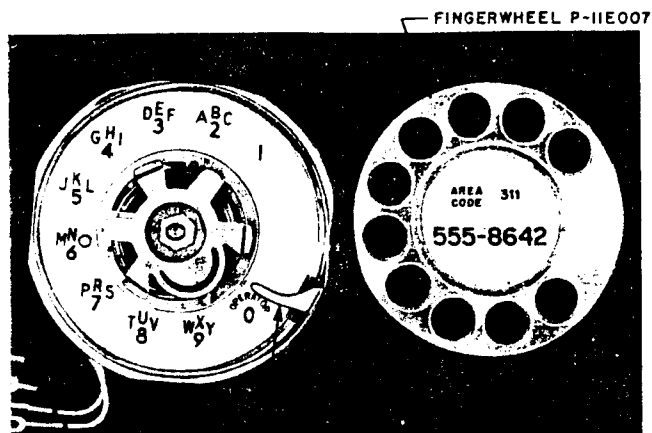
Dial Contact Schematics

9.03 Dial has a clear plastic number plate with brown letters and numbers on a white background.

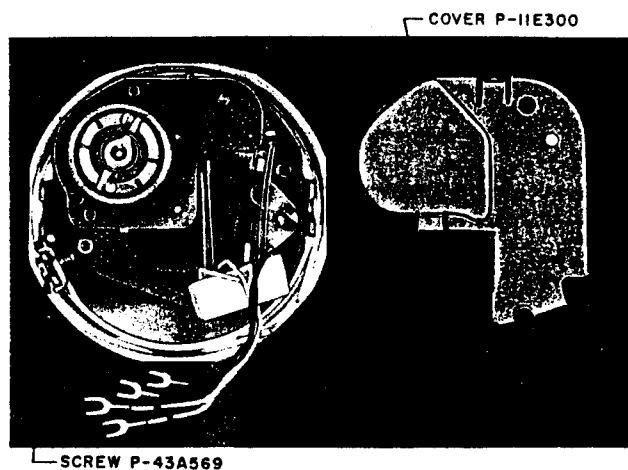
9.04 When dial number plate is worn or scratched to the point where replacement is indicated, it may be replaced in the following manner:

1. Remove plastic fingerwheel (see 6.04).
2. Remove lock ring by rotating ring counter-clockwise until it is free (Fig. 24). Then raise ring until it is just under fingerwheel hub and slide toward front of dial through openings at A and B (Fig. 25 and 26) until lower end of ring can be lifted over dial hub. Slide ring toward back of dial and remove.
3. Lift number plate off dial.
4. Before placing new number plate on the dial, wipe face of light shield clean.
5. Place new number plate and reassemble.

9.05 To change or replace number plate on the 8E dial, follow the same method as the rest of the 8-type dials (see 9.04). One additional part, the ring index, must be removed before the number plate can be removed. (See Fig. 23.) When changing from one color to another, the ring index must also be changed. See Table M for piece part information.



