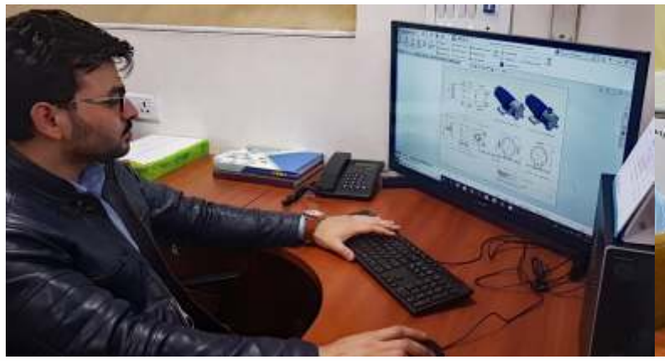

INFINITY
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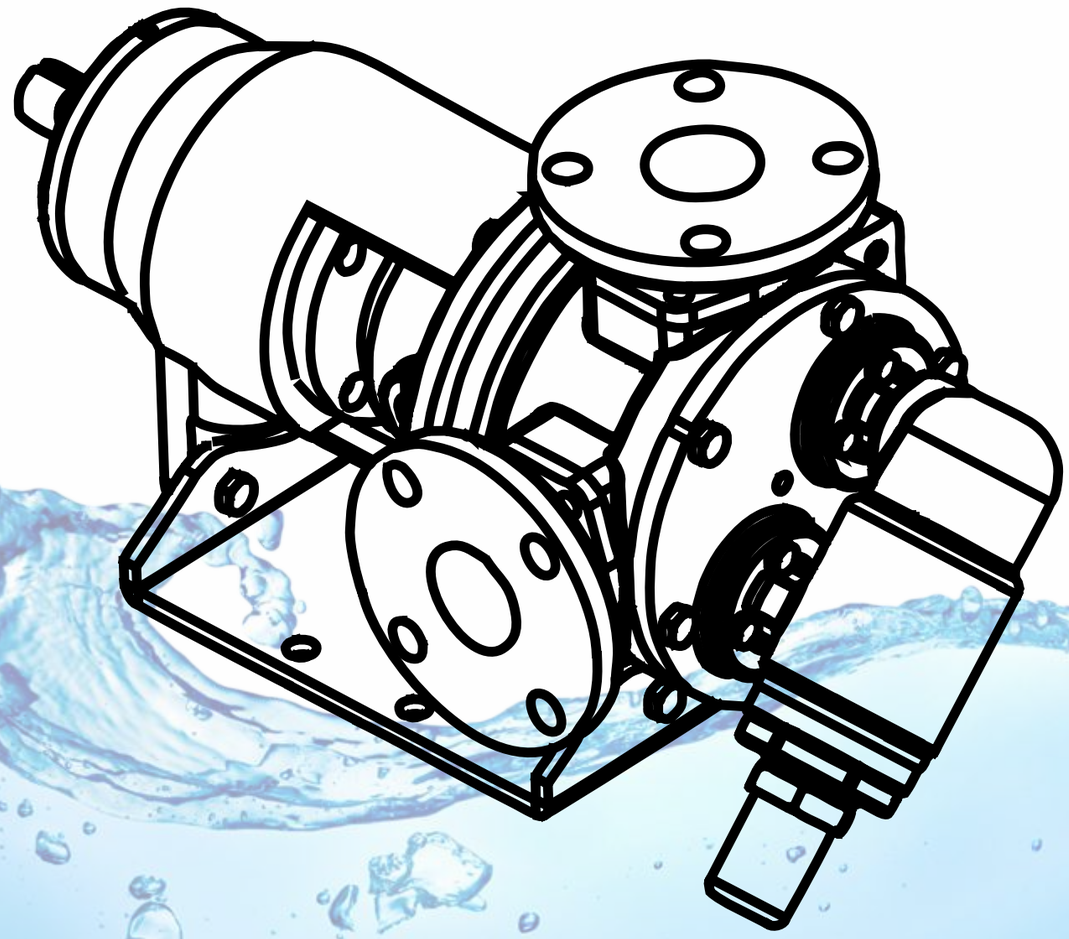
TUFFGEAR®

