Claims

1. An apparatus for a marine vessel comprising:

an impeller section, the impeller section having a first hub portion and a plurality of impeller blades, each of the plurality of impeller blades being removably fixed along an outwardly tapered convex surface of the first hub portion.

2. The apparatus for a marine vessel of Claim 1 wherein the outwardly tapered convex surface of the first hub portion includes a blade retainer for affixing the impeller blades to the first hub portion.

3. The apparatus for a marine vessel of Claim 1 wherein the impeller blades include a convex outer surface, a concave inner surface, a short trailing edge, a long leading edge and broad surface sides having a midpoint and a thickness allowing for maximum exposure to a passing fluid.

4. The apparatus for a marine vessel of Claim 1 further comprising:

diffuser/confuser blades; and

a blade width extension, the blade width extension extending the impeller blades beyond a required pitch thereby enhancing a pitch effect of the impeller blades while stabilizing a flow off a back of the impeller blades in preparation for pick-up by leading edges of diffuser/confuser blades, the diffuser/confuser blades designed to receive a flow at varying accelerated velocities off the blade width extension.

5. The apparatus for a marine vessel of Claim 1 further comprising:

a diffusor/confusor section, the diffusor/confusor section having a second hub portion and a plurality of diffusor vanes, each of the plurality of diffusor vanes being removably fixed to a contoured surface of the second hub portion.

6. An apparatus for a marine vessel comprising:

an impeller section, the impeller section having a hub portion, a plurality of impeller blades and a blade width extension, the blade width extension extending the impeller blades beyond a required pitch thereby enhancing a pitch effect of the impeller blades, the blade width extension stabilizing a through flow off a back of the blade width extension to enhance a solid state characteristic of the through flow.

7. An apparatus for a marine vessel comprising:

an impeller section, the impeller section having a hub portion and a plurality of impeller blades, the plurality of impeller blades having a trailing edge and an exit angle; and

a diffusor/confusor section, the diffusor/confusor section having a hub portion and a plurality of removable and interchangeable diffusor vanes, the plurality of diffusor vanes having a leading edge and an entry angle, the exit angle of the trailing edge of the impeller blades corresponding to the entry angle of the leading edge of the diffusor vanes allowing for a less turbulent water flow transition from the impeller blades to the diffusor vanes enhancing a solid state character of the water stream.

8. The apparatus for a marine vessel of Claim 7 wherein the diffusor vanes are airfoil shaped with an increased radius to support a less angular transition of a flow off a back of the impeller blades thereby reducing turbulence and enhancing a solid state character of the water stream.

9. The apparatus for a marine vessel of Claim 7 wherein the diffusor vanes includes a first portion and an edge side, the first portion having a uniform thickness throughout, and the edge side being blunted or sharpened and being of a different thickness from the first portion.

10. The apparatus for a marine vessel of Claim 7 further comprising:

an increased radius, the increased radius being introduced at a transition point between the diffuser/confuser and a steering control nozzle assembly thereby allowing for a less turbulent water flow angular transition from the diffuser/confuser to an upper portion of the steering nozzle.

11. An apparatus for a marine vessel comprising:

a diffusor/confuser housing;

a discharge housing;

a steering nozzle; and

a hydraulic trim, the hydraulic trim being aligned between the diffusor housing and an upper portion of the steering nozzle outlet housing, the hydraulic trim including hydraulic ball joints for allowing an up and down trimming of the marine vessel.