The formation and evolution of S0 galaxies is examined using GMOS-N and GMOS-S longslit spectroscopy of 18 edge-on S0 galaxies. The galaxies are all found to display significant stellar discs with regular disc kinematics. Ionised gas emission is observed at a low level in 72% of the sample. The kinematic data have been used to produce a B-band Tully-Fisher (TF) relation for S0 galaxies,which has larger scatter and is offset by ~1.7 mag compared to the TF relation for local spirals. This observation is consistent with that expected if S0 galaxies form through the truncation of star formation in normal spiral galaxies. The offset from the spiral TF relation for each galaxy is shown to correlate well with both disc and central age, in the correct sense, and with the correct magnitude such that the large observed scatter in the S0 TF relation can be explained as being due to the different times at which the progenitor spirals ceased forming stars.