

# Gerotor Pump Overview



Gerotor pumps are [internal gear pumps](#) without the crescent. The rotor is the internal (drive) gear shown below in gray, and the idler is the external (driven) gear, shown below in orange. They are primarily suitable for clean, low pressure applications such as lubrication systems or hot oil filtration systems, but can also be found in low to moderate pressure hydraulic applications.

## How Gerotor Pumps Work

1. Liquid enters the suction port between the rotor (gray gear) and idler (orange gear) teeth.
2. Liquid travels through the pump between the teeth of the "gear-within-a-gear" principle. The close tolerance between the gears acts as a seal between the suction and discharge ports.
3. Rotor and idler teeth mesh completely to form a seal equidistant from the discharge and suction ports. This seal forces the liquid out of the discharge port.



## Advantages

- High Speed
- Only two moving parts
- Only one stuffing box
- Constant and even discharge regardless of pressure conditions
- Operates well in either direction
- Quiet operation
- Can be made to operate with one direction of flow with either rotation

## Disadvantages

- Medium pressure limitations
- Fixed clearances
- No solids allowed
- One bearing runs in the product pumped
- Overhung load on shaft bearing

## Applications

Common gerotor pump applications include, but are not limited to:

- Light fuel oils
- Lube oil
- Cooking oils
- Hydraulic fluid

## Materials of Construction / Configuration Options

- **Externals (head, casing)** - Cast iron
- **Internals (rotor, idler)** - Steel
- **Bushing** - Carbon graphite, bronze, and other materials as needed
- **Shaft Seal** - Lip seals, component mechanical seals
- **Packing** - Not commonly used for gerotor pumps

## Manufacturers

- [Viking Pump Inc.](#)



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