

Roto *flow*®

PROGRESSIVE CAVITY PUMPS

...moving fluids positively



ROBUST & COMPACT DESIGN
PROVEN TWO PIN CARDAN JOINT
LOWER MAINTENANCE COST



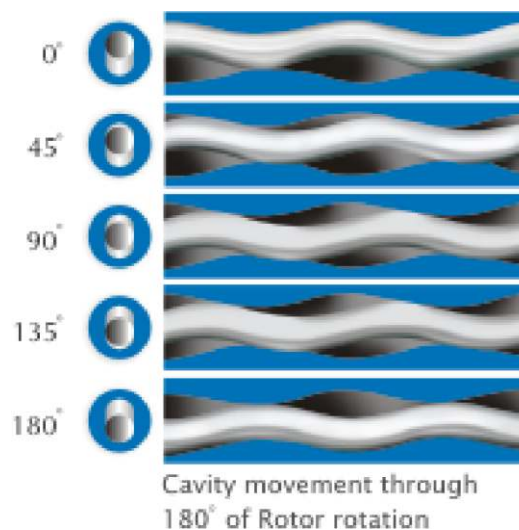
INDUSTRIAL RANGE OF PUMPS



Progressive Cavity Pumping Principle

The pumping element comprises of a precision machined single external helix metallic rotor and a double internal helix elastomer stator. Due to special profile of Rotor and Stator, a sealing line is formed along the axis of the rotor, which is maintained at static or dynamic condition.

As the rotor turns within the stator, these cavities progress from suction to discharge end of the pump carrying the fluid.



Distinctive design features & benefits

- POSITIVE DISPLACEMENT** : Because of single rotating element progressing cavities are generated which delivers uniform, metered & non-pulsating flow. Head developed is independent of speed whereas capacity is proportionate to speed.
- SELF-PRIMING** : Inherently self-priming, can work on snore & does not require foot valve.
- NON-CLOGGING** : Handles solids in suspension or mixture containing high percentage of solids.
- LOW NPSH REQUIREMENT** : Suction lift capability up to 9.5 mwc & effective even in high vacuum conditions.
- LOW INTERNAL VELOCITY** : Minimum degradation of shear-sensitive media, can handle highly viscous materials having pseudo-plastic characteristics.
- REVERSIBLE** : Due to reversible rotation capabilities, pump performs with equal efficiency in either direction.
- SILENT RUNNING** : Rotor turns inside a resilient stator & thus generates little noise.
- SEPARATE BEARING HOUSING** : Fluids can be pumped with no contamination.

International Quality



Continuous investments in precision measuring instruments, state-of-the-art testing facility and a dedicated team of engineers are testimony to Roto's commitment to maintain and constantly upgrade the quality of its products. The manufacturing units are certified for conformance to the ISO 9001-2000 quality surveillance systems.



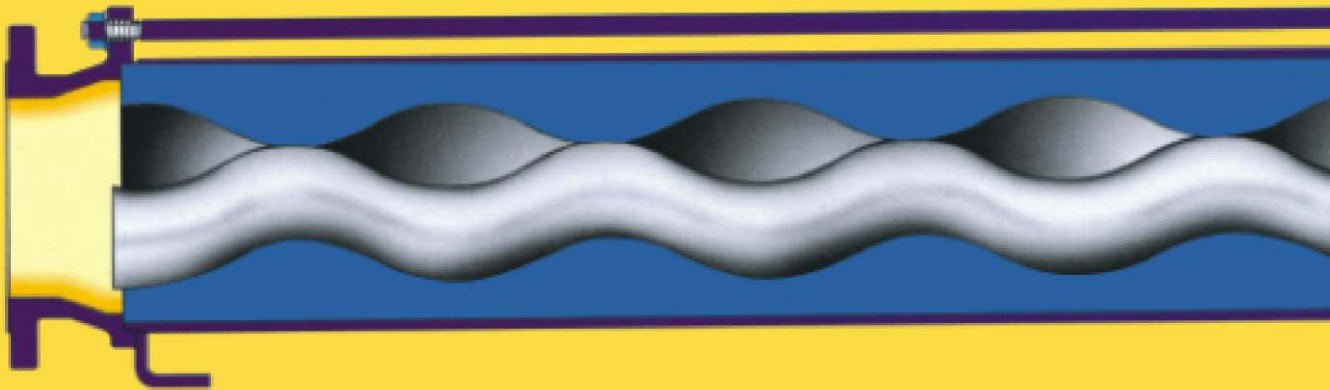


Tapered Entry Stator

Facilitates easy entry for fluid and improves suction capability.

