

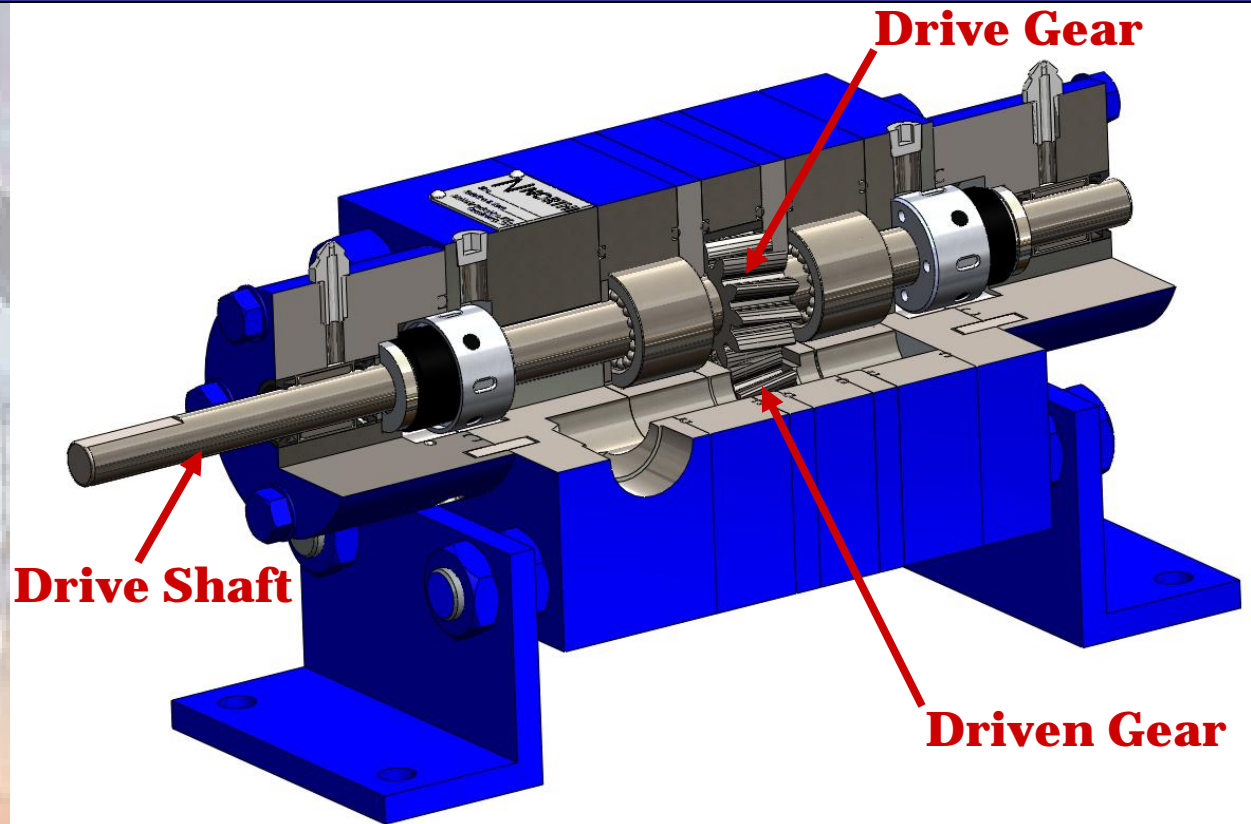


# Gear Pump 101

## Lesson 1: Gear Pump Basics

**When your reputation depends on it!**

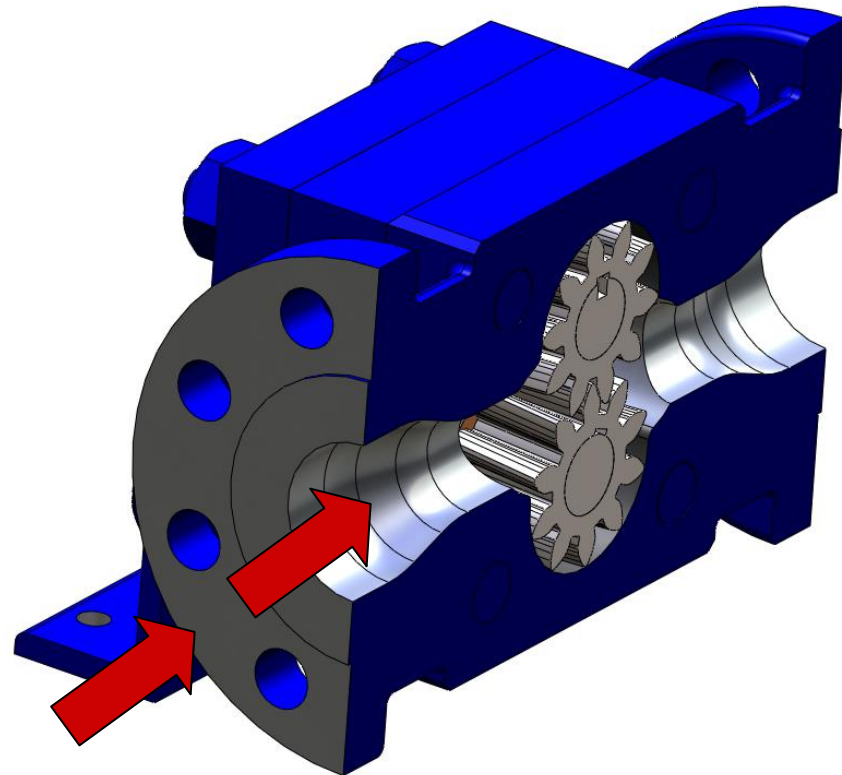
# Northern<sup>®</sup> Lesson 1: Gear Pump Basics



- **Positive Displacement Rotary Gear Pumps**
  - ✓ two gears of equal size
