Teletype Corporation
Chicago, Illinois, U.S.A.

DESCRIPTION AND ADJUSTMENTS, TELETYPE POLAR RELAYS RY20 (W.E. 215-A), RY28 (W.E. 215-H), AND RY30 (W.E. 255-A)

DESCRIPTION

	RY20 (215-A)	RY28 (215-H)	RY30 (255-A)
Number of windings	2	2	2
Resistance per winding, ohms	85	85	136
Signaling current, milliamperes	60	60	60) or (20
Biasing current, milliamperes	30	50	30) or (10
Contact Metals:		Extra Heavy	Extra Heavy
Armature	No. 4	No. 4	No. 4
		Extra Heavy	Extra Heavy
Contact screws	No. 4	Tungsten	Tungsten
For use with Teletype Apparatus:			
Equipped with radio filters		x	x
Not equipped with radio filters	x		
Mounts in 6827 (18-B) connecting block	x	x	x

The RY30 (255-A) relay is equipped with knurled tension knobs for increased convenience in adjusting the pole-piece screws.

Efficient operation of the RY20, the RY28 or the RY30 relay in printer circuits depends upon a periodical routine of inspection, cleaning, and adjustment. The adjustments are so interrelated that it is essential for each adjustment to be made in the given sequence. If any adjustment is changed, it will be necessary to check all subsequent adjustments.

NOTE: Before cleaning or making any adjustments, loosen both pole-piece screw lock nuts (knurled tension knob on RY30 relays) and back off both pole-piece screws as far as possible. Back off both contact screws.

ADJUSTMENTS (See Figure 1)

TO CLEAN RELAY AND COVER

Remove the relay cover and blow out any accumulated dust. Wipe the relay and the cover with a clean soft cloth.

TO CLEAN CONTACTS

Pits and build-ups on the contacts should be removed with a contact file. (Back out contact screws to permit entrance of contact file.) When cleaning the armature contacts, the armature should be supported at its midposition by the opposite contact screw, to avoid bending the armature or the contact springs. Care should be taken in filing the armature contacts to use light pressure. After using the file, blow out any loose particles and polish the contacts with a burnisher.

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TO REMOVE MAGNETIC PARTICLES FROM THE ARMATURE AND POLE-PIECE SCREWS

Any particles adhering to the armature or pole-piece screws should be removed by pressing a fresh piece of friction tape, wrapped aroung a piece of thin stiff nonmagnetic metel, against the particles. Do not rub the tape against the armature or pole-piece screws as this will leave a residue which will collect further particles.

POLE-PIECE SCREWS AND RELAY TERMINALS

Make sure that pole-piece screws and relay terminals are clean.

ARMATURE ADJUSTMENT

The armature should not touch the inside of the spool and the contacts should align so that the centers of the contacts will not be out of alignment by more than 25% of the contact diameter.

To adjust, loosen the screws holding the spool heads to the relay frame and position the spool to meet the first requirement. Tighten the screws. Loosen the armature clamping screws (Figure 1) and position the armature both vertically and horizontally to meet the latter requirement. Tighten the screws.

NOTE: If necessary, position the contact screw brackets by means of the enlarged mounting holes in the relay frame to aid in meeting the latter requirement.

*ARMATURE CONTACT SPRINGS ALIGNMENT

The armature contact springs should be parallel to the armature and the tips of the armature contact springs should rest against each other, approximately flat across their width, with a pressure of 20 to 50 grams measured on one spring at the contact with the other spring held so that it cannot follow its mate. If necessary, back off the contact screws. To adjust the tension of the armature contact spring, bend the spring toward or away from the other contact spring as required, and as close as practicable to the point where it is riveted to the armature. Reset the contact screws.

CONTACT SCREW ADJUSTMENT

The clearance between the armature in its normal unoperated position and either contact screw should be approximately equal and when the armature is held against one contact screw, there should be .003" to .005" clearance between the armature and the other contact screw.

To adjust, back off the pole-piece screws as far as possible and position the contact screws to meet this requirement.

NOTE: The contact screws should be sufficiently tight in their brackets to hold any adjusted position. If necessary, remove the contact screw from the bracket and force the two portions of the split end of the bracket closer together to meet this requirement.

* Indicates Addition

POLE-PIECE SCREWS ADJUSTMENT

REQUIREMENTS:

* (1) When the armature is held first against one contact screw and then against the other, the armature stop pins should not touch the pole-piece screws.

(2) The armature should be centered in the magnetic field between the pole-piece screws, i.e., the armature should either "float" in the gap between the contact screws, or, it should stay against either contact, with approximately the same pressure when moved there by hand.

PROCEDURE:

(1) Back off both pole-piece screws and check the contact screw adjustment. Readjust if necessary.

* (2) Advance the right pole-piece screw until, with its locknut tight (knurled tension knob on KY-0 relays), the right pole-piece screw pushes the armature far enough to just touch the left-hand contact screw. Back off the right pole-piece screw approximately 1/4 turn from this position until REQUIREMENT (1) is met. Tighten the locknut.

