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Initial Operation of Pulsed Ion Beam system for NBI of All Japan ST Program NOBORU YAMAGUCHI, HIROTAKA KAJIYA, NAOKI TAKAHASI, TOMOHIKO ASAI, TSUTOMU TAKAHASI, Nihon univ., HEIZOU IMANAKA, MASAKATSU MINAMI, YASUSI ONO, YUICHI TAKASE, Univ. Tokyo, KOUNOSUKE SATO, Kyushu Univ., NIHON UNIV. TEAM, UNIV. TOKYO TEAM, KYUSHU UNIV. TEAM — The UTST experiment at Univ. Tokyo is expected to produce ultra high-beta Spherical Tokamak (ST) using mega-watt heating power of ST merging/reconnection. A key issue after the formation is to maintain the produced ultra-high-beta ST over 100 Alfvén times for its stability research. The following three heating methods has been arranged for the sustainment experiment: (1) advanced RF heating method developed in TST-2, (2) low-cost pulsed neutral beam injection (NBI) system under development and (3) intermittent merging/ reconnection by TS-3 and 4. The NBI system for UTST was designed to realize (1) low voltage (15kV for low-field side of a ST) and high current (20A), (2) maintenance-free, (3) low-cost A SUS washer gun has been employed for the first time to realize the maintenance-free plasma (ion) source, in sharp contrast with the conventional filament type plasma source. In the initial operation of plasma source, the electron and ion density profile suitable for the ion beam extraction had been observed. Now evaluation of characteristics of the extracted plasma has been performed. Further results of the developed NBI will be presented

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