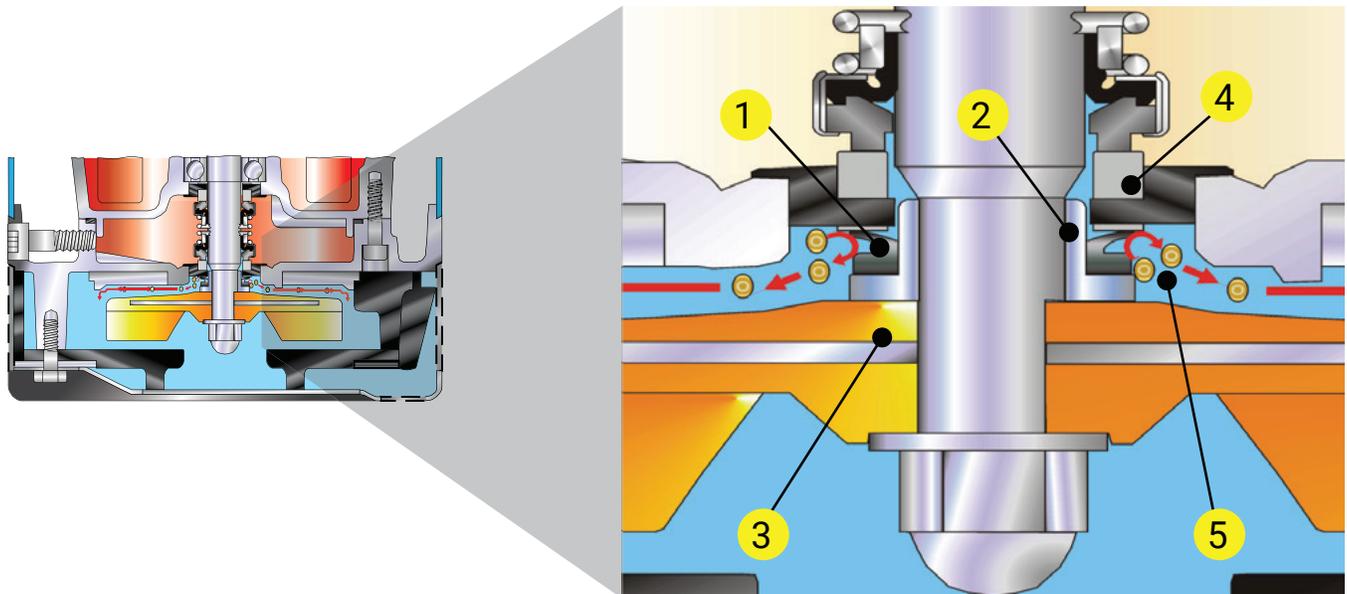


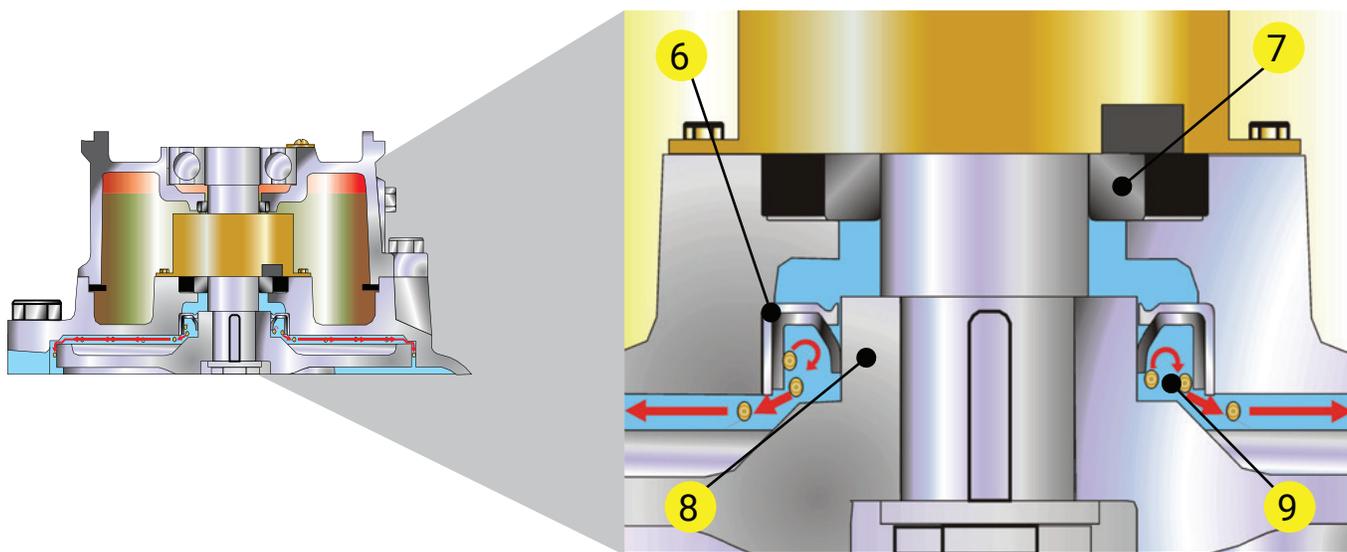
**MECHANICAL SEAL PROTECTION DEVICES**

In addition to supplying the most durable mechanical seals, Tsurumi incorporates two different seal protection devices to prevent abrasive particles from entering into the area of the bottom seal faces.

**"V" RING** , This design consists of a special "V" Ring **1** stainless steel shaft sleeve **2** . The "V" Ring rotates with the shaft sleeve and the impeller and the impeller **3** . The upper lip of the "V" Ring runs against the bottom surface of the bottomseal face **4** . The design of the "V" Ring is such, that as it rotates, abrasive particles are expelled back into the flow and away from the seal faces **5** .



**LIP SEAL**, This design consists of one or more lip seals **6** , mounted in a chamber below the bottom seal faces **7** . The lip seal is stationary. The impeller hub **8** rotates against the flexible lip of the lip seal. The design is such, that abrasive particles are expelled back into the flow and away from the seal faces **9** . Large sewage and wastewater pumps incorporate a shaft sleeve that rotates against the lip seals.



**Note:** Please check the individual product bulletin for the design incorporated in each series.