

VIL RETROFIT TO DESIGN ENVELOPE | PUMP LESS CASING | FAQ

File No: 100.222
Date: MAY 20, 2016
Supersedes: NEW
Date: NEW

End User Questions

- Q1** I have a constant flow system, why should I retrofit to a Design Envelope variable speed pump?
- A1** There are savings available by opening up the throttling valve and running the pump at a slower speed but considerable savings are derived through a conversion to variable flow. This can be easily obtained by closing the bypass valves in a 3-way valve system.
- Typically savings are in the range of 60 to 80% with a 2-3 year payback but in some cases the payback is less than 1 year! *
 - Also, in addition to the energy savings, with Design Envelope you also get:
 - Flexibility to accommodate changes in the overall system head/flow requirements
 - Option to convert to variable flow
 - Extended motor life of 20-30% through reduced speed
 - Reduced kW demand charges and less motor shock with Softstart technology
 - Flow and pressure reading available to the BMS and/or at the pumping unit
- * Subject to hours of operation and cost of energy.
- Q2** Why shouldn't I just buy a new Design Envelope pump rather than retrofit my constant speed vIL?
- A2** A new DE pump is always a great decision but the benefits of reusing the casing include:
- Lower installed cost
 - There are considerable labour savings in the installation of a retrofit to Design Envelope versus the installation of a new pump. In many cases the mechanical aspect of the retrofit can be done in 2-3 hours and depending on the HP may be done by a single individual.
 - The purchase price of the vIL Design Envelope rotating assembly is less than a new pump, plus...
 - In situations where the casing is insulated, this does not need to be disturbed or replaced. (Re-insulation can cost as much as \$1000/pump.)

Environmental sustainability - by reusing the casing there is less scrap iron, zero energy used to build the new casing and less weight being shipped, plus for chilled water pumps there is no wasted insulation.

- Less downtime - The retrofit is much faster than a new installation, in many cases only a couple of hours are required for the mechanical work to convert to Design Envelope.

Q3 Why shouldn't I just buy a vFD rather than retrofit my existing vIL to a Design Envelope model?

A3 Firstly, it is quite probable that your older motor won't be compatible to work with a vFD as they need to be 'inverter ready' and most pumps earlier than 2010 wouldn't have this feature.

Even if it is possible, Design Envelope provides the benefit of an integrated selection/design and testing of the motor/drive and new impeller so that you get maximum efficiency.

Also, a Design Envelope pump comes with sensorless technology to control the pump whereas a vFD will need either an accompanying sensor or some additional control signals from the Building Automation.

Further with Design Envelope there is never a concern about finding the required wall space for the vFD.

Q4 What is the Warranty for a vIL to Design Envelope retrofit?

A4 A retrofit to Design Envelope comes with the same warranty as a new pump. This includes a warranty on the existing casing.

Q5 How do I know if my existing casing is still good?

A5 The Armstrong Service dealer or authorized Armstrong Representative will assess your pump and will recommend an entirely new pump if they have concerns about the existing casing.

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Q6 How do I know how my retrofitted pump will perform like a new Design Envelope pump if I have an old casing?

A6 As part of the retrofit, the inside of your existing casing will be cleaned so that it will operate consistent with a new casing.

Further, we test all components supplied in your specific retrofit inside an Armstrong factory with the same casing dimensions and design. If we no longer offer the same casing as used in your existing v1L, we will need to recommend a new pump as we won't be able to confirm the performance. We will be able to clarify this in a preliminary discussion.

Q7 Can I retrofit my Horizontal Armstrong pump to the new Horizontal Design Envelope?

A7 Not yet, but this is something that we are contemplating for the future.

Q8 Can I retrofit my Horizontal Armstrong pump to the new v1L Design Envelope unit?

A8 Many users retrofit their horizontal pumps for v1L Design Envelope units to take advantage of the lowest retrofit installed costs, as no foundation work is needed and the controls wiring can be directly connected to the on-board controls that come with Design Envelope. v1L Design Envelope units will be selected for your actual system needs almost guaranteeing energy savings and, perhaps, hydro reduced kW rebates by being able to install a small motor.

