Tuthill

Specification Sheet
GlobalGear® Series Pump

Pump Type

Pump shall be of internal gear type. One rotor of internally cut gear teeth will mesh with one externally cut gear. Fluid shall be carried between gear teeth, and shall be displaced when the gear teeth mesh. The surfaces of the rotors shall cooperate to provide continuous sealing. Internally cut rotor shall terminate at the end of drive shaft.

Iron Pump M.O.C.

Pump Part	Acceptable Material
Cover	Cast Iron: ASTM A48
Housing	Cast Iron: ASTM A48
Bracket Body and Valve Body	Cast Iron: ASTM A48
Valve Block-off Plate[1] (if applicable)	1018 plate (with "Garlock" style 3125TC/SS gasket)
Rotor Head and Idler Gear	Ductile Iron: ASTM A536, grade 80-55-06
Rotor Shaft	Carbon Steel: AISI 4140
Idler Pin	Hardened steel: AISI 1117
Bushing	Bronze: SAE CA932
Gaskets	Fiber with nitrile binder ("Garlock" Style 3000)
Bearing Carrier[1]	Cast Iron: ASTM A48
Cover Jacket[1] (if applicable)	Ductile Iron: ASTM A536, grade 80-55-06
Jacketed Bracket (if applicable)	Cast Iron: ASTM A48

316 Stainless Steel Pump M.O.C.

Pump Part	Acceptable Material
Cover Housing	Cast 316SS: ASTM A743
Housing	Cast 316SS: ASTM A743
Bracket Body and Valve Body	Cast 316SS: ASTM A743
Valve Block-off Plate[1] (if applicable)	1018 plate (with "Garlock" style 3125TC/SS gasket)
Rotor Head and Idler Gear	Nitronic 60: ASTM A494, grade CYSnBiM
Rotor Shaft	Armco 17-4PH: ASTM A564
Idler Pin	316SS: ASTM A276, grade 316 Condition A
Bushing	Carbon graphite resin
Gaskets	Graphite/316SS ("Garlock" Style 3125TC/SS)
Bearing Carrier[1]	Cast Iron: ASTM A48
Cover Jacket[1] (if applicable)	Ductile Iron: ASTM A536, grade 80-55-06
Jacketed Bracket (if applicable)	316SS: ASTM A743, grade 316

Note: 1 = The Valve Block-off Plate, Bearing carrier, and Cover Jacket shall have no contact with process fluid.

Cast Steel Pump M.O.C.

Pump Part	Acceptable Material
Cover Housing	Cast Steel ASTM A216 Grade WCB
Housing	Cast Steel ASTM A216 Grade WCB
Bracket Body and Valve Body	Cast Steel ASTM A216 Grade WCB
Valve Block-off Plate[1] (if applicable)	1018 plate (with "Garlock" style 3125TC/SS gasket)
Rotor Head and Idler Gear	Ductile Iron: ASTM A536, grade 80-55-06
Rotor Shaft	Carbon Steel: AISI 4140
Idler Pin	Hardened steel: AISI 1117
Bushing	Bronze: SAE CA932
Gaskets	Fiber with nitrile binder ("Garlock" Style 3000)
Bearing Carrier[1]	Cast Iron: ASTM A48
Cover Jacket[1] (if applicable)	Ductile Iron: ASTM A536, grade 80-55-06
Jacketed Bracket (if applicable)	Cast Iron: ASTM A48

Available Alternate Pump Materials

Pump Part	Alternate Acceptable Material
Cover	Tutrided Cast Iron: ASTM A48 surface hardened
Housing	Tutrided Cast Iron: ASTM A48 surface hardened
Rotor Head and Idler Gear	Tutrided Cast Iron: ASTM A48 surface hardened
Rotor Shaft	Armco 17-4PH: ASTM A564
Idler Pin	Chrome Oxide Coated ASTM A276, grade 316
Bushing	Carbon graphite resin
Bushing	Tungsten Carbide
Gaskets	Graphite/316SS ("Garlock" Style 3125TC/SS)

Design Criteria

Back Pull Out

The following components shall be field replaceable without disconnecting the pump head from the process piping.

- Rotor
- Idler gear and idler bushing
- Bracket and bracket bushing
- Bearing carrier, bearing and bearing caps
- Mechanical seals, cartridge seals, or packing

Drive Module

A replaceable drive module shall be available from the manufacturer. The drive module shall enable the user to quickly replace the following components:

- Rotor
- Bracket/bushing assembly
- Bearing carrier, bearing and bearing caps
- Mechanical seals, cartridge seals, or packing

Reversible Bracket

In iron pumps, the bracket/bracket bushing assembly shall be reversible to enable the mechanical seal to be placed in either an inboard or outboard position.

Note: The GG550 does not have a reversible bracket.

Idler Pin Lubrication

The idler pin shall obtain extra lubrication from the process fluid by diverting a small amount of pressurized discharge process fluid to the idler pin/idler bushing interface.

Shaft Sizes

The rotor shafts shall enable the use of commonly available mechanical seals. Rotor shafts shall also be available in metric dimensions. Acceptable shaft diameters are as follows:

US	1.125″	1.375″	1.75″	2.75″
Metric	28 mm	35 mm	45 mm	70 mm

In-line Seal Access

Outboard mechanical seals or packing shall be accessible and serviceable from the drive shaft end of the pump, without need of disconnecting pump from process piping.

Use Packing, Mechanical Seal IB/OB, Cartridge Seal

Pump shall be capable of using either mechanical seals, packing, or cartridge seals.

Modular Ports

Ports shall be detachable from pump housing, enabling installation flexibility of different sized ports. Please

Note: The GG550 does not have this feature.

Seal Flush and Hydraulic Load Balance

Mechanically sealed pumps shall utilize a pluggable seal flush that diverts a small portion of the process fluid to the mechanical seal area. Flush shall be designed to either provide (at the user's option) a flush from the discharge side of the pump to increase the flow of fluid over the seal faces or from the suction side to reduce the pressure in the seal chamber.

Note: The GG550 does not have the pluggable flush and hydraulic load balance.