- **Drive Shaft and Gear are Rotated by a Motor or Auxiliary Motion shaft**
- **Drive Gear Turns the Driven Shaft and Gear.**

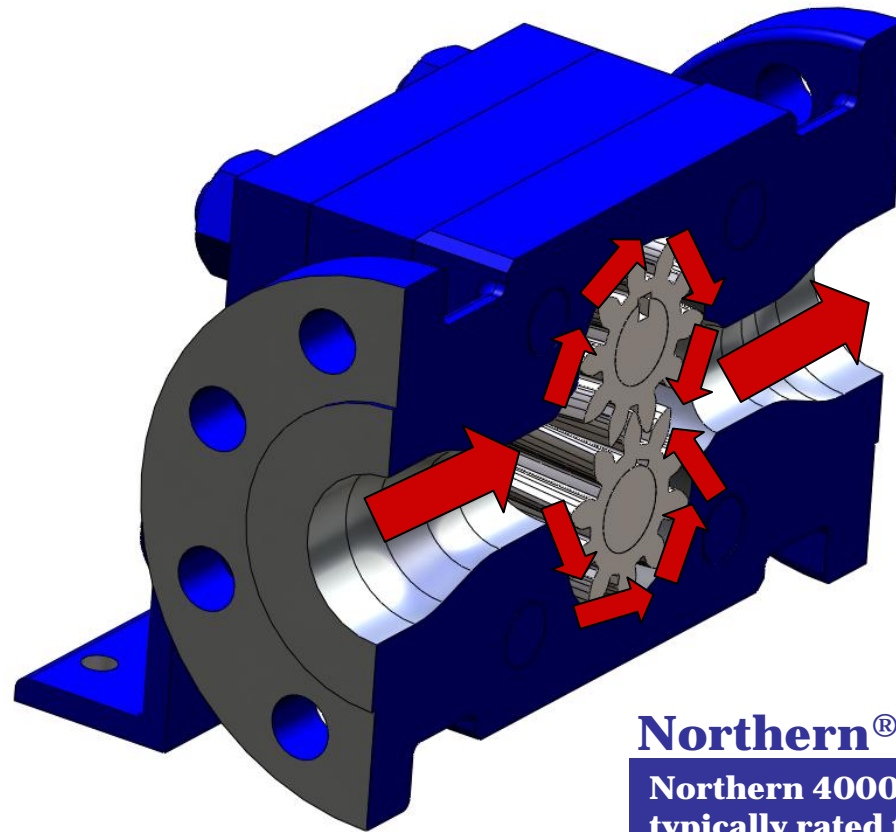
# Northern® Lesson 1: Gear Pump Basics

- **Hydraulic Vacuum Pulls Fluid Into Pump**
- **Charge Pump Only Needed for Extremely High Viscosities or High Flow Rates**



