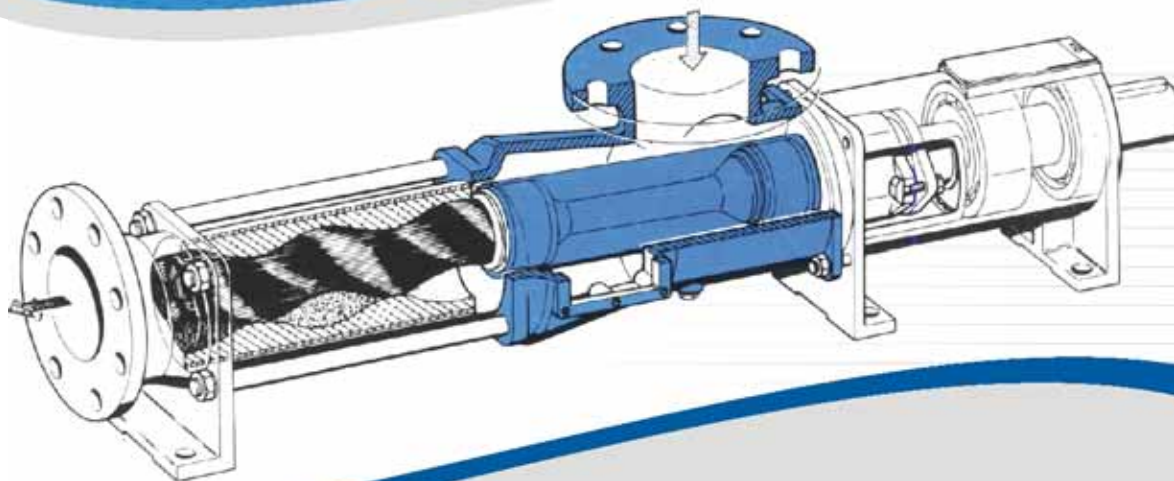




PUMPS

# UT PUMPS & SYSTEMS PVT. LTD.



## Eccentric Helical Rotor Pump TYPE EH Applications Industries

For Transfer of Gritty Mine Water, Cement & Clay Slurries, Viscous oil, Cellulose, Viscous Paper Pulp, Ceramic & Abrasive Slurries, Phosphoric Acid Slurries, Sludge, Industrial Waste, Dyes Stuff & Detergent, Paint, Starch, Acid & Alkalis, Chemical Solution, Handling of High or Low Viscous, Neutral or Aggressive Media, with or without Solid or Fibrous Matter.

Agriculture, Building Industry, Chemical Industry, Ship Building, Color & Varnish Factories, Filter Presses, Fish Processing Plant, Oil Mills & Starch Factories, Paper & Pulp industry, Petrochemical Industry, Pharmaceutical Industry, Plastic Industry, Refineries, Sewage & Effluent Treatment Plants, Soap & Fats Industry, Sugar Refineries, Food & Food Processing Plants, Water Treatment Plants.

### Basic Design, Principle of Operation

UTPSL Eccentric Helical Rotor Pumps are Self Priming, Rotary, Valve less Positive Displacement pumps having two pumping elements Rubber Stator and Metallic Rotor. Stator is having helical profile with pitch double to Rotor pitch resulting in cavities, which carry the liquid.

EH pumps are basic design pumps with flange connection usually installed horizontally. Inlet and outlet ports can be interchanged by simply changing direction of rotation of motor. Pumps are suitable for drive by Motor/Engine thro Direct Coupling or V' Belt/Pulley.

**Because of Elastomer Stator, EH pumps are not suitable for dry running.**

### Materials of Construction

Pumps are manufactured in different materials of construction depending on the liquid to be handled. All parts coming in contact with liquid are selected to ensure compatibility.

Wetted casings are available in cast iron, stainless steel, and carbon steel. Rotors are available in stainless steel, carbon steel hard chrome plated or nitrided steel. Stators are available in all types of elastomer material. Option of using sealing material, as gland packing material or mechanical seal is available.

UTPSL pumps are having two special designs Cardon joints complete sealed against liquid.