(3) Advance the left pole-piece screw until REQUIREMENT (2) is met. Tighten the locknut. If this disturbs the adjustment, reposition the left pole-piece screw and retighten the locknut to meet the requirement.

NOTE: When adjusting the pole-piece screws on KY-0 relays, the knurled tension nuts should be sufficiently tight to hold the pole-piece screws in the adjusted position.

WIRING DIAGRAM

Figure 1 shows the relay wiring.

* * *

* Indicates Change

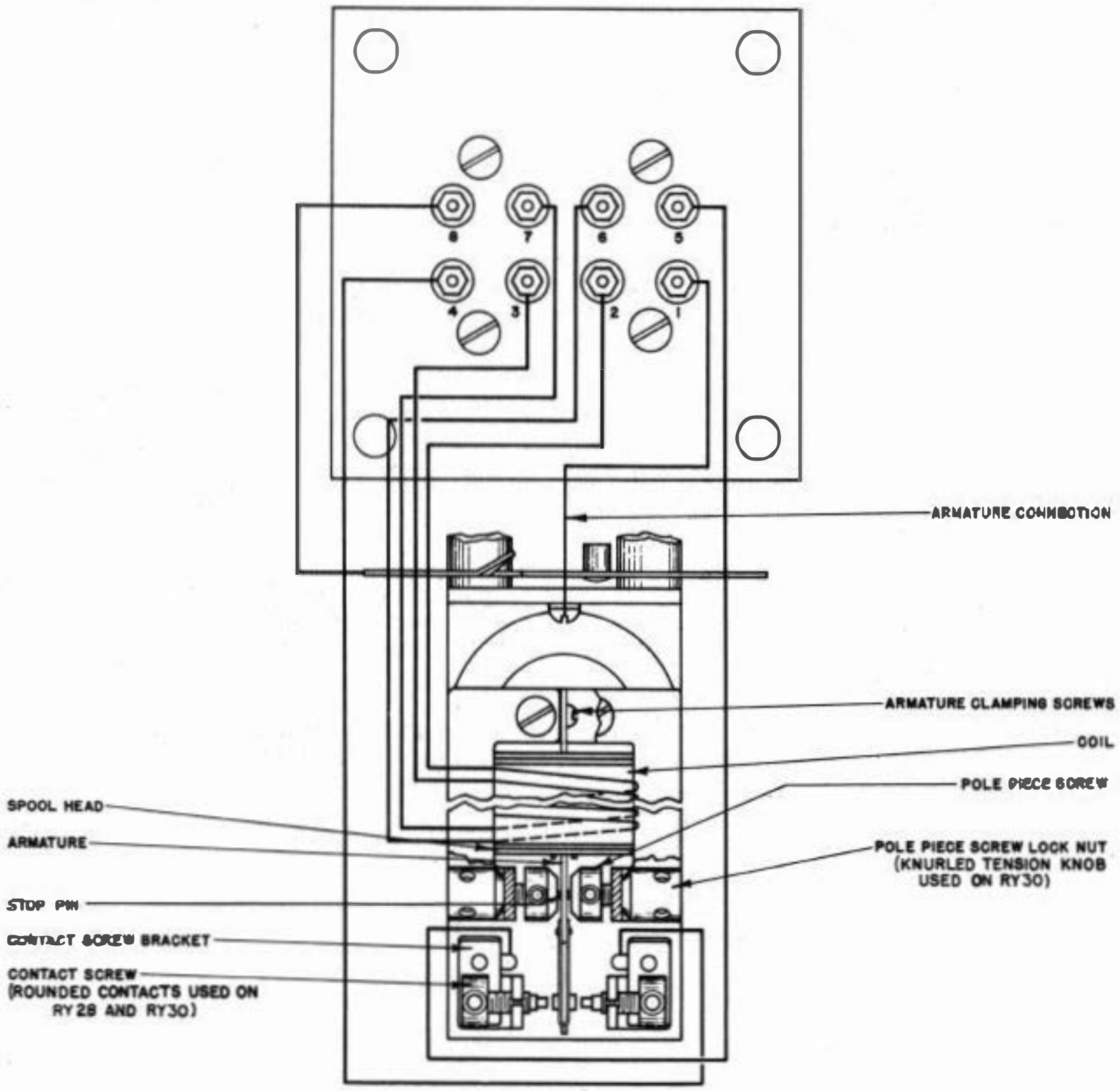
8
7
6
5
4
3
2
1
ARMATURE CONNECTION
ARMATURE CLAMPING SCREWS
COIL
POLE PIECE SCREW
POLE PIECE SCREW LOCK NUT
(KNURLED TENSION KNOB
USED ON RY30)
SPOOL HEAD
ARMATURE
STOP PIN
CONTACT SCREW BRACKET
CONTACT SCREW
(ROUNDED CONTACTS USED ON
RY28 AND RY30)

FIGURE 1