# Northern® Lesson 1: Gear Pump Basics

- **Fluid is Pushed Through the Gears in the Area Between the Teeth.**
- **As Gears Mesh Mechanical Force Generates High Hydraulic Pressure**



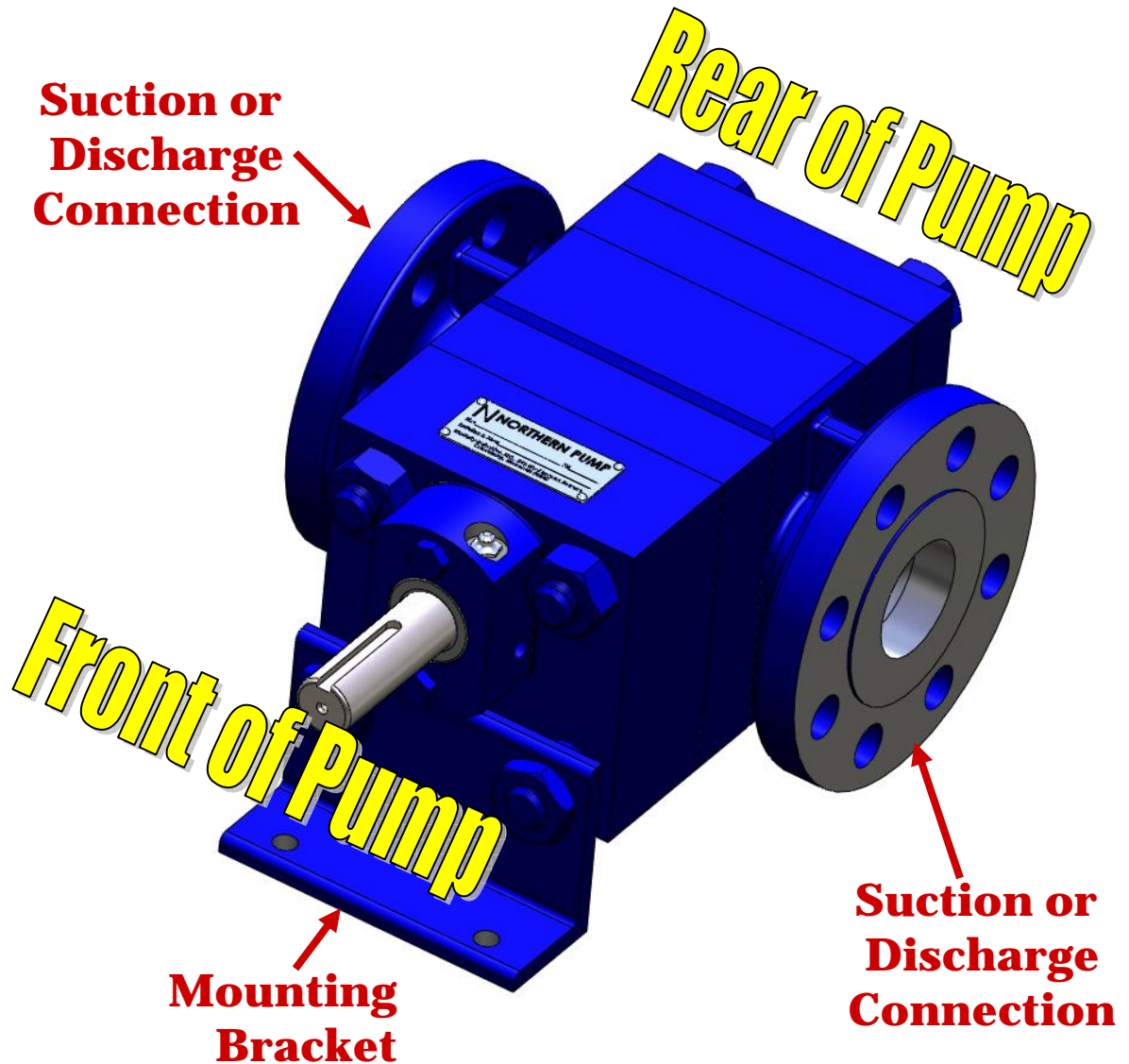
## Northern® Fast Fact.....

