

The invention relates to a welding unit (1) for welding two rails (2) of a track, comprising two rail clamping units (5) which are movable relative to each other in a longitudinal direction (4) of the unit. A bus bar (10) which is provided for power transmission is designed as a unit guide (3) which connects both rail clamping units (5) to one another, is spaced apart from displacement drives (11) and extends in a longitudinal direction (4) of the unit. The bus bar (10) is provided with a cooling device and is displaceable in the longitudinal direction (4) of the unit relative to the rail clamping unit (5) which is equipped with the bus bar contacts (8).