

55 Series Model Specification

The pump shall be an ITT Jabsco 55 Series rotary positive-displacement lobe-type pump.

The pump shall be capable of delivering _____ litres/minute [_____ US gpm] of liquid viscosity _____ cP against a differential pressure of _____ bar [_____ psi]. at a speed of _____ rpm +/- _____ %. The absorbed power shall be _____ watts [_____ hp] and the Nett Inlet Pressure Required by the pump is _____ bar abs [_____ psi abs].

All metal pump head parts in contact with the pumped fluid shall be manufactured from austenitic stainless steel grade AISI 316L or equivalent and all product contact surfaces shall be finished to [0.8µ/0.8µ and electropolished/0.5µ and electropolished](#). Elastomer seals in product contact shall be moulded from: [sulphur-cured EPDM conforming to US FDA CFR 21 section 177.2600/Viton/Virgin PTFE or Perfluoroelastomer](#).

The design of the primary shaft seals shall be such that the pumped fluid shall only contact the outside diameters of the seal faces. The seal area shall be free from crevices liable to harbour micro-organisms and shall allow liquid to freely drain. Product contact faces shall be made from Silicon Carbide running on [Carbon/Silicon Carbide](#) conforming to US FDA requirements and shall be accessible without removing the rotor case from the pump. The rotating faces shall be fitted directly into the backs of the rotors and the elastomeric joints shall be of the moulded gasket type sealing on square edges.

The pump end-cover shall be sealed to the rotor case by a [moulded elastomeric/machined PTFE](#) joint ring of the gasket type. This shall seal on square edges and be fitted in a groove designed to avoid crevices, control the compression of the joint and prevent extrusion, expansion or creep under vacuum into the pump chamber. The shape of the inside edge of the joint when fitted shall exactly follow the inside shape of the pump chamber so there are no areas of metal to metal contact inside the sealed perimeter.

There shall be no other joints, seals, elastomeric parts, tubes, diaphragms or other non-metallic parts in contact with the pumped fluid.

The rotors shall be of the [5-lobe/scimitar](#) type designed to minimise shear of liquid of all viscosities and shall not contact each other or the pump rotor case up to their design limits of pressure and temperature. They shall be secured by retainers completely external to the pump chamber to avoid crevices and eliminate risk of scratching during maintenance. The portion of each pump shaft supporting the rotors shall be fitted with a non-metallic bush to eliminate fretting ensuring the rotors can be easily removed. Each rotor shall be driven by a single key to provide precise drive and alignment and prevent incorrect assembly.

The pump rotor case shall have an internal shape which allows liquid to freely drain and gases to vent through the port connections.

The pump bearing housing shall be manufactured from: [cast iron coated with high-gloss epoxy-polyester coating applied by an electro-static powder process and firmly adhered to all external surfaces/AISI grade 304 or better stainless steel machined on all external surfaces](#). The external shape shall prevent the collection of pools of wash-down liquid. A guard shall be provided to prevent access to rotating parts during operation.

The hygiene capabilities of the pump shall be demonstrated by successful testing to the following protocols set by the European Hygienic Equipment Design Group (EHEDG).

A method for the assessment of in-place cleanability of food processing equipment

A method for the assessment of in-line steam sterilizability of food processing equipment

A method for the assessment of bacteria-tightness of food processing equipment

Tests shall have been carried out by an independent nationally-recognised testing authority and a written certificate issued. Zero detectable contamination shall have been achieved in every test (exceeding the EHEDG requirements which allow up to 30% contaminated surface area).

[The pump shall \(optionally\) be supplied with a secondary joint on the end cover allowing a barrier of eg steam or condensate to be provided.](#)

[The pump shall \(optionally\) be supplied with secondary shaft seals allowing a barrier of eg steam or condensate to be provided.](#)