

SECTION VII

LANDING GEAR AND BRAKE SYSTEM

7-1. INTRODUCTION. This section contains instructions for troubleshooting, overhaul, inspection and adjustment of the landing gear, landing gear retraction system, and brake system. Also are adjustment for electrical safety and limit switches.

7-2. DESCRIPTION. The PA-30 tricycle landing gear system is an air-oil oleo type unit that is electrically operated, fully retractable with the nose gear retracting aft into the nose section and the main gear retracting inboard into the wing. Gear doors operate by gear movement completely covering the nose gear and partially covering the main gear when retracted.

The retraction mechanism consists of an electric motor and transmission assembly, torque tube assembly, push-pull cables to each main gear and a push-pull tube to the nose gear. Limit switches are installed in the system to cut off the transmission motor when the gear is fully extended or retracted. These switches also operate gear indicator lights in the cabin. To prevent the gear from retracting while the airplane is on the ground, an anti-retraction safety switch located on the left main gear will not allow the gear to retract until weight off the gear has allowed the strut to extend to within three-quarters of an inch of full extension. When the manifold pressure is reduced below 10 to 12 inches and the landing gear is not down and locked, a warning horn will sound. In the cockpit, located between the pilot seats, under the floor panel, is an extension handle used to manually extend the landing gear while in flight should it become necessary. Also, it may be used to extend and retract the gear on the ground while on jacks.

The brakes are hydraulically actuated by individual master cylinders mounted on the left (optional on the right) set of rudder pedals. A reservoir located on the front side of the forward cabin bulkhead supplies hydraulic fluid to each master cylinder. From the cylinders the fluid is routed through lines and hoses to the brake assemblies on each main landing gear. The brakes are self-adjusting, single disc, single housing, double piston assemblies. To operate the brakes, apply toe pressure to the top of the brake pedals. The parking brake may be actuated by applying the brakes and pulling out the parking brake handle. To release the parking brake, depress the brake pedals and push in on the parking brake handle.

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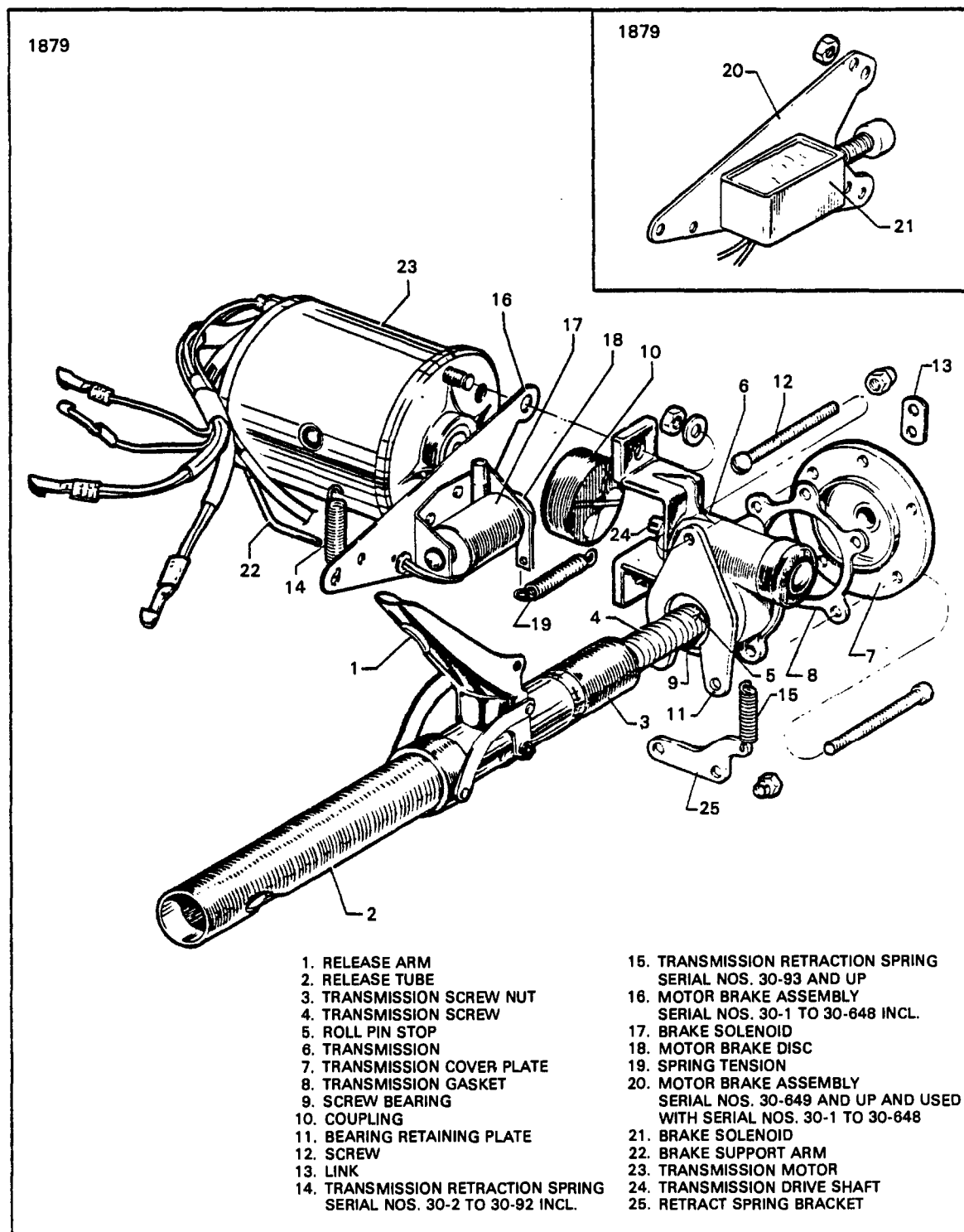


