



*Genesys® 3x2-6 Long Coupled*



*Genesys® Close-Coupled 3x2-6*

## Why GENESYS® Today

Our vision of making products that capture integrity — integrity that makes them precious to the customer — is a costly and difficult endeavor. After years of rigorous research and development, the proven B73lean® design of the Genesys® is lowering total cost of ownership from basic applications to more technologically advanced facilities around the globe. The Genesys® non-metallic, end-suction centrifugal pump line is designed and engineered to provide highly efficient pumping solutions. The Genesys® composite construction with no wetted metal parts gives it compatibility with many aggressive chemistries.

The unique closed-impeller and time-tested volute design results in high performance and efficiency.

Genesys® pumps are among the first to demonstrate a strong yet simple economic reason to start switching to BMC thermosets: Compared to metallic materials of construction, thermosets are about half the cost. BMC offers low shrink and low warp; it molds to net dimensions and holds tight tolerances. BMC also adds a “marketing-oriented” advantage in the ability to color the material for a wide variety of end-user functionality.

## What is B73lean® and why is it better?

### B73lean® THE PUMP PAYS FOR ITSELF!

For many applications, full compliance with the B73.1 standard can be a burden simply because you must pay for features you don't need. But, there is a more efficient alternative!

The B73lean® philosophy considers it far more important to emphasize process performance and energy efficiency than compliance with some of the dimension specifications in the full B73.1 spec.

### B73lean® IS EASIER TO MAINTAIN

Its interchangeable design fits the old B73 inlet/discharge envelope but with a smaller footprint. Standard mounting, close coupled, direct back pull-out design eliminates alignment and calibration issues.

### B73lean® IS LESS EXPENSIVE TO OPERATE

Smooth, resin-rich thermoset surfaces, elegantly simple design and fewer components make it far more efficient than the old pumps specified by your predecessors.



*Genesys® Wet End Cutaway*



### Mechanical Seal



*Impenatra® II Seal*

The Impenatra® II Seal is an innovative new approach to solve many shaft sealing problems. When used with Genesys®, it isolates all metallic parts from contact with the fluid. Alternately, corrosive chemicals require seals made of exotic alloys.

You can expect unprecedented corrosion resistance and protection from attack by contained fluid and surrounding environment. Easy to install and field adjustment not required. Offers great versatility at an excellent price. Reliability due to simplicity of design and quality components.

#### TECHNICAL DATA

Seal Type - stationary wave spring, reverse mount  
Maximum temperature 90 °C

#### MATERIALS OF CONSTRUCTION

O-rings and elastomers available in Buna, Viton®, EPDM, Kalrez® and Alfas®  
Seal case - injection molded polypropylene  
Seal face - carbon graphite resin, binderless graphite or silicon carbide  
Seal seat - silicon carbide

### Seal Flushing Arrangements

Genesys® provides a seal flush port, also known as a water-wash, to keep the mechanical seal surfaces cool and clean. Seal flushing helps provide an optimal environment around the Impenatra® II seal faces. They are highly recommended for longevity of the seal and reducing maintenance costs. The Genesys® internal seal flush port is offered in two common piping configurations:

#### PLAN 11

Seal flush from pump discharge port to internal flush port on pump bracket.

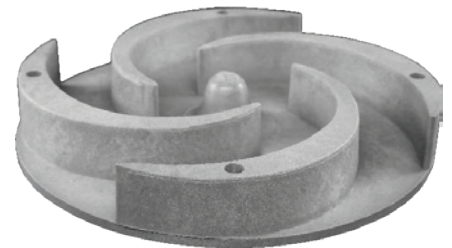
- Seal chamber heat removal.
- Increase seal chamber pressure and fluid vapor margin.
- Keeps seal surfaces clean in applications with fluids that crystallize

#### PLAN 13

Recirculation from seal chamber to pump suction through port.

- Seal chamber heat removal.
- Keeps seal surfaces clean in applications with fluids that crystallize

### Impeller



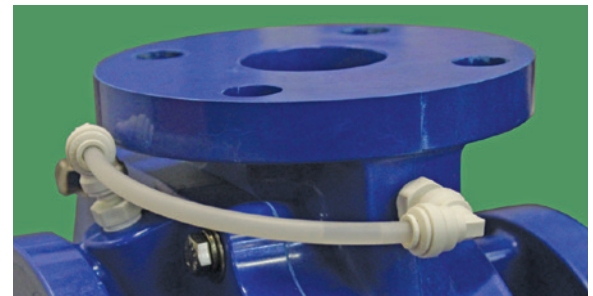
*Semi-Open*



*Enclosed*

Enclosed impeller design provides high efficiency performance. Semi-Open impeller design for highly viscous fluids and suspended solids.

- Ultrasonically welded impeller shroud and vane
- Motor shaft o-rings not required
- No balancing and shaft alignment required for impeller assembly



*Genesys® PLAN 11 Seal Flush Arrangement*



*Genesys® PLAN 13 Seal Flush Arrangement*





**B73lean®**

Ensures inlet and discharge ports to be interchangeable with existing metal and plastic ANSI pumps conforming to the ANSI/ASME B73.1 specification.

B73lean® provides the ability to close-couple to five different NEMA JM motor frames (143JM through 215JM NEMA frame motors). This benefit provides lower acquisition costs and reduces the overall footprint when comparing to long coupled / bearing frame pump and motor configurations.