### Special Features / Advantages

Longer Pitch and smaller diameter of rotor makes UTPSL pumps highly reliable with Small Initial Starting Torque, Higher Mechanical Efficiency, Capability to handle large proportions of solids, Small Radial Thrust, Low Rubbing Velocity, Less Wear, Lower Axial Thrust, Smaller Unbalance, Higher Suction Lift.



# UT PUMPS & SYSTEMS PVT. LTD.



## Eccentric Helical Rotor Pump



### Applications

Paste, Paint, Grease, Adhesives, Thick Paste, Malt Extract, Latex, Viscous Oil, Clear & Corrosive Liquid, Agriculture & Drinking Water, Oily Sludge etc.

### Industries

Agriculture, Beverages, Breweries, Chemical industry, Color & varnish factories, Cosmetic industry, Filter technique, Fish processing plant, Medicinal & mud baths, Oil mills & starch factories, Paper & cellulose industry, Petrochemical industry, Pharmaceutical industry, Refineries, Sewage & clarification techniques, Soap & fats industry, Sugar refineries, Water treatment

### Basic Design, Principle of Operation

UTPSL Eccentric Helical Rotor Pumps are Self Priming, Rotary, Valve less Positive Displacement pumps having two pumping element Rubber Stator and Metallic Rotor. Stator is having helical profile with pitch double to Rotor pitch resulting in cavities, which carry the liquid vertically Mounted. EU pumps are specifically designed for emptying barrels, containers or wells having low or highly viscous media with or without solid or fibrous components. The Drive unit is directly mounted on the pump body and the whole unit can be suspended and lowered in the container or well. Running at low speed, pumps have vibration free operation.

In the Cross-section, stator and rotor contact each other at two points which, viewed axially, are lines of contact or "sealing".

When the rotors turns, this geometry resolves into tandem chamber which are self-contained as also when pumps are stationary.

***Because of Elastomer Stator, EU pumps are not suitable for dry running.***

### Materials of Construction

Pumps are manufactured in different materials of construction depending on the liquid to be handled. All parts in contact with liquid are selected to ensure compatibility.

Wetted casings are available in stainless steel, and carbon steel. Rotors are available in stainless steel, carbon steel hard chrome plated or nitrided steel. Stators are available in all types of elastomer material. Option of using sealing material, as gland packing material or mechanical seal is available.

UTPSL pumps are having two special design Cardon joints completely sealed against liquid.

### Special Features / Advantages

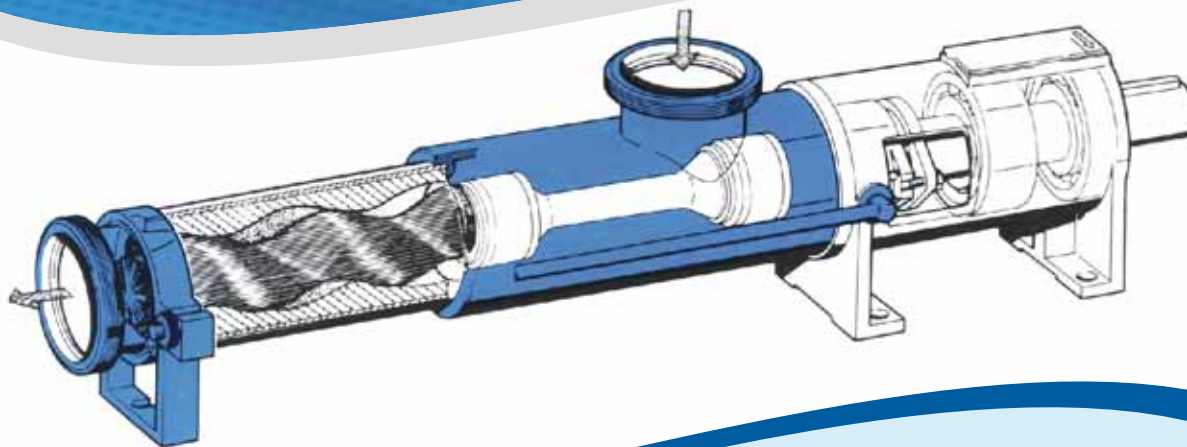
Small Initial Starting Torque, Higher Mechanical Efficiency, Capability to handle large proportions of solids, Less radial thrust, Low rubbing velocity, Less wear, Lower axial thrust, Smaller unbalance, Quieter operation, Mounted directly over the well or container.