DOC. NO.: CAT/IGP/2223/R01

TUFFGEAR®
INTERNAL GEAR PUMPS



Built Tough To Last Long

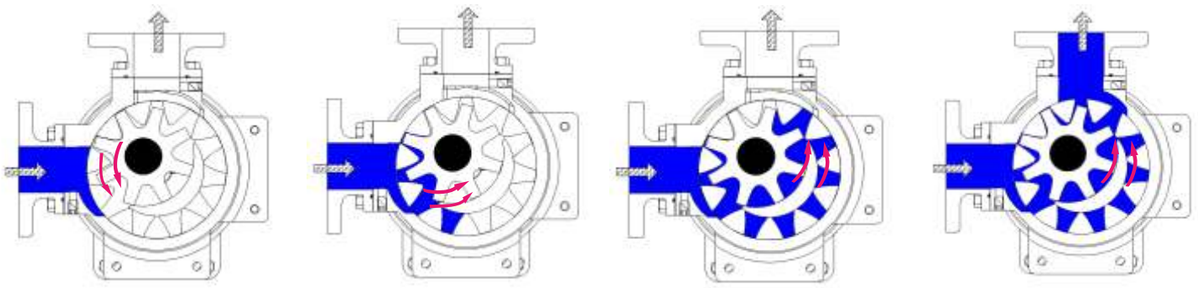
INTERNAL GEAR PUMP WORKING

Internal gear pump is a simple pump as the name suggests “Gear within a Gear”. Internal gear pumps are energy efficient, self priming, positive displacement rotary pumps.

When the pump shaft rotates, the fluid from pump inlet fills the gaps/spaces between the teeth of two gears i.e. rotor & idler according to the rotation.

Liquid is then transferred in the filled gaps/spaces to the discharge side/pump outlet. The walls of the pump casing & crescent create a seal that separates pump inlet from pump outlet.

The rotor & idler mesh & liquid is pushed out towards pump outlet. (Ref. figure 1-4)



