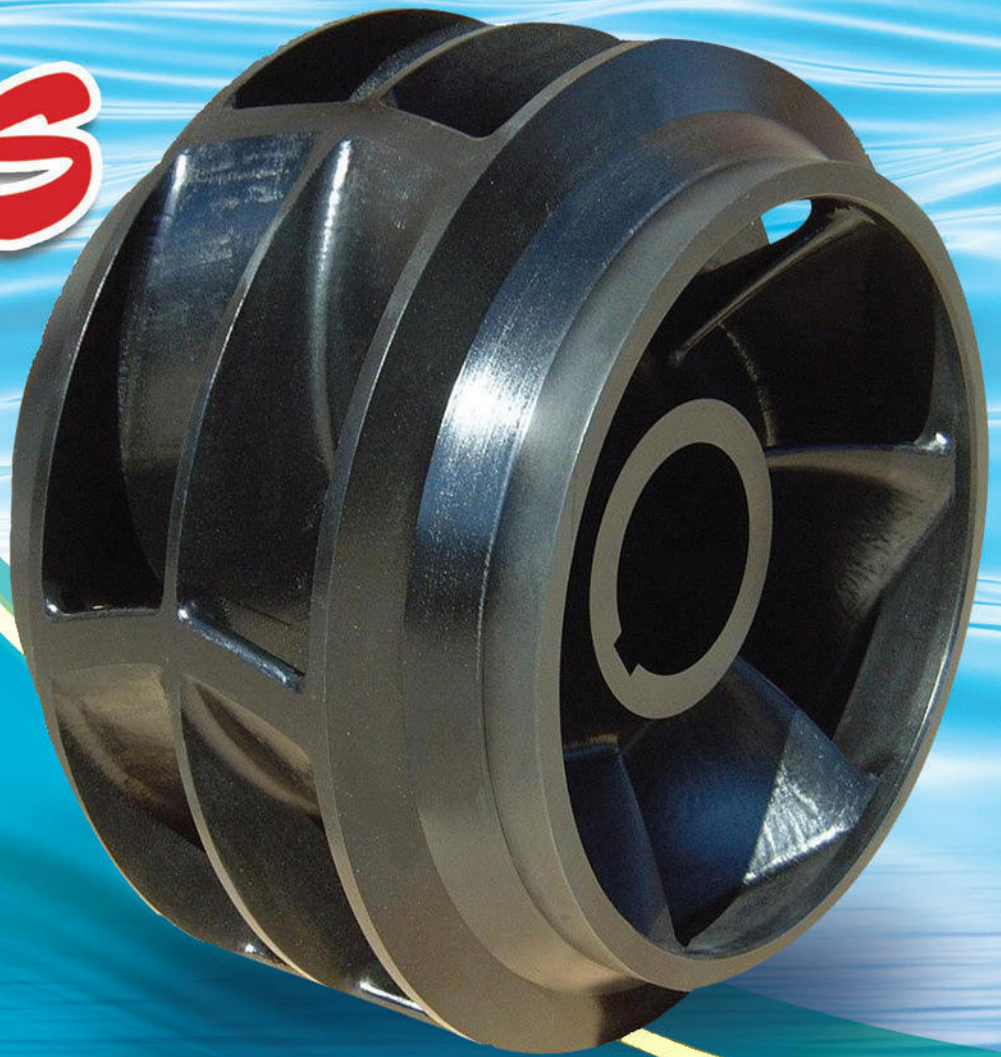


Sims



How does

BALANCE

relate to:

- ▶ **MOTOR**
- ▶ **MECHANICAL SEAL LIFE**
- ▶ **CASING RING & WEAR RING LIFE**
- ▶ **BEARING, BUSHING & SLEEVE LIFE**

Often Customers, or Potential Customers, complain about Mechanical Seal Failures, or Bearing Failures, and even Motor Failures. What most Customers do not realize is that they **DO NOT** have a Seal Problem, or a Bearing Problem, or even a Motor Problem; rather, they have a **Hydraulics Problem** caused by Mechanical Imbalance, Hydraulic Imbalance, Radial Thrust Imbalance, or Improper Design, Repair, or Manufacture of the impeller!