Figure 7-13. Landing Gear Retraction Transmission Assembly

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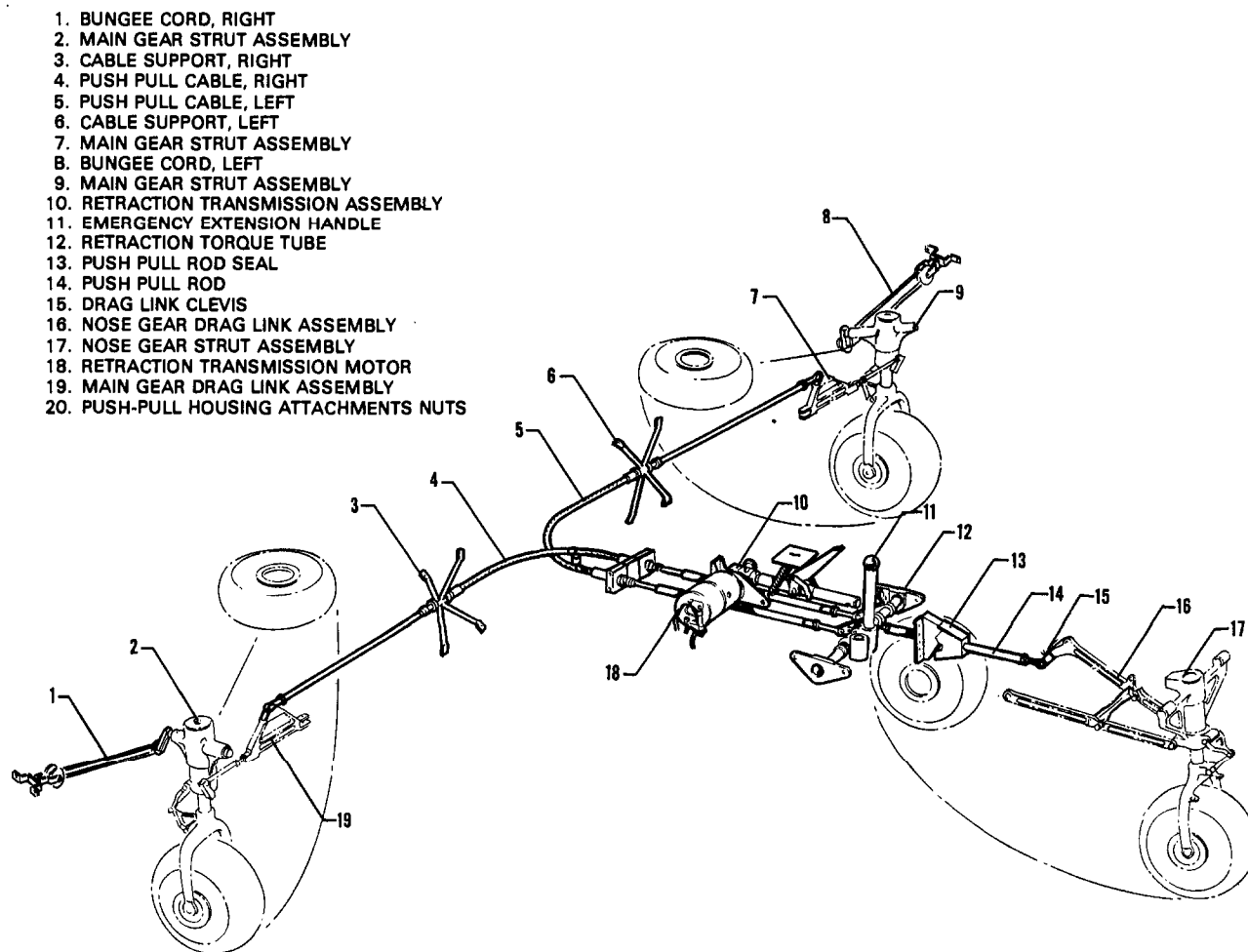


Figure 7-12. Landing Gear Retraction System