New Structural Design of SCDTL Structures for the TOP Linac, G. MESSINA, A. MOLA, L. PICARDI, C. RONSIVALLE, A. VIGNATI, ENEA; S. FRULLANI, ISS - A new structural design of the 3 GHz SCDTL cavities of the TOP Linac has been developed to solve thermal dissipation and mechanical stability problems affecting the previous version. Indeed although the duty factor is not higher than conventional copper coupled-cavity structures, the very small (1.2 cm diameter) drift tubes and stems inside a tank have to be carefully cooled in order to avoid mechanical distortions that could affect resonant frequency and field distribution. A higher coupling coefficient has been also obtained. The paper describes the last fabrication scheme design of the structure and the results of prototype tests.