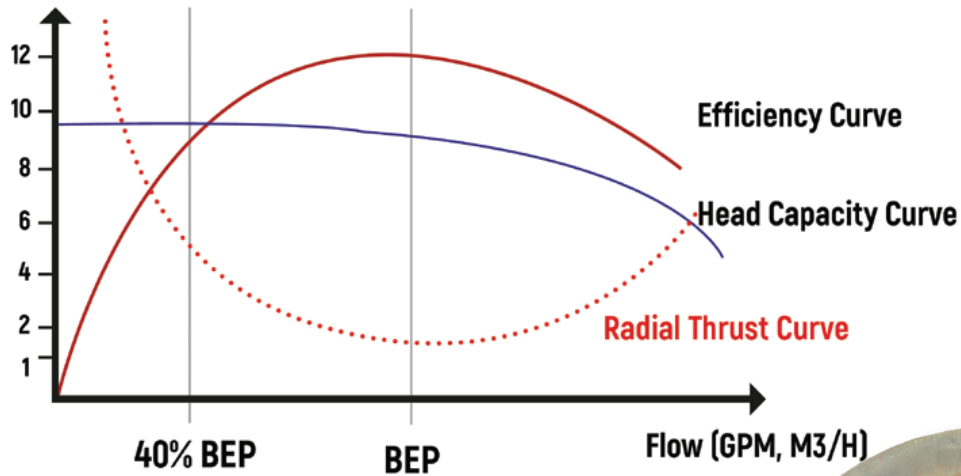
All these problems are eliminated by upgrading to **SIMSITE®**
Structural Composite Impellers
& Casing Rings, or Complete SIMSITE® Pumps!

There are three types of Balance:

- A MECHANICAL BALANCE**
1. STATIC 2. DYNAMIC
- B HYDRAULIC BALANCE**
- C RADIAL THRUST BALANCE**

GRAPH OF RADIAL FORCE

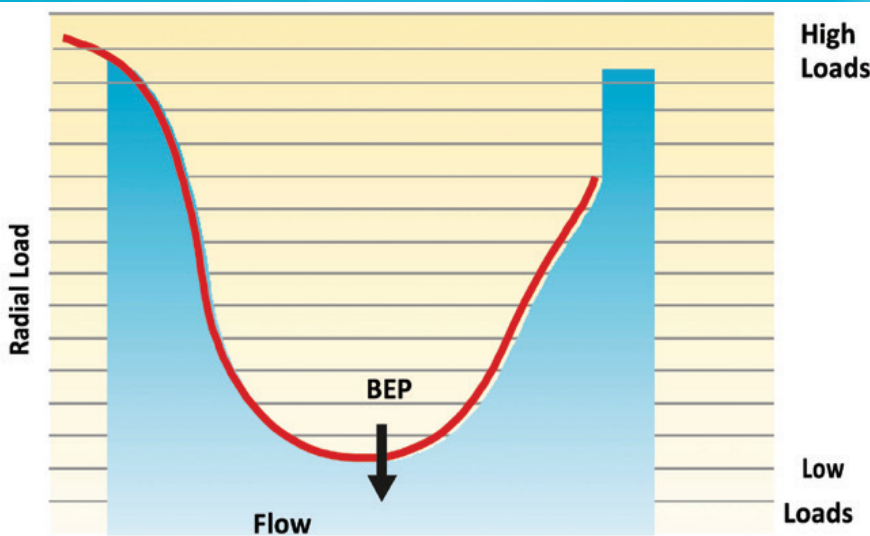
Radial Thrust Factor



- ▶ One of the big mistakes is to put coatings in the impeller vane channels, or passageways, which not only changes the pump hydraulics (Performance of the pump), but makes the Impeller imbalanced hydraulically!



RADIAL LOAD



- ▶ Operation of a pump away from the BEP results in higher radial loads creating vibration and shaft deflection.