1 2 3 4

UNIVERSAL SERIES

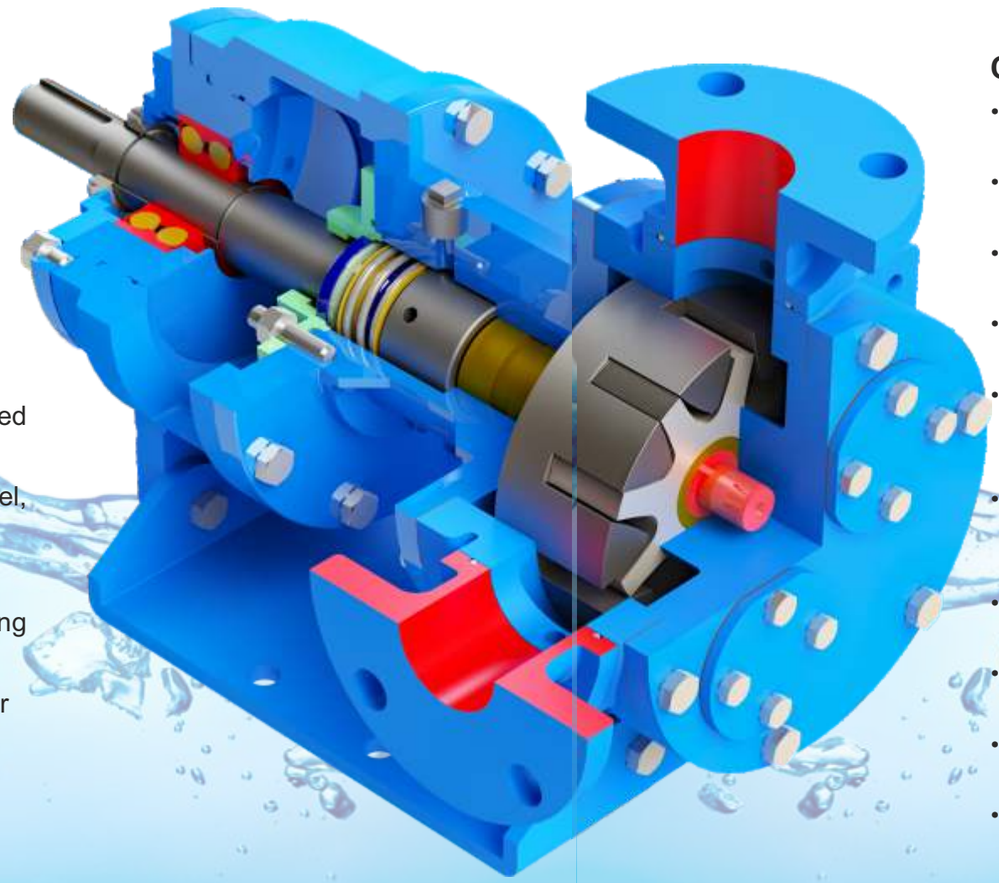
SPECIFICATIONS:-

- Maximum Flow 1600GPM (364M3/HR).
- Pressure upto: 14 bar (203psig)
- Connections size: 1.5" to 10”
- Temperature upto: -85°C to +325°C (-121°F to 617°F)
- Viscosity upto: 11,55,000 SSU (250,000cSt).

  ***With special construction**
- Port Type: Threaded Port & Flange

FEATURES:-

- Reliable, tough and better metallurgy ductile iron gears.
- Field convertible to various end connections threaded NPT/BSP & Flanged ANSI/DIN.
- Material of Construction: Cast Iron, Ductile Iron, Cast Steel, Stainless Steel and Alloy 20.
- Options of casings with 90° or 180° inline ports.
- Jacketed options for head covers and seal housing available with hot water, steam, heating fluid.
- Electrical heating as an option with temperature controller



ADVANTAGES:-

- TUFFGEAR® pumps are robust in design, built with better wear resistant materials to last longer.
- TUFFGEAR® pumps have higher diameter shaft to handle deflections
- TUFFGEAR® pumps are truly universal, back pullout pumps to adapt to various sealing arrangements & types. Only interchanging & addition of few parts and these pumps can be used for most challenging & demanding applications.
- Pumps are bidirectional with non-pulsating flow & low shear.
- Pressure relief valve available, to safe guard pumps & systems against over pressurizing.
- Low NPSH required, can be self priming & can handle liquid & gaseous mixtures.
- According to fluid viscosity & temperature pump clearance can be changed between idler, rotor & casing.
- End clearance can be adjusted by rotating bearing housing in bearing carrier.

BACK PULLOUT DESIGN

SEALING OPTIONS

Metal Bellow Seal

Cartridge-Seal

Packing

Single Mechanical Seal

Lip-Seal

Double Mechanical Seal

COMPONENTS:-

- Pump housing: Cast Iron, ASTM A48, Class35B, Steel ASTM A216, Class WCB, Stainless Steel ASTM A 743, Grade CF8M.
- Head Cover: Cast Iron, ASTM A48, Class35B, Steel ASTM A216, Class WCB, Stainless Steel ASTM A 743, Grade CF8M.
- Pressure Relief Valve: Cast Iron, ASTM A48, Class35B, Steel ASTM A216, Class WCB, Stainless Steel ASTM A 743, Grade CF8M.
- Rotor Shaft: Steel, ASTM A108, Grade 1045, SS316, Duplex 2205, steel,17-4PH.
- Rotor: Ductile Iron, ASTM A536, Grade 60-40-18, Cast Iron, ASTM A48, Class 35B & Steel ASTM A148, Grade 80-40, Stainless Steel ASTM A 743, Grade CF8M, Duplex 2205 steel.
- Idler: Ductile Iron ASTM A536 Grade 80-55-06 & Cast Iron, ASTM A48, Class 35B, Stainless Steel ASTM A 743, Grade CF8M, Duplex 2205 steel.
- Idler Pin: Hardened Steel, ASTM A108, Grade 1045, steel, ASTM A148, Grade 80-40, SS316, Duplex 2205, steel 17-4PH.
- Idler Bushing: Carbon Graphite, Bronze ASTM B584 (B505), Alloy C93700, Tungsten Carbide, Ceramic, etc.
- Sealing Options: Gland Packing, Rubber Bellow Seal, Metal Bellow Seal & Cartridge Seal. Double Seal & Single Seal.
- Elastomer Option: EPDM, FKM, PTFE, Kalrez, Perflouro Elastomer, etc.