Front View



Rear View

Fig. 22 — 8-Type Dial

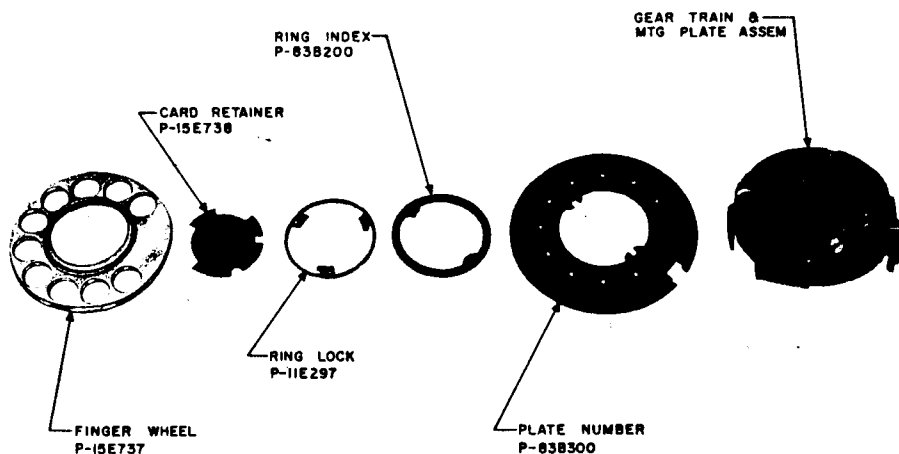


Fig. 23 — 8E Dial, Assembly of Parts

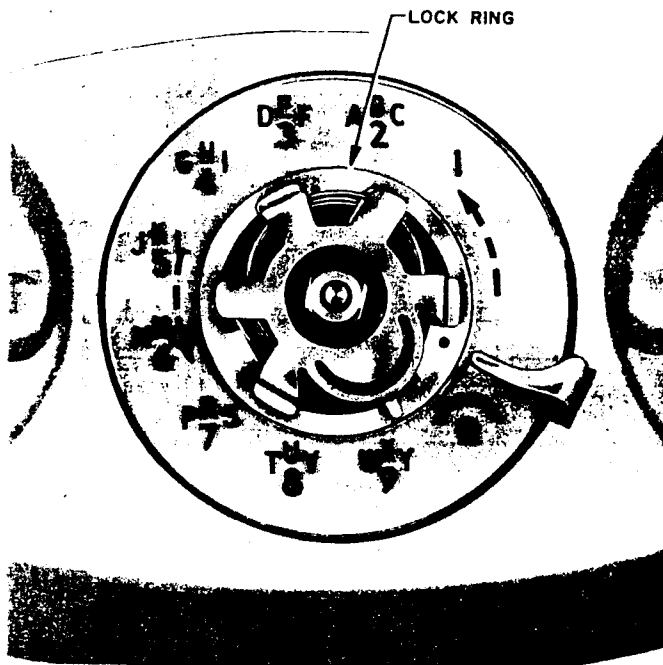


Fig. 24 — 8-Type Dial, Fingerwheel Removed to Show Lock Ring

9.06 The 8E dial is electrically and mechanically the same as the 8-type station dial except:

- New colored ceramic number plate with contrasting colored dots (Fig. 23)
- New design clear plastic fingerwheel having improved strength properties
- Ring index wheel
- Card retainer.

9.07 The dial is available in two colors. (See Table L.) To change or replace number plate on this dial follow the same method as the rest of the 8-type dials (see 9.04).

9.08 The 8F dial is the same as the 8A except for modification designed to meet the appearance requirement of the associated equipment. The digits and letters on this dial plate are gray.

9.09 See Table N for uses of the 8-type dial.

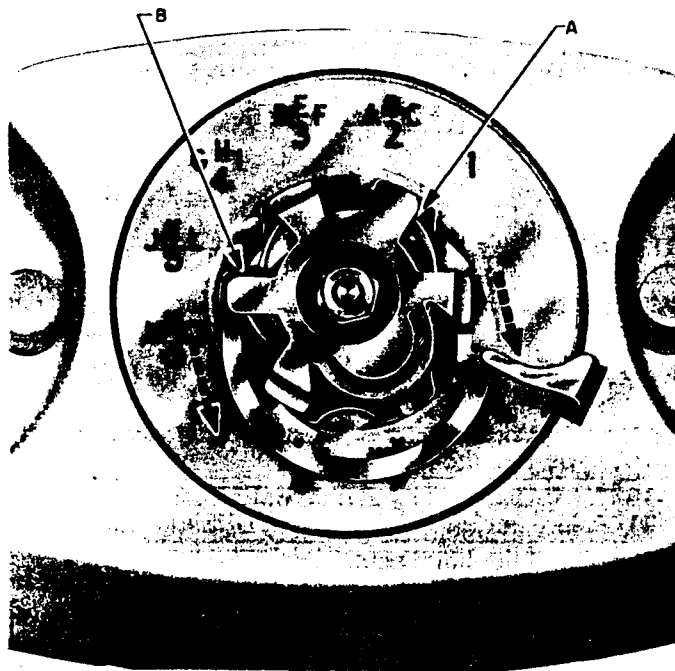


Fig. 25 — Lock Ring in Extreme Forward Position for Removal

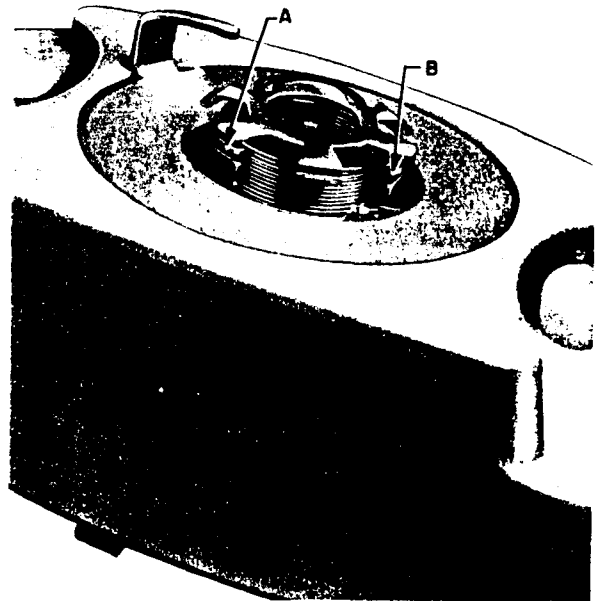


Fig. 26 — 8-Type Dial, Rear View, Showing Openings at A and B for Removal of Lock Ring

TABLE L
NUMBER PLATES FOR 8-TYPE DIALS

Number Plate	Background Color	Color of Numbers or Dots	Color of Letters	Used On
P-11E295	White	Brown	Brown	8A
P-81K100				8C
P-15E831	White	Gray	Gray	8F
P-83B352	Oxford Gray	White	—	8E
P-83B361	Light Gray	Oxford Gray		

TABLE M
ASSEMBLY OF PARTS FOR 8-TYPE DIALS

Dial Type	Number Plate	Ring Index	Fingerwheel	Fingerwheel Nut
8A	P-11E295		P-11E007	P-383454
8B				P-229167
8C	P-81K1—*			
8E	P-83B3—*	P-83B2—*	P-15E737	P-229167
8F	P-15E831		P-11E007	P-38345

* The last two digits of the piece part number shall correspond to the color suffix of the code in which it is used.

TABLE N
USE OF 8-TYPE DIALS

Dial Type	Schematic Fig.	Pulses per Second	Use
8A	19	10	701-type telephone set.
8B	21		102A equipment at FAA installations. 112A key equipment at NORAD installations.
8C	21		600-type telephone sets.
8E	19		1A1-, 1A2-, 1B1-, and 1B2-type coin telephone sets.
8F	19		11A and B apparatus units for series data sets 200, 400, and 600.