HOW **SIMSITE**[®] IMPELLERS ELIMINATE MECHANICAL, HYDRAULIC AND RADIAL THRUST BALANCE PROBLEMS

SIMSITE[®] Impellers & Casing Rings **DO NOT CORRODE**, or support ELECTROLYSIS (galvanic corrosion) in seawater, river water, sewage, chlorine, bromine, or wastewater, and they are 100% machined from one center position from solid blocks of the patented **SIMSITE**[®] Structural Composite. As a result of being machined, all impeller vanes and exit ports are equally spaced and therefore **SIMSITE**[®] Impellers **NEVER** go into an imbalance. **SIMSITE**[®] Impellers are balanced both mechanically and hydraulically and remain balanced for the life of the pump!

SIMSITE[®] Impellers & Casing Rings are lightweight (85% less than Bronze) and they are designed and engineered for the system's operating point, so that the operating point becomes the pumps' best efficiency point (BEP). That means there is substantially less radial and axial movement in the pump, which translates into longer life for:

- ▶ **BEARINGS**
- ▶ **MECHANICAL SEALS**
- ▶ **RINGS & SLEEVES**
- ▶ **PUMP MOTORS**

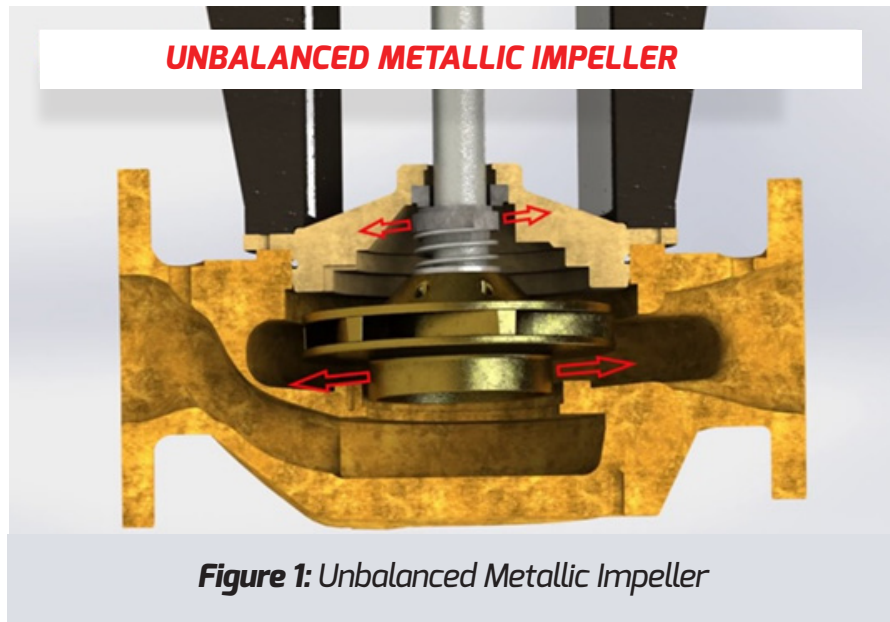
All **SIMSITE**[®] Products are machined from solid blocks of **SIMSITE**[®] Structural Composite - they are NOT CAST, or Molded, or Extruded!

PENDULUM EFFECT

The “Pendulum Effect” is created by inherently imbalanced, heavy, cast metallic impellers, which are not only hydraulically and mechanically Imbalanced, but often corrode, erode, and cavitate.