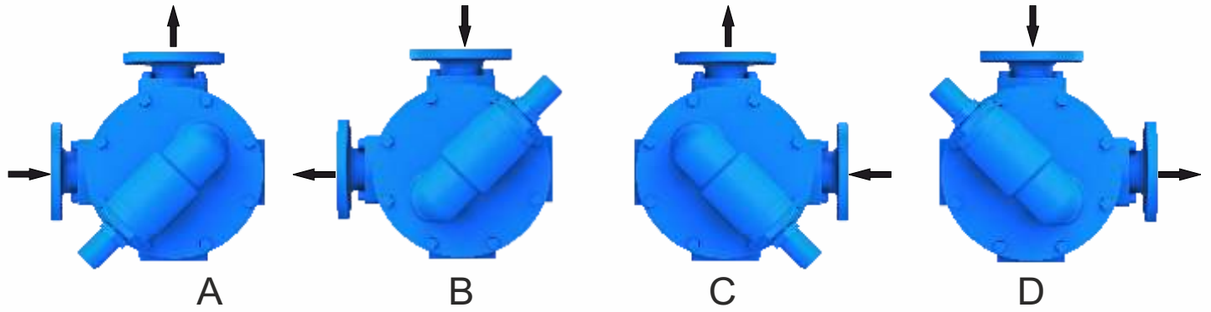
DOC. NO.: CAT/IGP/2223/R01

TUFFGEAR®

UNIVERSAL SERIES

APPLICATIONS:-

- **Chemical Process industry**: solvents, acids, alkalis, alcohols, pharmaceuticals, isocyanate, polyol, sodium silicate, biocides, herbicides, urea.
- **Petroleum Products**: LPG, benzene, gasoline, diesel fuel, fuel oil, lubricating oil, additives, crude oil, grease, motor oil, turbine oil, kerosene, glycol, biodiesel, waste oil.
- **Soap and Detergents**: Surfactants, liquid detergents, soap, perfume, paraffin wax, neat soap and LABSA.
- **Adhesives**: Glue, epoxy resins, adhesives, polymers.
- **Paints and Inks**: Paints, primers, enamel, solvents, stains, varnish, printing ink, resins, pigments.
- **Construction Chemicals**: Bitumen, tar, asphalt, heat transfer liquids, concrete adhesives.
- **Food & Beverages:** Molasses, chocolate, cocoa butter, glucose, animal feed, vegetable oils, fat, soybean oil, shortening lard, margarine, malt, honey, sugar syrup, corn syrup, glycerin.
- **Pulp & Paper:** Starch, clay coatings, tall oil, black liquor, sulphate soap, pitch fuel/oil, caustic soda, lignin, turpentine, resin



