

CARE AND ADJUSTMENT OF TELETYPE POLAR RELAYS
RY-20 (W.E. 215-A), RY-28 (W.E. 215-H), and RY-30 (W.E. 255-A)

	<u>DESCRIPTION</u>		
	<u>RY-20</u> <u>(215-A)</u>	<u>RY-28</u> <u>(215-H)</u>	<u>RY-30</u> <u>(255-A)</u>
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	30	30) (10
Contact Metals:			
Armature	No. 4	No. 4	Extra Heavy No. 4
Contact screws	No. 4	Tungsten	Extra Heavy Tungsten
For use with Teletype apparatus:			
Equipped with radio filters		x	x
Not equipped with radio filters	x		
Finish of relay cover	Black	Black	Aluminum
Mounts in 6827 (18-B) connecting block	x	x	x

The RY-30 (255-A) relay is equipped with knurled tension knobs for increased convenience in adjusting the pole-piece screws.

*Efficient operation of the RY-20, the RY-28 or the RY-30 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 RY-30 relays) and back off both pole-piece screws as far as possible. Back off both contact screws.

CLEANING

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.

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 around a piece of thin stiff non-magnetic metal, 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.

*Indicates change.

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RELAY ADJUSTMENTS

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.

*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.

*Pole-Piece Screws Adjustment

Requirements:

1. When the armature is held against one pole-piece screw, the clearance between the armature and the other pole-piece screw should be .010" to .015".
2. The armature should be centered in the magnetic field between the pole-piece screws. That is, 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 RY-30 relays), the right pole-piece screw pushes the armature far enough to just touch the left-hand contact point. Back off the right pole-piece screw 1/4 turn from this position and tighten the lock nut.
3. Advance the left pole-piece screw until requirement 2, above, is met. Tighten the lock nut. If this disturbs the adjustment, reposition the left pole-piece screw and retighten the lock nut to meet the requirement.

NOTE: When adjusting the pole-piece screws on RY-30 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.

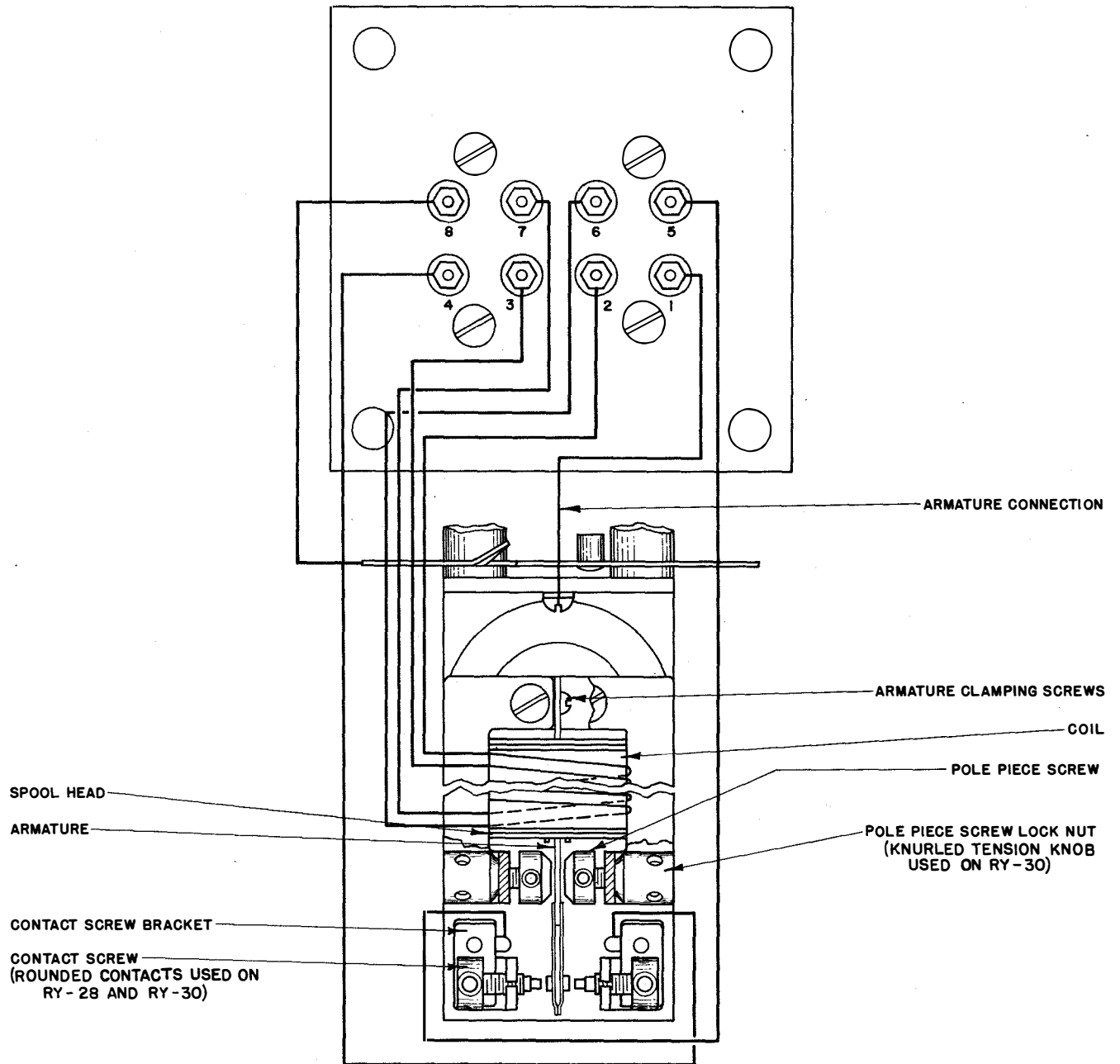


FIGURE 1