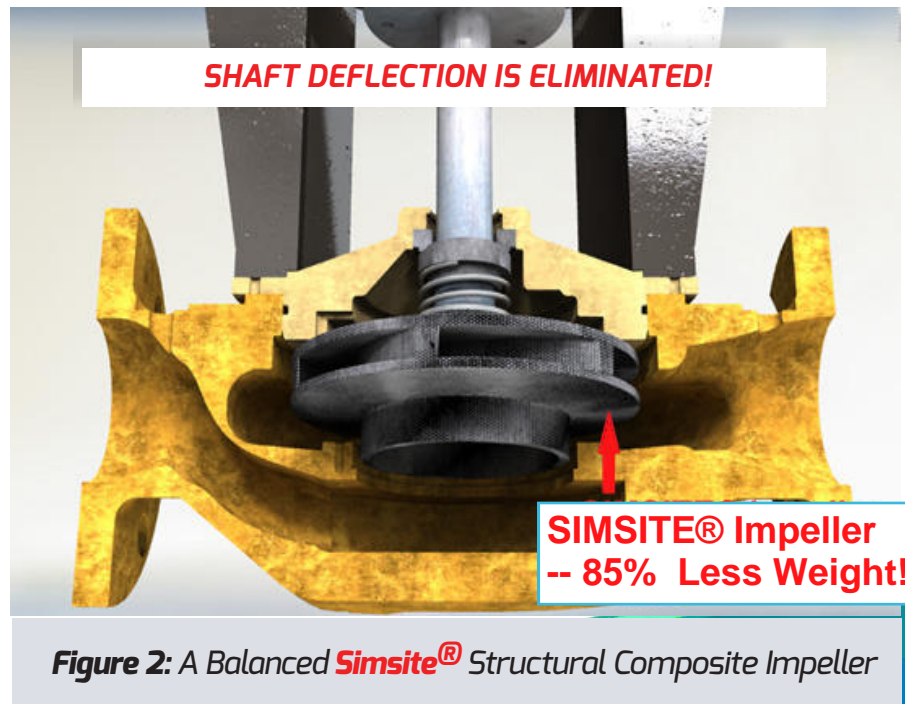
Whether the pump is Horizontal, or Vertical, the heavy weight and inherent imbalance of the cast metallic impellers sets up a condition for premature pump failure. Like the Pendulum on a

clock, the heavy impeller acts like a weight at the end of the shaft and starts to wobble, or deflect. Any Corrosion, Erosion, or Cavitation increases the Pendulum Effect Problem!



The Pendulum Effect is Eliminated with SIMSITE® Impellers!

- Perfect Mechanical, Hydraulic, and Radial Thrust Balance!
- 85% LESS WEIGHT!
- Perfect Mechanical, Hydraulic, and Radial Thrust Balance!
- NO Performance Deterioration!
- NO Corrosion in Seawater, Waste-Water, Sewage, River Water, Chlorinated Water, Bromine, and many other Chemicals!



TRUE VALUE of
**SIMS PUMPS &
SIMSITE® PRODUCTS...**

BENEFITS OF USING **SIMSITE®** ENGINEERED
PUMPS IMPELLERS & PUMP PARTS
THAT ARE BALANCED, DO NOT
CORRODE, & BUILT TO LAST!



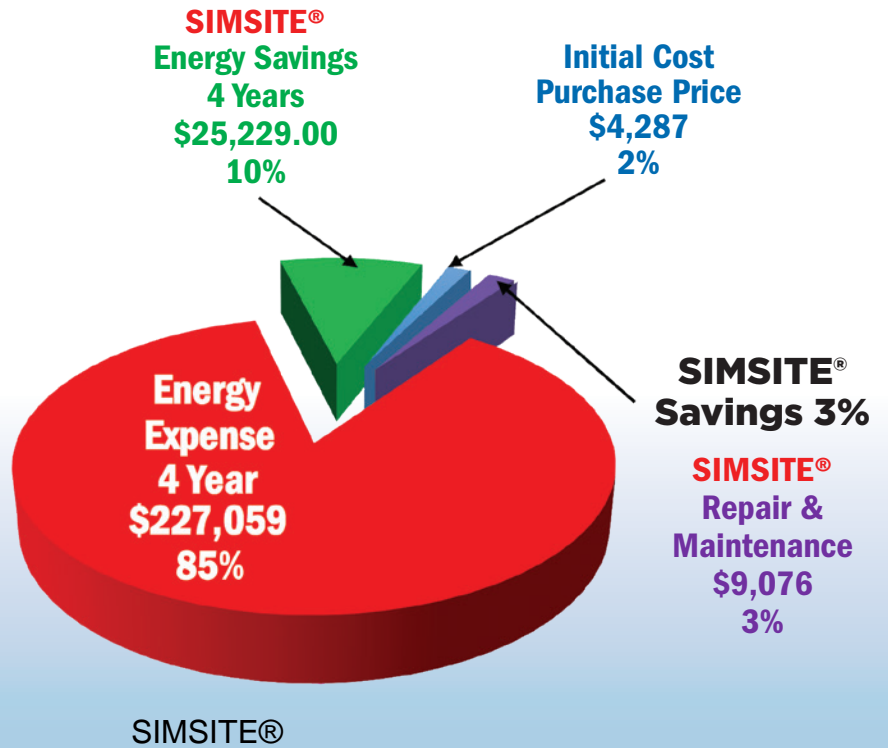
ROI:
BRONZE IMPELLER
 VS **SIMSITE® IMPELLER**