PUMPS

# UT PUMPS & SYSTEMS PVT. LTD.



## Quick Cleaning Pump



## Eccentric Helical Rotor Pump

### Applications

For Transfer of Chocolates Mix, Malt Extract, Syrups, Honey, Minced Meat, Infant Food, Jams, Spices, Fresh Cream, Butter, Condensed Milk, Fruit Juices & Pulp, Purees, Jelly, Glucose, Beverages, Beer, Ice-Cream, Vitamins Solution etc.

### Basic Design, Principle of Operation

UTPSL Eccentric Helical Rotor Pumps are Self Priming, Rotary, Valve less Positive Displacement pumps having two pumping element Rubber Stator and Metallic Rotor. Stator is having helical profile with pitch double to Rotor pitch resulting in cavities, which carry the liquid. The basic design of S type pump is a special pump designed with two external tension rods being fastened at the bearing housing to the pump casing. Type "S" means **quick cleaning**, as the complete pump can be disassembled with effortless ease and a biologically complete cleaning of each part is possible. ES types of pumps are ideally suited for Food and Milk Processing industries.

The suction and discharge port is provided with thread pipe connection so that quick disassembly of pipe and hose on suction and discharge side of pumps can be done. Pumps are suitable for drive by Motor/Engine thro Direct Coupling or V' Belt/Pulley.

In the Cross-section, stator and rotor contact each other at two points which, viewed axially, are lines of contact or "sealing".

When the rotors turns, this geometry resolves into tandem chamber which are self-contained as also when pumps are stationary.

**Because of Elastomer Stator, ES pumps are not suitable for dry running.**

### Industries

Food and Food Processing Industry, Beverages, Breweries, Color & Varnish Factories, Confectioneries, Dairy and Dairy Products, Cosmetics, Pharmaceuticals, Oil Mills, Chemical Industry.

### Materials of Construction

Pumps are manufactured specifically to meet modern requirements for maximum hygiene. All parts coming in contact with liquid are fabricated in smooth and fine finish which ensures quick and complete cleaning of pump in least stoppage time.

Wetted casings are available in rust & acid proof stainless steel. Rotors are available in stainless steel, CrNi steel or hard chrome plated for abrasive materials. Stators are available in special types of elastomer material, which is of food quality. Sealing of hygienic quality materials as gland packing or mechanical seal is available.

UTPSL pumps are having two special design Cardon joints completely sealed against liquid.

### Special Features / Advantages

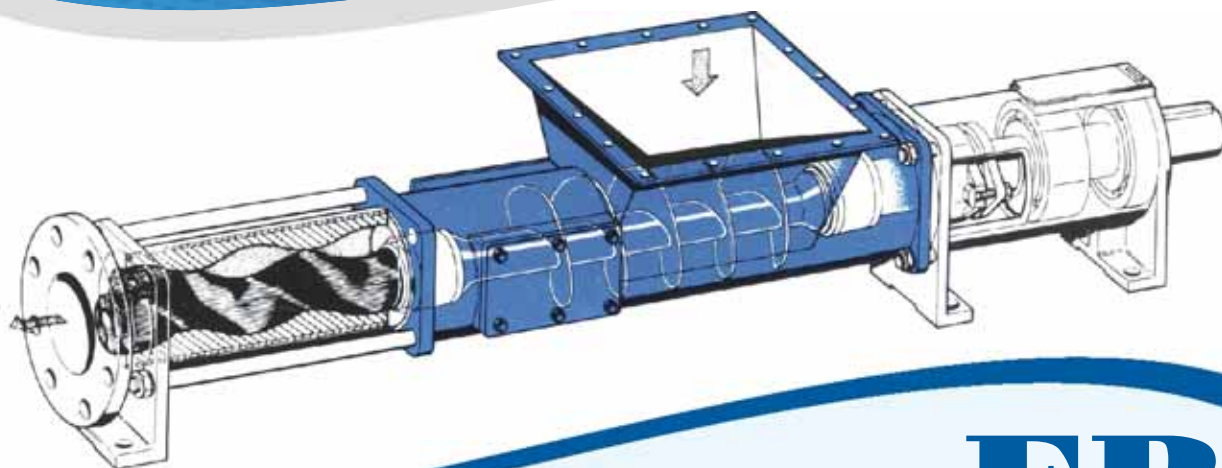
Longer Pitch and smaller diameter of rotor makes UTPSL pumps highly reliable with Small Initial Starting Torque, Higher Mechanical Efficiency, Capability To Handle Large Proportion Of Solids, Small Radial Thrust, Low Rubbing Velocity, Less Wear, Lower Axial Thrust, Smaller Unbalance, Quieter Operation, Quick Cleanable, Disassembled with Effortless Ease.