MOUNTING OPTIONS

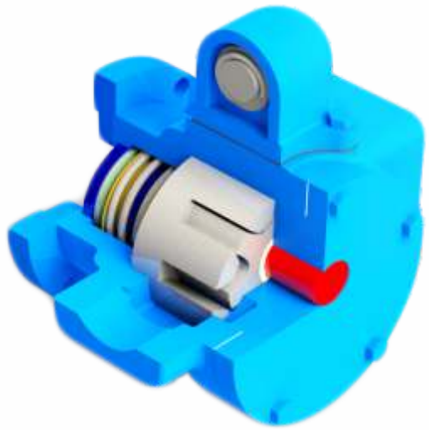
DOC. NO.: CAT/IGP/2223/R01

TUFFGEAR®

MONO BLOCK SERIES

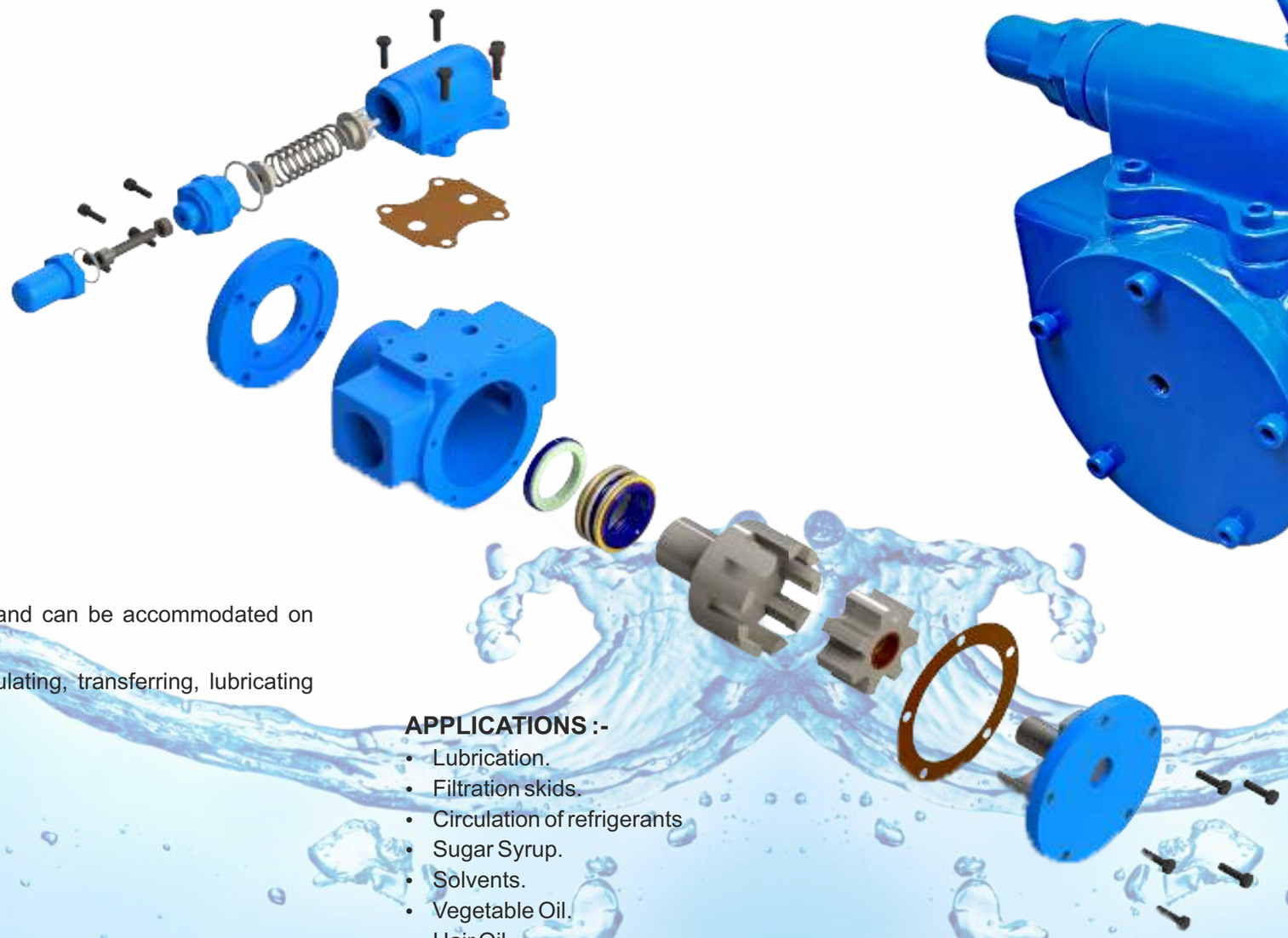
SPECIFICATIONS:-

- Maximum Flow 30GPM (6.85 M3/HR)
- Pressure upto : 7 Bar (101psig)
- Connections Size : 1" to 1.5"
- Temperature Range: -25°C to +175°C (-13° F to +347°F)
- Viscosity upto : 2660550 SSU (550cSt)
- Port Type : Threaded



FEATURES :-

- Simple and compact for easy mounting.
- Closed coupled, no coupling, no base plate.
- Light weight.
- Positive smooth flow.
- Standard with mechanical seals.
- Self priming pumps.
- Available in Cast Iron & SS316 housing.
- End connections threaded NPT/BSP.
- Same pump can adapt different motor frame with few interchangeable parts.



ADVANTAGES :-

- Requires less space and can be accommodated on compact skids.
- Ideal for filtering, circulating, transferring, lubricating and booster services.
- Low cost pumps.
- Short deliveries.

APPLICATIONS :-

- Lubrication.
- Filtration skids.
- Circulation of refrigerants
- Sugar Syrup.
- Solvents.
- Vegetable Oil.
- Hair Oil.
- Citric Acid.
- Acetic Acid.