SIMSITE® IMPELLER & RINGS

Model: Allweiler 150-315
 Size: 12.06 Dia x 4.16 Width
 in Seawater- 4 Years

**ROI - USING
 SIMSITE®
 IMPELLERS & RINGS:
 175% PER YEAR!**

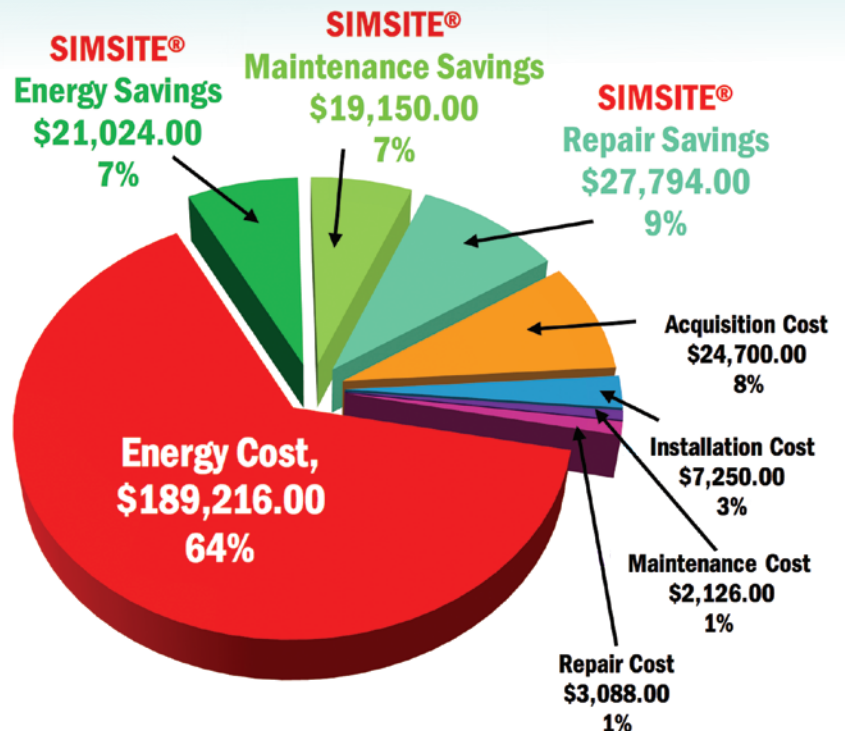
SIMSITE® Savings 10%



ROI:
BRONZE PUMP
 VS **SIMSITE® PUMP**
 WITH
SIMSITE® INTERNALS
LIFE CYCLE SAVINGS

60 HP SIMS PUMP with
SIMSITE® Impellers & Casing Rings
 in Seawater for 5 Years!

**ROI - USING
 SIMS PUMP WITH
 SIMSITE®
 IMPELLERS & RINGS:
 155% PER YEAR!**



WHEN ONLY THE BEST WILL DO!

*A tradition of innovation continues...
...you can achieve the ideal!*



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SIMS Pump Valve Company

1314 Park Avenue

Hoboken, NJ 07030

201-792-0600

201-792-0606

www.**SIMS**ITE.com

www.**IMPELLER**STORE.com

Simpump@Simsite.com

Simsite@Simsite.com