PUMPS

# UT PUMPS & SYSTEMS PVT. LTD.



## ER

## Eccentric Helical Rotor Pump

### Applications

For Transfer of Thick Paste & Pigments, Cake Mix, Butter, Grease, Waste Asbestos, Fruit Pulp, Petroleum Jelly, Explosive Slurry, Pulp with Low Moisture Content, Sewage Waste and can handle Extremely Viscous, Pasty or Hardly Pump able Media, or Media with a Content of Solid Matter (up to 60% Drying Agent), this range of applications covers all branches of industry etc.

### Basic Design, Principle of Operation

UTPSL Eccentric Helical Rotor Pumps are Self Priming, Rotary, Valve less Positive Displacement pumps having two pumping element Rubber Stator and Metallic Rotor. Stator is having helical profile with pitch double to Rotor pitch resulting in cavities, which carry the liquid.

ER pumps are having special Hopper design Casing and Universal Joint Shaft with conveyor and they are and are suitable for operation with flooded suction condition installed horizontally only. Which pushes medium to pumping elements Pumps are suitable for drive by Motor/Engine thro Direct Coupling or V' Belt/Pulley.

In the Cross-section, stator and rotor contact each other at two points which, viewed axially, are lines of contact or "sealing".

When the rotors turns, this geometry resolves into tandem chamber, which are self-contained, as also when pumps are stationary.

***Because of Elastomer Stator, ER pumps are not suitable for dry running.***

### Industries

Building Industry, Ship Building, Starch Factories, Paper & Cellulose Industry, Pharmaceutical Industry, Plastic Industry, Sewage & Clarification Techniques, Soap & Fats Industry, Sugar Refineries, Water Treatment Plants, Food & Food Processing Industries and many others.

### Materials of Construction

Pumps are manufactured in different materials of construction depending on the liquid to be handled. All parts coming in contact with liquid are selected to ensure compatibility.

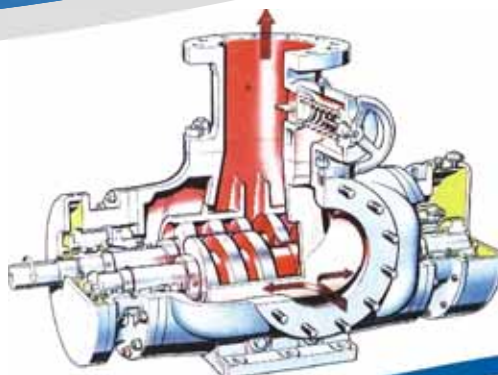
Wetted casings are available in stainless steel, and carbon steel. Rotors are available in stainless steel, carbon steel hard chrome plated or nitrided steel. Stators are available in all types of elastomer material. Option of using sealing materials as gland packing or mechanical seal is available.

For hygienic application all part can be constructed in stainless steel material with a special type of non-contamination stator.

UTPSL pumps are having two special design Cardon joints completely sealed against liquid.

### Special Features / Advantages

Longer Pitch and smaller diameter of rotor makes UTPSL pumps highly reliable with Small Initial Starting Torque, Higher Mechanical Efficiency, Capability to handle large proportions of solids, Open Hopper at Inlet with large fitment at bottom, Low radial thrust, Low rubbing velocity, Less wear, Lower axial thrust, Smaller unbalance, Quieter operation, Higher Suction Lift



## TWIN SCREW PUMPS

### Applications

Loading / Unloading, Transfer and Process application for handling Acids, Bitumen, Crude oil, Chemical & Corrosive Fluids, Dairy products, Gasoline, Glue, Hydrocarbons, Hydraulic controls, Mineral oil, Molasses, Marine fuel oil, Sea water, Vegetable oil, Very Low & Highly Viscous Liquid, Lubricating or Non-lubricating, Liquid with Entrained Gases and many more.

