

## VIL ADVANTAGE

### *Why HSC when you can get Split Coupled Vertical In-Line?*

When marketing the Split Coupled Vertical In-Line pump, remember the 5 unique strengths which project this design as, simply, the best in the HVAC industry today.

Namely:

- Uses least, valuable, floor space
- Easiest to install
- Easiest to maintain
- Most reliable
- Most flexible for system design

Base mounted pumps take up a lot of room! Particularly the Horizontal Split Case!

Over the years other pump designers have tried to combat this problem by standing HSC on end (PACO KPV for example) or designing top connections (B&G VSC). The vertical HSC took less floor space but is difficult to repair and the top connections made the piping easier but still left a large baseplate to contend with.

The Vertical In-Line eliminates all baseplate concerns and takes only very little more floor space than the piping itself. The best and most modest use of floor space is found with the VIL installed with Suction Guides and Flo-Trex valves.

The VIL becomes an integral part of the piping. Inertia bases and baseplate grouting needs are eliminated.

Flexible connectors, needed to compensate for thermal or mechanical piping to pump misalignment on floor mounted pumps, are eliminated.

(See the enclosed excerpts from the ASHRAE handbook .A Practical Guide to Noise and Vibration Control for HVAC Systems .detailing Guidelines for Inline Pump Installation) VIL pumps are designed with major consideration given to low hydraulic noise and vibration. The vertically mounted dynamically balanced impeller rotates over the center line of the piping. Static deflection (Loads acting on the pump shaft at rest) which may be present in some horizontal pumps (Weight of impeller and weight of overhung portion of shaft produce a bending moment) is eliminated.

Any displacement (Vibration) in the motor is separated from any piping effect by the distance it is away from the piping. (View as an upside-down pendulum, with the fixed point being the pump casing). A 4300 series motor may be vibrating, say, 1.5 mil (0.0015~) but the effect at the piping is theoretically zero and actually very little. Minor displacement, if any, is easily taken up by the piping spring hangers.

Larger pumps are required close to the floor for service convenience.

If the piping drops from the ceiling, pipe stools under cacti pipe leg (1.5" to 2" dia. pipe with a 6" square, or so, plate on the bottom, isolated from the building structure by vibration isolation pads present a more rigid and rugged installation.

Factory alignment and rigid coupling, on the 4300 series, eliminates any field alignment needs.

The Mechanical Seal is the critical maintenance item in any pump.

Most base mounted pumps must be taken apart to find the defective mechanical seal. Even the State of the Art HSC (Including the B&G VSC), which allow easier access to the outboard (Non-drive end) bearing and seal, than in past designs, still need the motor, and the pump side coupling half, removed to enable the inboard (Drive end) bearing housing, bearing and seal to be taken out for service.

The series 4300 split coupling design *truly* allows the mechanical seal (Only one seal, remember) components to be removed for service without disturbing the pump or motor connections. After seal replacement, the rigid coupling assures return to factory alignment specifications.

The only studies we have seen comparing VIL to base mounted pumps were compiled by Shell Oil. They show a 48% higher reliability for the VIL Vs base mounted, based on recorded failure rate per million hours of operation.

Quite an impressive statistic.

OEM packages; in piping above head height; parallel or standby pumps mounted one over the other, in piping along corridor walls; 3 pump systems that will fit through mechanical room doors; on and on .All examples of the versatility of the VIL ...There is no other pump remotely equivalent to the Vertical In-Line pump, for allowing flexibility in system design concepts.

The Series 4300 is, simply, *the* best pump design in the HVAC market, today.

Where sizing permits, floor space economy and ease of installation are greatly improved with the Armstrong *dualArm* unit.

The *dualArm* allows *two* of the time tested VIL pumps to be installed in a single casing.

Further reduces floor space needs.

Eliminates complete piping leg, along with associated valves and fittings

### *Why HSC when you can get Split Coupled Vertical In-Line?*

We cannot discern one reason!

Given the self evident features and benefits of the Split Coupled Vertical In-Line pump, can you?

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