Q9 What is the delivery lead time?

A9 The lead time will be the same as it is for a comparable new Design Envelope pump.

Q10 Who will install the retrofit unit?

A10 Armstrong would be pleased to provide a list of qualified Service Dealers to quote and arrange for the installation, much like we would do for a new pump.

Q11 Who will install a completely new v1L Design Envelope pump?

A11 A complete pump change-out for an identical Design Envelope pump size can be arranged similar to item 9. For different pump sizes or replacing horizontal units, the same Armstrong recommended personnel may decide to recruit a local pipe-fitter to ensure a correct v1L Design Envelope pump installation in your pipework, to Armstrong installation specifications.

Q12 What if I want to install the Design Envelope retrofit at a later date?

A12 You can order it now and store it safely so it will be there when you need it. The storage instructions are the same as that listed in the i&o manual for Design Envelope 4300 and 4380 Vertical In-line Pumping Unit dated February 3, 2016.

Questions from Sales

Q13 What v1L models can be converted?

A13 Casings that are currently available in Design Envelope Generation 3, can be converted in the v1L retrofit to Design Envelope program. More specifically this includes pump casings as found in appendix A. (to be included)

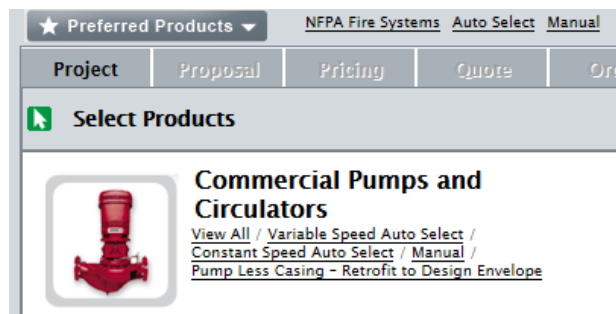
There are however age limitations that vary depending on the casing type as casings have been redesigned over time. If we no longer make the same casing we wouldn't be able to test the performance and will need to recommend a new pump.

Q14 How do I know the age of the pump?

A14 The age is on the submittal or customer order confirmation. Alternatively, those with access to eService can look up the age with the serial number. For those without access to eService either **Customer Service** or the Field Service and Warranty team may be able to help look up the age based on the serial number.

Q15 How do I select a v1L Design Envelope Retrofit?

A15 A v1L to Design Envelope Retrofit can be selected on ACE-Online via the manual selection method. It is called Pump Less Casing - Retrofit to Design Envelope.



Q16 Are the Design Envelope curves and submittal information provided?

A16 The ACE-Online selection will provide dynamic curves and other information available in the submittal package for a new Design Envelope pump.

- Q17** Can we use the existing impeller and just order a motor and drive?
- A17** No, a new impeller will be shipped with the rotating assembly as the testing and sensorless mapping will be done based on a new impeller for that pump assembly.
- Q18** My customer has a relatively new Armstrong vIL, can you just ship a drive with the Sensorless map included?
- A18** Because the controller /motor & rotating assembly is tested in the Armstrong factory as a complete unit, this initiative requires that the entire rotating assembly be replaced.
- Q19** What parts come with the vIL retrofit?
- A19** A new flush line and casing gasket will be packed as loose items, otherwise the components will be shipped as an assembled package. Those components include all components of a complete Design Envelope pumps except the casing (includes: motor, drive/controller, adapter, shaft, impeller and seal).
- Q20** What accessories do you recommend?
- A20** We recommend the same spare parts as with a new Design Envelope pump, including a spare seal.
- Q21** What is the delivery lead time?
- A21** The lead time will be the same as it is for a comparable new Design Envelope pump. Consult your shipping indicator for details.
- Q22** Does the **Pump Less casing retrofit to Design Envelope** count as a Design Envelope pump?
- A22** Yes, this counts toward the Design Envelope ratio. Plus, it counts towards a Parts order as well.

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