

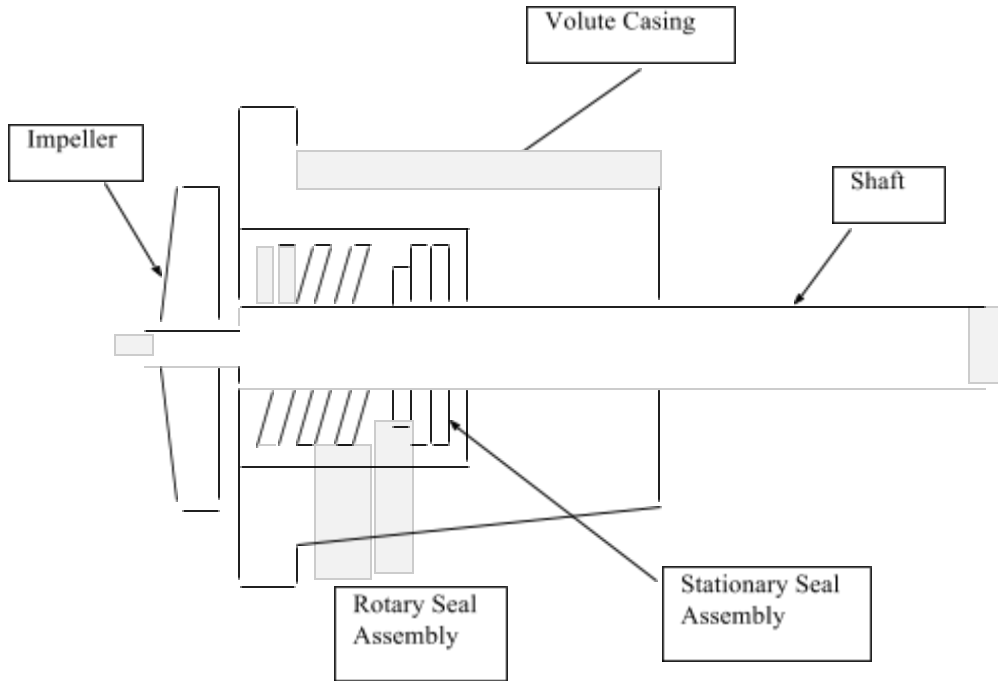
MAINTENANCE MANUAL

Proper Installation, Operation and Assembly of Camac Stainless Steel and Steel Pumps

- Pump Location:** This pump is horizontal centrifugal. Good practice dictates that the pump should be located as far below liquid level in tank as possible. This supplies liquid to the pump suction under positive pressure.
- Connections:** Before running any centrifugal pump it must be primed. A direct full size outlet from the tank to the pump suction is much better than bringing suction supply over the top of the tank. Where this cannot be arranged, the best alternative is to use a one-piece wire reinforced hose looping from pump suction over tank rim without any fittings. Joints or connections in the suction line should be checked for tightness regularly because if ever a minute air leak develops in an elevated suction line, prime is lost and the pump will run dry. Any centrifugal pump is damaged by running dry. Suction line should be at least as large as suction nozzle on pump and as short and straight as possible. Pumps will hold air. In some instances an air lock can occur. Typically a device in line (suction or discharge) will prevent liquid from flooding into a pump. Care must be taken to bleed all air from pumping systems prior to running. Air causes catastrophic failures. Use air release vacuum breakers whenever air in system can occur.
- Operation:** Camac pumps are provided with a stuffing box or mechanical seal of improved design. The stuffing box has four (4) molded rings of packing with a lantern ring in the middle. Leakage through the stuffing box can be eliminated if cooling water is run through the seal. Tapped connections are provided for this. Very little water is required to cool the seal in this manner. A tapped outlet for this water is provided which can be piped to a drain. The mechanical seal is standard with a stainless steel spring, carbon and ceramic faces with viton elastomers. If shaft is grooved and worn, it means that abrasive materials are present in the solution. No seal or stuffing box will operate satisfactorily in abrasive solutions. This condition can be overcome by cleaning solution.
- Coupling connections** between pumps and motors must be perfectly aligned. Alignment is perfect when we ship but can be knocked out by rough handling in shipment or installation. After pump is installed, check this alignment with a straight edge held across both halves of coupling or a dial indicator. Perfect alignment can be restored by loosening bolts holding motor and pump to base, aligning both and retightening bolts. If pump is noisy, it is usually caused by misalignment. Camac pumps properly adjusted should run quietly.
- Repair and replacement parts** are available for immediate shipment from stock maintained in our shop. Camac equipment is guaranteed free from defects and to perform in accordance with our stated claims. We limit our liability to no charge replacement of defective parts only.
- Important:** *The function of packing is to control leakage and not to eliminate it completely.* The packing must be lubricated, and a flow from 40 to 60 drops per minute out of the stuffing box must be maintained for proper lubrication. The method of lubricating the packing depends on the nature of the liquid being pumped as well as on the pressure in the stuffing box. When the pump stuffing box pressure is above atmospheric pressure and the liquid is clean and nonabrasive, the pumped liquid itself will lubricate the packing. When the stuffing box pressure is below atmospheric pressure, a lantern ring is employed and lubrication is injected into the stuffing box. A bypass line from the pump discharge to the lantern ring connection is normally used providing the pump liquid is clean.

CAMAC RELIEVED SEAL DESIGNS ELIMINATE LEAKAGE

Mechanical Seal



Stuffing Box