COMPONENTS:-

- Pump housing: Cast Iron, Stainless Steel, ASTM A743, Grade CF8M
- Head Cover: Cast Iron, Stainless Steel, ASTM A743, Grade CF8M
- Rotor: Ductile Iron, Stainless Steel, ASTM A276, Type XM-19 or 316
- Idler: Steel & Powdered Metal, 770 Stainless Steel Alloy
- Idler Bushing: Bronze and Carbon Graphite.
- Sealing Options: Mechanical Seal Buna-N, FKM

DOC. NO.: CAT/IGP/2223/R01

TUFFGEAR®

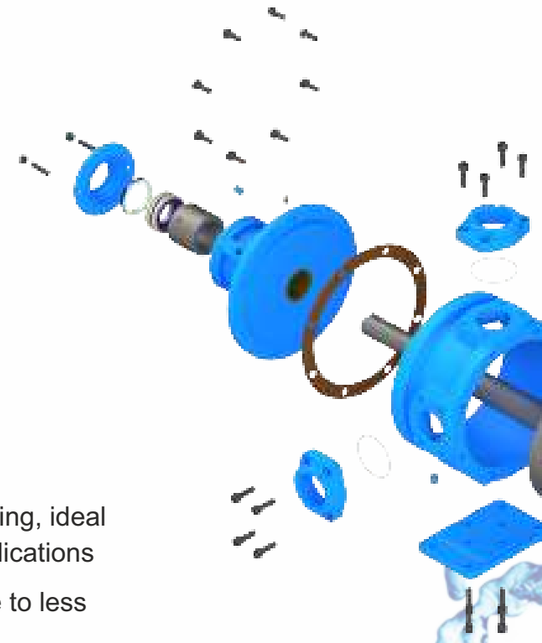
GENERAL SERIES

SPECIFICATIONS:-

- Maximum Flow 200GPM (45M3/HR)
- Pressure upto: 17 Bar (247psig)
- Connections Size: 1/4" to 3”
- Temperature Range: -50°C to +230°C (-58°F to +446°F)
- Viscosity upto: 250000SSU (55000 cSt)
- *** With Special constructions**
- Port Type: Threaded & Flange Port

Features:-

- Rotatable Casing
- Modular Design
- Simple in Construction
- True Back Pullout
- Option with Jacketing
- Pressure Relief Valve available
- Field Replaceable Ports
- Optional External Bearing with pillow block support available
- Cost Effective
- Easy to assemble
- Easy to repair



APPLICATIONS:-

- All varieties of refined fuels & lubricants
- Adhesives
- Resins & polymers
- Alcohols & solvents
- Polyurethane foam
- Edible Oils & Vegetable Oil
- Paint, inks & pigments
- Soaps & Surfactants
- Non-Corrosive Chemicals
- Basic Petrochemicals
- Soaps, Detergents & Surfactants
- Acids & Caustics
- Water-based Liquids

ADVANTAGES:-

- Simple design means easy handling, ideal for medium and low intensity applications
- Less wear, less maintenance due to less number of moving parts
- Various sealing options for various type of application
- Unique clearance profile results in good negative suction capabilities
- Extra support for the shaft with pillow block bearing

COMPONENTS:-

- Pump housing: Cast Iron, ASTM A48, Class35B
- Head Cover: Cast Iron, ASTM A48, Class35B
- Pressure Relief Valve: Cast Iron, ASTM A48, Class35B
- Rotor Shaft: Hardened Steel, ASTM A108, Grade 1045
- Rotor: Ductile Iron, ASTM A536, Grade 60-40-18 & Steel ASTM A148, Grade 80-40
- Idler: Steel ASTM A148, Grade 80-40 & Ductile Iron ASTM A536 Grade 60-40-18
- Idler Pin: Hardened Steel, ASTM A108, Grade 1045 & Nitralloy & Steel
- Idler Bushing: Carbon Graphite & Bronze
- Sealing Options: Mechanical Seal & Gland Packing
- Elastomer Option: Buna N used in Mechanical Seal