Northern 4000 Series pumps are typically rated to generate up to 2000 pounds per inch<sup>2</sup> (PSI)



# Northern® Lesson 1: Gear Pump Basics

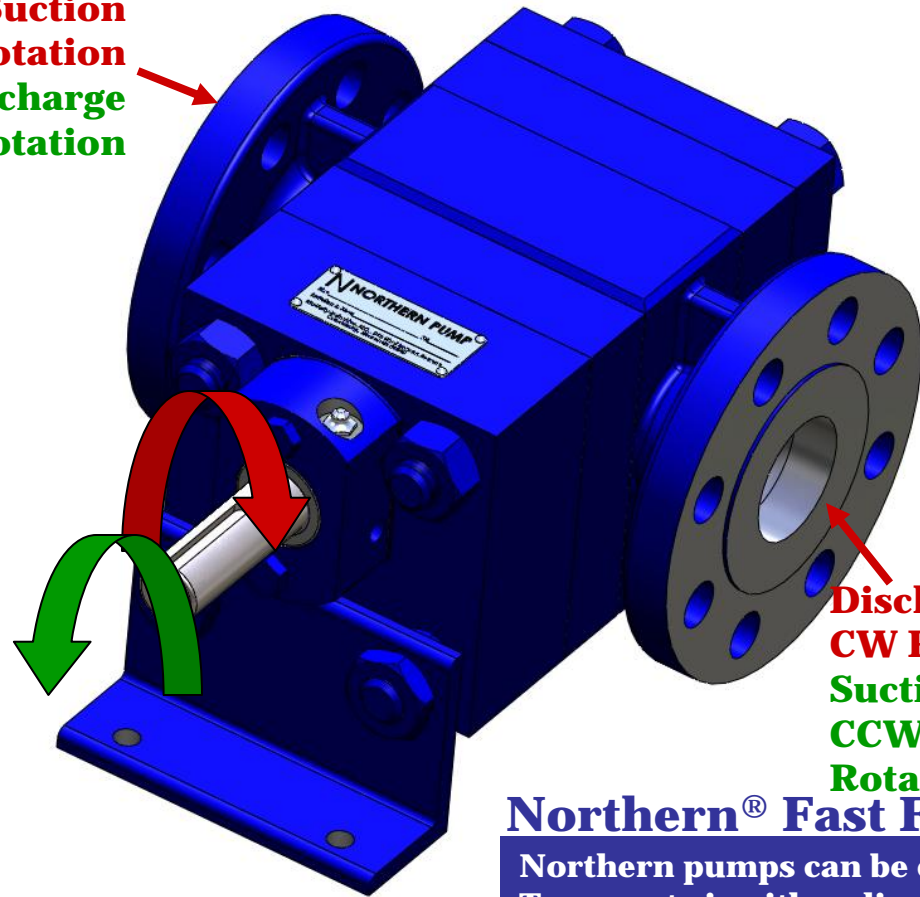
## BASIC PUMP LAYOUT



# Northern® Lesson 1: Gear Pump Basics

- Determine Pump Rotation as Clockwise, or Counter Clockwise.

**Suction**  
**CW Rotation**  
**Discharge**  
**CCW Rotation**



**Discharge**  
**CW Rotation**  
**Suction**  
**CCW**  
**Rotation**

## Northern® Fast Fact.....

Northern pumps can be designed  
To operate in either direction,  
However they can only operate  
In the manner they are designed.

