



DUAL PLATE CHECK VALVE

PISTON (STATIONARY)

PISTON SEAL ASSY.

HOLLOW PISTON ROD (STATIONARY)

PORTS IN PISTON ROD

These ports in the piston rod allow flow from the pump chamber into the piston rod.

PUMP CYLINDER

Pumping occurs when the bouyant wing lifts the pump cylinder by pulling up on the tie-rods attached to the pump base.

ELASTOMERIC ROD CLADDING

HYDRAULIC CUSHION SLEEVE

Use of the hydraulic cushion alleviates the “end stop problem”. When waves are encountered with heights greater than the pump stroke the pump base moves up and contacts the hydraulic cushion sleeve driving it up progressively covering the ports in the pump rod.

This action throttles the flow out of the pump chamber into the bore of the piston rod that increases pressure in the pump chamber.

This increase in pump chamber pressure decelerates upward motion of the buoyant wing and pump cylinder sufficiently that contact can be made between the sleeve and piston without damage.

After contact with the piston all tension loads are transmitted through metal to metal contact of system components down to the anchor.

PUMP TIE-RODS

PUMP BASE