RELAYS
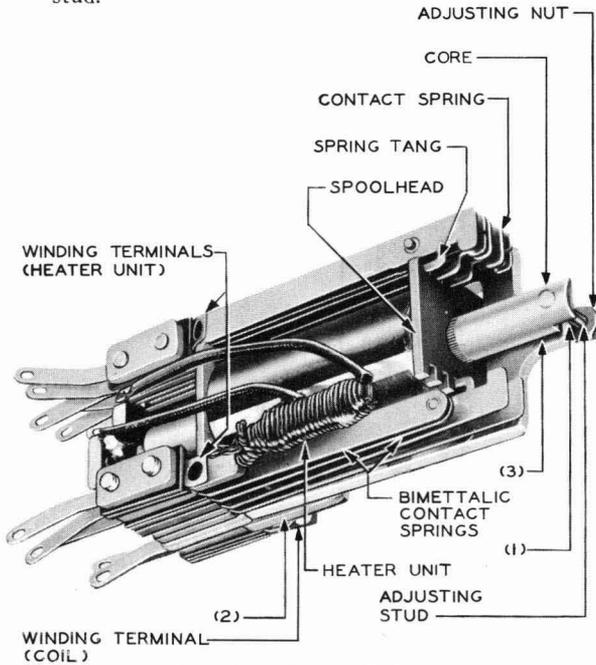## 271 AND 282 TYPES
REQUIREMENTS
(CONDENSED SECTION FOR 040-260-701)

1. REQUIREMENTS (ALSO SEE SECTION 020-012-711)

1.01 **Spring Tang Position:** Tang overlaps spoolhead; clears spoolhead when spring is moved.

1.02 **Armature Stud Clearance:** Fig. A (1)—Armature clears stud.

Fig. A—282-type Relay

1.03 **Armature Position:** Fig. A(2)—Both armature legs bear against hinge bracket with relay operated and after relay releases.

1.04 **Armature Travel:** Fig. A(3)—Meet requirements on circuit requirement table. Tolerance +0.003. No. 131A gauge.

1.05 **Spring Tension**
(a) As indicated in Fig. No. column in circuit requirement table. For figures specified in Fig. No. column, see page 2. No. 70D or 70H gauge.
(b) A in figures on page 2 means no definite tension.
(c) E spring adjacent to thermal unit winding tensioned against opposing E spring meet following requirements.

Relays Manufactured Prior to Second Quarter of 1955

	271 Type		282 Type
Test	No rq	Test	Min 20 Max 27
Readj	Min 25 Max 30	Readj	Min 21 Max 26

No. 70D or 70H gauge

Relays Manufactured During Second Quarter of 1955 and Subsequently

	271 Type		282 Type
Test	Min 20 Max 27	Test	Min 20 Max 27
Readj	Min 21 Max 26	Readj	Min 21 Max 26

No. 70D or 70H gauge.

(d) **Buffer Springs:** Spring designated X' associated with second designation F means that these springs are tensioned against spoolhead with 20 grams, max 125 grams (readjust 25, max 125). No. 70H or 70J gauge.

1.06 **Buffer Spring Position**
(a) **In Use—Readjust Only:** Relay electrically energized against 0.013-inch gauge. Perceptible stud gap at stud which operates buffer spring. No. 131A gauge.
(b) Relay electrically energized against 0.004-inch gauge (readjust 0.006 inch); no stud gap at stud which operates buffer spring. No. 131A gauge.
(c) **Not in Use:** Relay electrically operated; stud gap at stud which operates buffer spring.

1.07 **Armature Back Tension:** "A" springs tensioned against armature. Hold armature against adjusting nut with 18 grams (readjust 22). No. 70H or 70J gauge.

1.08 **Spring Stud Clearance:** Studs shall clear springs through which they pass.

1.09 **Bimetallic Contact Spring Clearance**
(a) Clearance between thermal unit winding and adjacent bimetallic spring.

Relays Manufactured Prior to Second Quarter of 1955

271 Type	282 Type
Min 0.040 in.	Min 0.062 in.

Relays Manufactured During Second Quarter of 1955 and Subsequently

271 Type	282 Type
Min 0.062 in.	Min 0.062 in.

(b) Clearance between edge of bimetallic spring and spoolhead min 0.016 in.

1.10 **Stud Gap:** (See Figs. on page 2)
(a) Stud gap designated T—0.006 inch—slight clearance with No. 133A gauge in place—relay normal.
(b) Stud gap designated S—slight clearance—relay normal.

1.11 **Contact Make** (U- and Y-type Relay Portions)
(a) Both contacts on bifurcated spring make with associated contacts in normal (break contacts) and operated (make contacts) positions.

(b) With relay energized against No. 131A gauge, make contacts meet conditions covered below.

	CONTACTS NOT MAKE (INCHES)		AT LEAST ONE PAIR OF CONTACTS MAKE (INCHES)
Test	0.018	Test	0.008
Readj	0.015	Readj	0.010

(c) **Readjust Only:** (Applies only after cleaning, build-up removal, or spring readjustment.) Normally open contacts—both contacts close with relay energized against 0.004 inch—No. 131A gauge. Normally closed contacts— both contacts break approximately simultaneously.

1.12 **Contact Separation:** (U- and Y-type Relay Portions) 0.005 inch—No. 131A gauge.

1.13 **Contact Sequence:** Break-make contacts—normally closed contacts break before normally open contacts make.
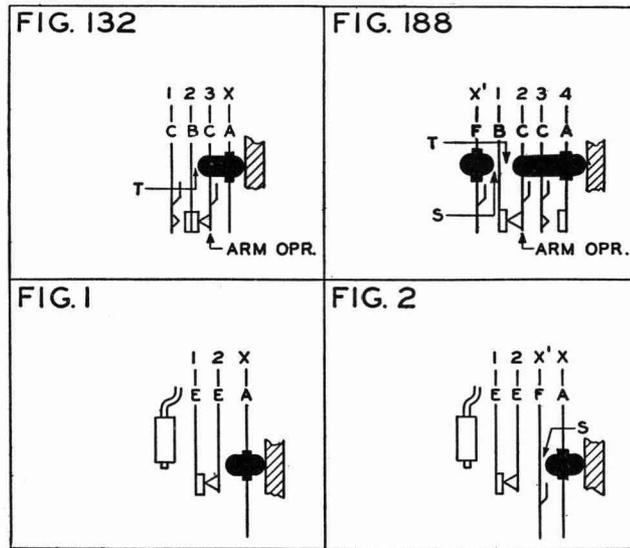
All Springs Except E Springs, in Spring Combinations Shown Above, Tensioned Toward Armature

Min Tension in Grams		H Cont Pressure
Test		**Readj**
A = –		– See Rq 1.05(b)
B = 18		20
C = 25		30
E = –		– See Rq 1.05(c)
F = –		– See Rq 1.05(d)
T — Stud Gap—See Rq 1.10(a)		
S — Stud Gap—See Rq 1.10(b)		
ϒ — Spoolhead Springs		
X — Balancing Spring		
X'— Buffer Spring		