**SEAL FLUSH PORT**

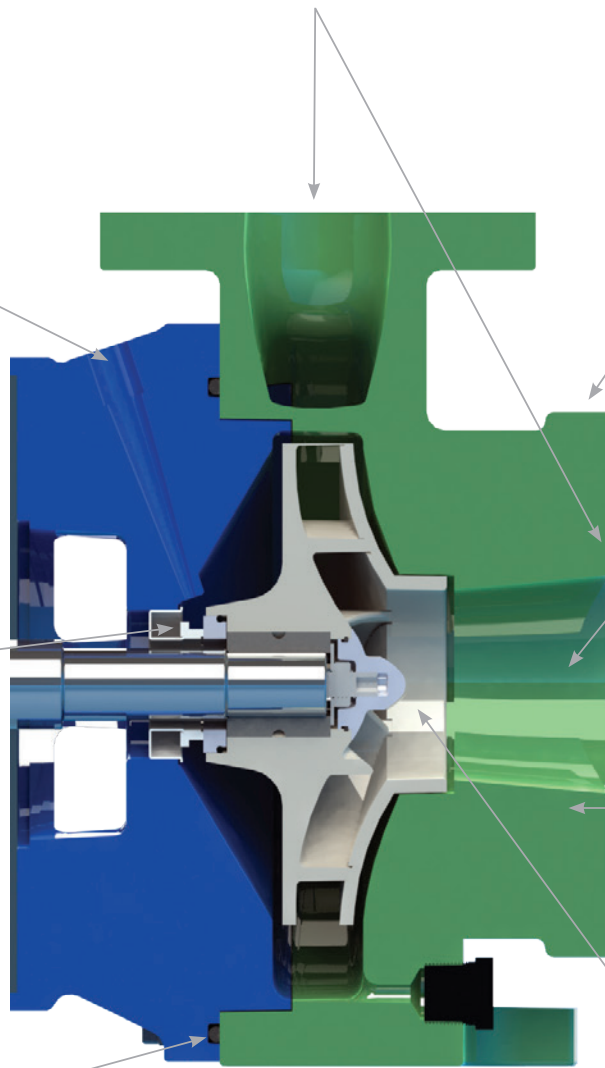
- Lubricates the mechanical seal
- Removes heat generated by the seal and motor shaft
- Extends the life of the seal
- Reduces maintenance cost
- Features two seal flush port configurations including plan 11, plan 13

**IMPENATRA® II**

- Non metallic design
- No metal in contact with process fluid
- Manufactured for sea water and chemical applications
- Seal faces and elastomers are available in a wide range of materials
- Ensures compatibility for corrosion resistance.

**SIMPLICITY OF DESIGN**

- One casing o-ring for quick and easy assembly.



*Genesys® 3x2-6 Cross Section*

**THROUGH BOLT DESIGN**

- True back-end pullout
- Ease of maintenance

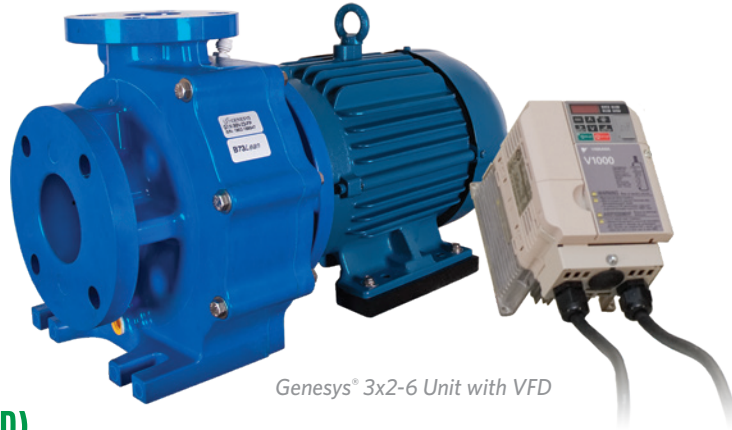
**PROPRIETARY BULK MOLDED VINYL ESTER COMPOUND**

- Compression molded parts
- Superior resin rich surfaces
- Smooth hydraulic passages
- Promotes high pump efficiency
- Withstands the intensity of the toughest piping loads
- The thermoset formulation provides high temperature and chemical resistance in a wide array of applications

**ENCLOSED IMPELLER**

- Peak efficiency of 76%
- Internal hydraulic passages provide high efficiency performance





Genesys® 3x2-6 Unit with VFD

**Variable Frequency Drive (VFD)**

Genesys® pumps in combination with a variable frequency drive (VFD) result in a versatile pumping system with the lowest total cost of ownership. This is accomplished by slower operating speeds with a larger more efficient impeller, reducing energy consumption and increasing service life. Pump purchases should be seen as power and labor contracts, since operating cost will far exceed acquisition cost.

The design experts at MDM will size the pump to meet maximum system flow and validate whether a VFD is appropriate for your pumping application. Below is a list of potential operating benefits.

Aegis ground rings and insulated bearings can be provided for additional protection with VFD applications.

**Benefits**

- Reducing rotational speed will draw less electrical power compared to valve throttling.
- Increased service life by lowering rotational speed (seals, bearings and motor).
- Ability to integrate with system automation and monitoring. Rotational speed can be controlled to maintain a desired flowrate as system pressure demands fluctuate.
- Inherent soft starting reduces wear on motor and other system components such as piping and valves.
- Voltage being supplied to the motor is optimized based on the operating load, thus maintaining the right amount of motor slip.
- Some utilities offer rebates for installing VFDs in new or retrofit work.

**50HZ Performance**

