



## All Types Of ROTARY GEAR PUMP

### UA - SERIES

- **Compact** • **Efficient**
- **Reliable** • **Easy Maintainable**
- **Easy Cleanable**

For handling corrosive, abrasive, hygienic viscous liquid for transfer, loading-unloading & pressurising applications.



### Types of Rotary Gear Pump

- Horizontal foot Mounted/ vertical- horizontal flange mounted ( with ded or flange connection)
- Internal / External Bearings Design  
Streams jacketed / Construction
- Roto piston pumps
- (Reversible direction pump for duty & machine tools.)  
-With or -Without Built-in Relief Valve



## ROTARY GEAR PUMP

### ABOUT US :

The simplified in and around flow design of UNIQUE Rotary pump permits easy handling of wide range of Viscosities and minimizes internal loss. Unique rotary pump is engineered for superior performance and longer life.

### LONG LIFE :

Hardened Gears provide a longer gear life and quiet pulsation free flow. the helical configuration offers greatest face area for strength. Precision machined teeth engage gradually preventing trapping of liquid which absorbs shocks. Full hydraulic balance eliminates need for specialized balancing devices.

### MINIMUM DEFLECTION :

Bearings are internal, set close to the load. this short bearing span, combined with a short, stocky shaft, handles high pressure with minimum deflection. Force - feed lubrication by the pumped liquid results in less leakage and no contamination by the lubricant and eliminates the need for a separate lubrication system.

### TYPE OF PUMPS :

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Roto piston pumps  
(Reversible direction pump for duty & machine tools.) -With or -Without Built-in Relief Valve

### RANGE :

CAPACITIES : 2to6000LPM  
PRESSURE : UPTO 70 kg / cm  
VISCOSITIES : UPTO 1,00,000 CST  
SPEED : 50 to 1500 R.PM

### APPLICATION :

- Loading & Unloading
- Agitation
- Fuel Firing
- Lubrication
- Spray through Nozzle
- Transfer
- Circulation
- Mixers

### OTHER PRODUCTS :

- Screw Pumps, Gear Boxes
- Chemical Pumps & Mech. Seals

### INDUSTRIES :

- Steel Plants
- Petrochemical & Refinery
- Pulp & Paper
- Fertilizers
- Edible Oil
- Cement Mills
- Chemical & Pharmaceutic
- Thermal Power Stations
- Food & Beverages
- Oil Depot
- Sugar & Textiles

### METALLURGY :

Body & Covers : Mild Steel  
Stainless Steel  
Gun Metal  
Cast Iron  
Bronze  
Super Alloys  
Shaft & Gears : Carbon Steel  
Stainless Steel  
(Hardened and Profile ground gears if necessary)  
Shaft Sealing : Oil Seal  
Mechanical Seal  
Gland Packing  
Bearing : Steel Antifriction  
Bush Bearings  
(G.M., Bronze, Carbon, Teflon)



Steam Jacketed  
Design



External Bearing  
Design

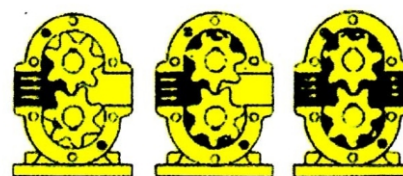


Trolley  
Mounted

Model No.	Suction X Delivery Size	Capacity Range LPM	Std. Pump Speed RPM
UA- 5	3/8" X 3/8"	2 To 5	1440
UA- 10	1/2" X 1/2"	6 To 20	1500
UA- 15	3/4" X 3/4"	21 To 30	1500
UA- 15 SP	3/4" X 3/4"	31 To 50	1500
UA- 20	1" X 1"	51 To 75	1500
UA- 25	1 1/2" X 1 1/2"	76 To 100	1500
UA-25 SP	1 1/2" X 1 1/2"	101 To 160	1500
UA- 50	2" X 2"	161 To 225	1500
UA- 50 SP	2 1/2" X 2 1/2"	226 To 350	1500
UA- 100	3" X 3"	351 To 550	1500
UA- 100 SP	3" X 3"	351 To 750	1500
UA- 200	4" X 4"	751 To 1200	1500
UA- 400	4" X 4"	1201 To 1800	960
UA- 600	6" X 6"	1801 To 2500	960
UA- 800	8" X 8"	2501 To 6000	720

Viscosities Range In Cst	Pump Speed (RPM)
UP To 400	1440
400 To 1,000	960
1,000 To 3,500	720
3,500 To 10,000	500
10,000 To 50,000	200-300
50,000 & Above	Please Consult

- This table is applicable generally for SAE- 40 Oil
- Pump Capacity is directly proportional to speed
- If pumped fluid is poor lubricant, pump is operated at lower Speed, ranging from 200 to 1000 rpm depending on its property
- Due to constant improvement in design, specification are Subject to change without notice.



Working of the Pump

## OPTIONS :

Without Pressure Relief Valve : Type UA

With Pressure Relief Valve : Type UAV

Mechanical Seal : Type UAM

Flange Mounted : Type UAF

External Bearing : Type UAX.

Steam jacketed Type : Type UASJ.

Higher Pressure : UAHP.