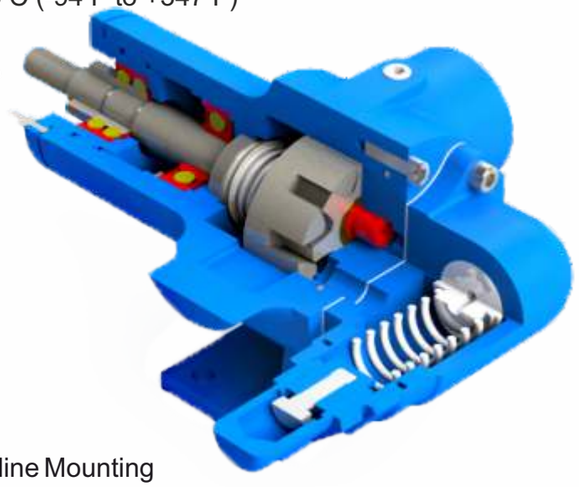
DOC. NO.: CAT/IGP/2223/R01

TUFFGEAR®

MOTOR SERIES

SPECIFICATIONS:-

- Capacity up to: 350GPM (80M3/HR)
- Head up to: 17 Bar (247psig)
- Connections Size: 1" to 4”
- Temperature Range: -70°C to +175°C (-94°F to +347°F)
- Viscosity up to: 5500 cst
- Port Type: Threaded Port & Flange

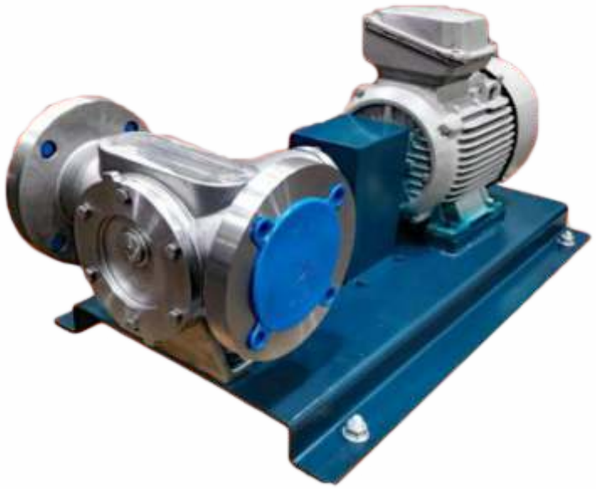


FEATURES:-

- Sealed for Life Double Bearings
- Option for Horizontal and Vertical Inline Mounting
- Lubricated Bush
- Behind the Rotor Seals
- Enlarge Suction and Discharge Ports
- With Clearance adjuster
- Larger diameter Shaft
- Integral PRV Design

APPLICATIONS:-

- Refined Fuels
- Lube Oils
- Machine Lubrication
- Mobile Pump Carts
- Glycols
- Pipeline Sampling
- Isocyanate
- Compressor Lubrication
- Water-Based Liquids
- Acids & Caustics
- Additives
- General Chemicals
- Vegetable Oil & Palm Oil
- Solvents



ADVANTAGES :-

- Less frequent lubricant fills
- Freedom of installation with mounting options.
- Less wear in pin and bush, less frequent maintenance.
- No contact of Product with bearing.
- Anti cavitation enlarge suction and discharge ports
- Adjustable clearance pump
- Large diameter shaft-higher load and torques
- Integral PRV takes care of the over pressurisation

COMPONENTS:-

- Pump Housing: Cast Iron, ASTMA48 Class 35B, Steel, ASTM A216, Grade WCB, Stainless Steel ASTM A743, Grade CF8M
- Head Cover: Cast Iron, ASTM A48 Class 35B, Steel, ASTM A216, Grade WCB, Stainless Steel ASTM A743, Grade CF8M
- Pressure Relief Valve: Cast Iron, ASTM A48 Class 35B, Steel Externals, ASTM A216, Grade WCB, Stainless Steel ASTM A743, Grade CF8M
- Rotor Shaft: Steel, ASTM A108, Grade 1045, Stainless Steel, ASTM A276 Type XM-19 or 316.
- Rotor: Ductile Iron, ASTM A536 Grade 60-40-18, Stainless Steel, ASTM A743, Grade CF8M, Case Hardened, Stainless Steel, ASTM A276 Type XM-19 or 316
- Idler: Ductile Iron, ASTM A536 Grade 80-55-06 & hardened Steel ASTM A148, Grade 80-40, 770 Stainless Steel Alloy
- Idler Pin: Hardened Steel, ASTM A108, Hard coated Stainless Steel, ASTM A276,Type 316, Colmonoy # 6 Coated
- Idler Bushing: Carbon Graphite
- Sealing Options: Carbon vs Silicon Carbide, Silicon Carbide vs Silicon Carbide
- Elastomers Option: FKM, PTFE, Fluorosilicone
- Antifriction Bearings: Steel with Buna Seals

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