Lesson 1: Gear Pump Basics
Northern Pump manufactures gear pumps that are positive displacement, rotary pumps, with two gears of equal size.

The drive shaft and gear is rotated by a motor or by extension of a auxiliary motion shaft. The drive gear turns the driven shaft and gear.
Fluid is pulled into the pump by the hydraulic vacuum force created from the pump, or forced into the pump by either gravity or a charge pump. Typically, a charge pump is only needed for extremely high viscosities, or for exceptionally high flow rates.
Next, the fluid is carried around the gears in the area between the teeth. As the gears begin to mesh, the fluid is forced out of the area between the teeth. This mechanical force is able to generate an exceptionally high amount of hydraulic pressure.

Northern® Fast Fact.....
Northern 4000 Series pumps are typically rated to generate up to 2000 pounds per inch² (PSI)
Lesson 1: Gear Pump Basics

BASIC PUMP LAYOUT

- Suction or Discharge Connection
- Drive Shaft
- Mounting Bracket
- Suction or Discharge Connection

Rear of Pump

Front of Pump
Lesson 1: Gear Pump Basics

- Pump rotation is determined by standing over the motor, and looking at the front of the pump. It is described as Clockwise, or Counter Clockwise.

Northern® Fast Fact.....

Northern pumps can be designed to operate in either direction, however they can only operate in the manner they are designed.