### Basic Design, Principle of Operation

UTPSL Twin Screw Pumps are self-priming, double ended positive displacement pumps with external timing gears and bearings. As the screws rotate, cavities are formed between the individual screws. These hold a given volume of fluid, moving it axially as the screws rotate. The portion of the fluid that enters the pump is diverted to the left or right and then moved forward from left to center and from right to center. At the center the two flow paths rejoin and leave the pump through the discharge flange.

The screws do not mesh with each other. The drive to driven screw is transmitted by means of timing gears. The design provides complete axial balancing of the rotating elements and eliminates all metal-to-metal contact within the pump. This feature makes them ideally suited for dry running and can also be operated at low rpm.

They can handle all types of lubricating/non-lubricating abrasive & corrosive liquids with extremely low and high viscosity.

### Industries

Color & varnish factories, Chemical industry, Cosmetic industries, Food industries, Mineral oil industries, Oil burner, Oil mills & starch factories, Paper & pulp industry, Petrochemical industry, Refineries, Ship building, Soap & fats industry, Storage tank, Transmission and Gear industries and many more.

### Special Features / Advantages

- ★ Separate Screw and Shaft Assembly design offer many advantages.
- ★ Extremely good suction capability
- ★ Compact Design and Rugged construction.
- ★ Various Combinations Of Materials available
- ★ Partial/Full Heating Jacket Available In Various Designs
- ★ Different Sealing Arrangements Possible
- ★ Low NPSH Requirement
- ★ Casing available in Cast construction / Casing in Fabricated Design with replaceable linear.
- ★ Low maintenance cost

### Materials of Construction

UTPSL Twin Screw Pumps are available in different combination of material to suit specific medium requirements. Twin Screw Pumps can be supplied with steel, cast iron, bronze or stainless steel body and screw of stainless steel, bronze or alloy steel. The pump is equipped with in built balance pressure relief valve for safety. Heating of casing by heating foot or steam jacketed. Sealing arrangement by gland packing, single acting mechanical seal or special mechanical seals.

## Twin Screw Pumps are manufactured in two basic design: -

### Short Shaft Design

- For handling liquids at temp < 120° C
- With Single Acting Mechanical Seals.

### Long Shaft Design

- For handling liquid at temp above 120° C
- With special sealing arrangement viz. Gland packing,
- Double Mechanical Seal with Flushing/Quenching cartridge type or arrangement..

## RANGE

### UTPSL Twin Screw Pumps are available in two ranges

#### Range W:

Horizontal pumps with lateral suction flange, delivery flange directed to the top. The pump casings are symmetrically design so that the suction line can be connected on the left or right side by simply turning the casing. Mostly pumps are installed in horizontal position on a base frame directly connected to motor by a flexible coupling.

#### Range V:

These are called IN-LINE-PUMP and are preferably installed vertically. Labyrinth packing with splash rings is used to avoid leakage. A flexible coupling connects the pumps and motor to each other or by motor lantern



UTPSL Screw Pumps may be used with all types of drive, i.e. electric motor, Internal combustion engine, Steam turbines etc and can be stationarily or portably used.

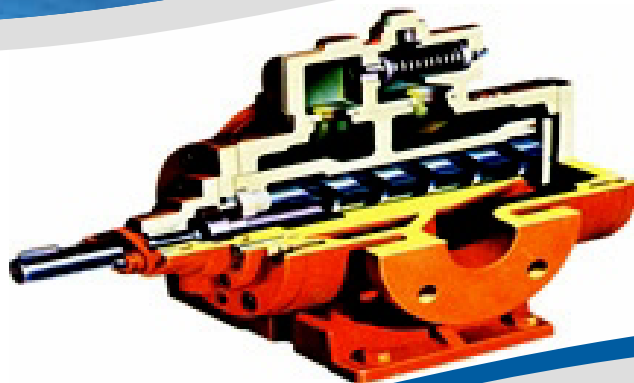
## Performance

Size	Capacity m <sup>3</sup> /hr	Pumping Pressure in (bars)
2	9	25
3	17.4	30
4	40	40
5	67.5	40
6	120	40
7	285	40
7T	455	50

Speed max.	3000 RPM
Temp.	Normal up to 180° C Max. Up to 450° C
Viscosity	40,000 mm <sup>2</sup> / S

For further details, please contact

**UT PUMPS & SYSTEMS PVT. LTD.**



## TRIPPLE SCREW PUMPS

### Applications

Loading / Unloading, Transfer and Pressurizing application for handling Bitumen, Crude oil, Hydrocarbons, Mineral oil, Marine fuel oil.

