

LATERAL STRESS RELIEF MECHANISM FOR VACUUM BELLOWS

Abstract

An improved bellows assembly (18) is provided for use in, for example, an ion implanter (10). The bellows assembly comprises a first mounting portion (56) located at one end of the bellows assembly for fixedly mounting the bellows assembly to a first vacuum chamber (16); a second mounting portion (52) located at an opposite end of the bellows assembly for slidably mounting the bellows assembly to a second vacuum chamber (15); and a steel bellows (54) located between the first and second mounting portions. The bellows extends generally along a longitudinal axis (64) and is expandible and contractible along this axis. The second mounting portion permits radial slidable movement of the bellows assembly with respect to the second chamber in a first plane substantially perpendicular to this axis. The second mounting portion comprises at least one sliding seal subassembly (80) for maintaining the vacuum, and a support ring (78) and a slide plate (82) located on opposite ends of the sliding seal subassembly. The slide plate and the sliding seal subassembly provide a slidable vacuum-tight mating surface therebetween.

Figure 1