

Fig. 1. Sony APR-5003V, 2-channel analog recorder.



Fig. 2. Sony APR-5003V.



Fig. 3. Tape path as a whole, with the tape moving left to right across the head assembly. Tape speeds are from 4.76 – 76 cm/sec (1.875 – 30 ips), and the largest of the four rollers is only 4.5 cm in diameter, so the rpm are fairly slow. At back left is the first roller, the "S-Roller."



Fig. 4. S-roller. The S-roller is a metal roller and after removing a cup and a cap (shown sitting on a white 4x6 card in the photo below), you can see that it rotates around a 6 mm shaft on two flanged NSK 686Z bearings.



Fig. 5. S-roller interior with upper bearing removed; inner surface of lower 686Z visible. Upper and lower surfaces of the S-roller are identical, with the flange facing out on both.



Fig. 6. S-roller interior with upper bearing removed, inner surface of lower 686Z visible.



Fig. 7. S-roller, upper 686Z bearing detail.



Fig. 8. Timer roller. The Timer roller is a rubber roller covered with a cup and a cap (here removed), which rotates around a 6 mm shaft with two shielded 686Z bearings. Unlike the S-roller, the timer roller bearings are not user replaceable.





Fig. 9. Timer roller removed from recorder, upper surface.



Fig. 10. Timer roller, lower surface.



Fig. 11. Timer roller, NSK 686Z bearing detail.



Fig. 12. Pinch roller, T-roller. The pinch roller is a 4.5 cm diameter rubber roller that holds the tape firmly against the white rotating ceramic capstan. The capstan is the element that actually pulls the magnetic tape across the recorder heads. Immediately to the right of the pinch roller is the small-diameter T-roller. Both rollers are normally covered with screw-on cups and caps (changing the orientation of the cups allow the machine to be converted to 1/2" wide tape from its usual 1/4" format).



Fig. 13. Pinch roller and T-roller with covers removed.



Fig. 14. Pinch roller and T-roller disassembled and removed from shafts. The pinch roller rotates on a 6 mm shaft, the T-roller on a 5 mm shaft.



Fig. 15. Pinch roller, upper surface detail: bearing NMB 696ZZ, R-1560ZZ.



Fig. 16. T-roller, upper surface, detail, no model marking.





Fig. 17. T-roller bearings removed from T-roller. Bore diameter 5.0 mm, outer ring diameter: 9.0 mm, outer diameter of flange: 10.8 mm, height: 3.0 mm