Ideally situated for Hydraulic controls, Circulating & pressure rising, Power packs, Turbine Governing systems and many more.

### Industries

Centralized lubrication, Mineral oil industries, Oil burner, Oil mills & starch factories, Power plants, Petrochemical industry, Refineries, Storage tank, Ship building, Transmission and Gear industries and many more.

### Special Features / Advantages

- Internal or External Bearing Design Available.
- Turbulence free pulsation less flow
- Pumps suitable for low NPSH
- Replaceable Cartridge Construction
- Noiseless operation
- Low Maintenance
- Long life
- Orientation of inlet / outlet to meet specific requirement
- Variety Of Casing Material, Sealing Arrangement, and Mounting Arrangement is possible.
- Drive by direct coupling thro Motor or Engine.
- Heating of casing for handling liquid at high temperature.

### Basic Design, Principle of Operation

UTPSL Triple Screw Pumps are self-priming pumps with external or internal bearing, available in horizontal or vertical constructions. The pumping element of the Triple Screw Pumps consists of three screws, the main or drive screw and the two driven screws, which mesh together within the pump casing and form, transfer chambers. When turning the main screw the chambers move continuously and axially from the suction to the discharge side according to the pitch of the screws. The volume of the several chambers is constant; hence a constant flow is obtained over the length of the pumping elements that also ensures of getting high suction lift.

The resulting axial thrust during operation for the main screw is completely balanced. The driven screw is led by bearings or balancing bushes in the discharge area. Due to suction pressure in the seal housing, i.e., in front of compensating pistons and bushes, the pressure is balanced.

The screws are in contact with each other as well as with the surrounding casing. Subsequently, the medium must always have certain lubricating properties. The normal force between the component parts is directly proportional to the viscosity of medium. The maximum pressure, attained with such pumps, also depends directly on the corresponding viscosity. The pumps are provided with a Built In Relief Valve, which allows excess pressure to be re-circulated to suction chamber. Alternatively a Return Valve is provided which allows excess pressure to return to a separate tank.



## TYPE PD RANGE

The entire pump consists of Casing with Replaceable Cartridge Assembly, but for specific applications triple screw pumps are available in different design.

### PDH

- Horizontal Foot Mounted Casings with directly coupled motor through flexible coupling.
- Lateral suction and discharge flange, with option of reversal position by 180°.

### PDS

- Space saving design
- Vertical Pedestal Mounting with motor directly mounted on casing flange.
- Lateral suction and discharge flange, with option of reversal position by 180°.

### PDF

- Bell mounted Casings can be installed horizontally or vertically.
- Lateral suction and discharge flange, with option of reversal position by 180°.

### PDT

- Space saving special design for direct mounted on vertical tanks.
- Suction end submerged directly in liquid and discharge port out of the tank.
- Ideally suitable application for governing system of hydro turbine.

### PDE

- Complete cartridge pump ready for operation, to be directly mounted in plants or machines.
- Pump can be used without an external casings.



### Performance

Size	Capacity m <sup>3</sup> /hr	MAX. PUMPING PRESSURE (bars) at variable pitch		
		G (LARGE PITCH)	H (NORMAL PITCH)	K (SMALL PITCH)
25	1.58	75	90	120
32	3.30	75	90	120
38	5.55	75	90	120
45	9	75	90	120
52	14.25	75	90	120
60	22.2	75	90	120
70	35.7	75	90	120
80	53.4	75	90	120
90	75.6	75	90	120
100	103.2	75	90	120
110	138	75	90	120

AT 1450 RPM &  
VISC. = 37 mm<sup>2</sup> / SEC  
Viscosity 2-2000 mm<sup>2</sup> / Sec  
Normal Temp 180°

For further details, please contact

## UT PUMPS & SYSTEMS PVT. LTD.

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