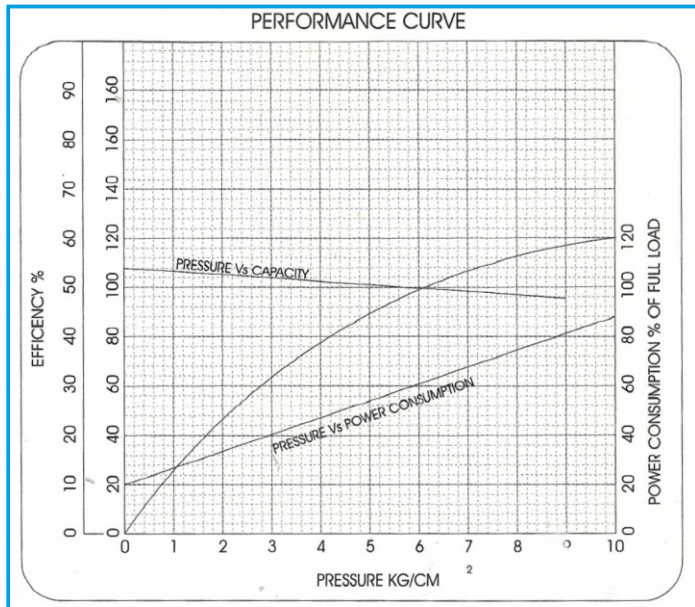
Stainless Steel : UAS & UASS.

Custom Designed Pumps :

- (Protect system from discharge line obstruction)
- Positive Sealing/ Minimum Leakage. (Packed pump can be retrofitted.)
- Provide vertical mounting facility.
- It is an externally lubricated pump recommended for use where the liquid to be transferred does not contain any lubricating properties.
- Specially suitable for liquids which solidify or become highly viscous at room temperature like LSHS, FO, HFO, HHS, Glucose, Soap stock, High viscosity Oils, Wax, Grease, Coal Tar, Bitumen, Adhesives etc.
- Steams circulating in the pump body to heat the liquid being pumped.
- By providing highly precision profile ground gear high pressure up to 70 kg/ cm can be developed.
- For food product & liquid which react with CI & other maintenance
- To meet special requirements.



## PERFORMANCE CURVE OF ROTARY GEAR PUMP :



Input B.H.P. of pump can be calculated the following formula :

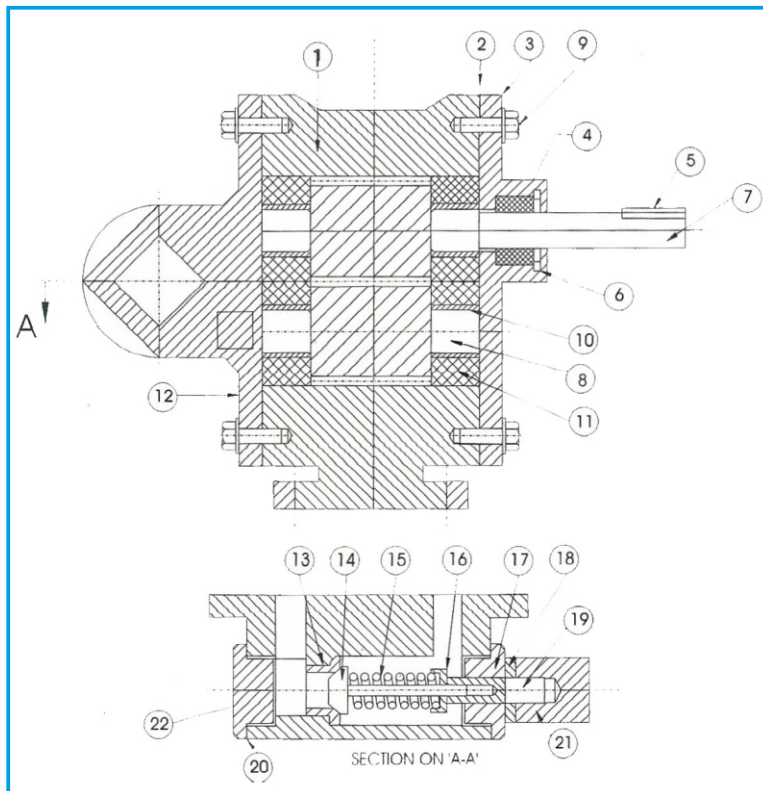
$$\text{BHP (Rate)} = \frac{\text{WORK DONE}}{\text{CONSTANT X EFFICIENT}}$$

$$Q = \frac{\text{Capacity in m}^3 / \text{hr} \times \text{Pressure in kg/cm}^2}{27 (\text{Hydraulic Constant}) \times \text{Efficiency}}$$

## Relief Valve Operation :

Built in pressure relief valve is provided in pumps to operate at higher than rated pressure i.e. it starts operating at 1kg/cm higher than rated pressure and fully opens at 20% higher than rated pressure, taking maximum 30% higher power than rated power.

## CROSS SECTION ROTARY GEAR PUMP :



22	Plug at Delivery Side	1
21	Cap Nut	1
20	Packing	2
19	Relief valve Adjusting Stud	1
18	Lock Nut	1
17	Plug at Suction Side	1
16	Spring Cover	1
15	Spring	1
14	valve	1
13	valve Seat	1
12	Back Cover	1
11	Wear Plate	4
10	Sleeve Bush/ Bearing	4
9	Bolt with spring Washer	8
8	Driven shaft with gear	1
7	Driven shaft with gear	1
6	Criclip	1
5	key	1
4	Oil Seal	2
3	Front cover	1
2	Packing	-
1	main Body	1
Part no.	Description	Qty.

# UNIQUE PUMP SYSTEMS

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