Improved Pump Housing

A sloped housing design reduces entry losses and facilitates easy drainage. Its flexible housing orientation allows the suction port to be rotated in steps of 90° to suit any installation.



Zero Leakage @ low torque

Optimised Rotor–Stator Geometry

Improved Rotor – Stator geometry minimises wear due to lower rubbing velocity as compared to conventional geometry, particularly useful in abrasive applications. Lower starting torque and effective sealing line (Zero Leakage) improves volumetric efficiency resulting in reduced power consumption and extended service life.

Applications

Sewage •Effluent & Water Treatment •Sugar
•Paper •Pulp & Cellulose •Ceramics & Refractories
•Explosives •Chemicals & Fertilizers •Soap & Detergents •Cosmetics & Toiletries •Paint & Varnish
•Petrochemicals & Refineries •Vegetable Oils
•Fertilizers •Mining •Steel •Rubber •Starch
•Construction •Man Made Fibres •Fisheries •Oil Exploration and Production •Pharmaceuticals
•Cattle Feed •Electronics •Brewery and Distillery
•Agriculture •Distribution Depots •Power
•Dairies •Winery •Food And Beverages •Abattoir and Meat Processing •Plantations •Fruit Processing •Dye Stuff •Textiles

Fluids handled

Digested Sewage Sludge •De-Watered Effluent Sludge •Industrial Effluents •Poly Electrolytes •Flocculants •Sulphited Sugar Juice
•Masseccuite •Magma •Molasses •Spent Wash •Paper pulp having 12–21% consistency Sodium Silicate •Alum •Latex •Coating Slurry
•Glue •Black Liquor •Ceramic Slurry •Casein Slurry •Oils •Maize Slurry
•Viscose •Paints •Varnish •Vegetable Oil •Ammonium Nitrate Solution •Resins •Acidic And Alkaline Slurry •Soap Stock •Gum Sludges •Bentonite Slurry •Cake Mix •Grease •Waste Asbestos Slurry
•Explosive Slurry •Emulsion Matrix •Battery Paste •Printers Ink Paste
•Petroleum Jelly •Grout Mix •Lumpy sticky substances such as Dirty Grease •China Clay •Filter Cakes •Soya Cake •Wine
•Fruit Pulp •Fruit Juice •Condensed Milk •Butter Oil •Glucose
•Cream •Curd •Yeast •Syrup •Malt Extract •Mine Water
•Domestic Water Supply •Water for Cattle Feed •Animal Effluent
•Liquid Manure •Sandy & Silty Water.

extra value advantages **Roto**



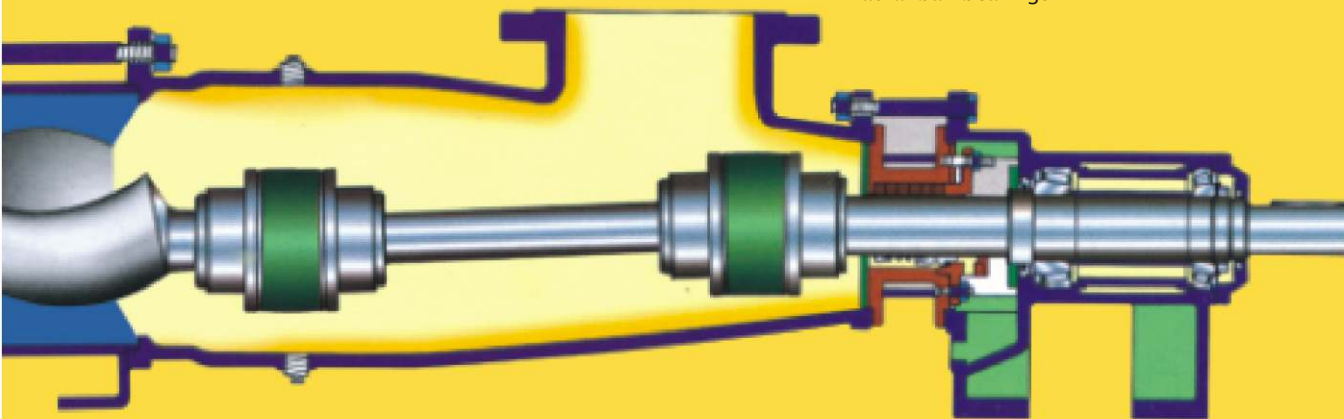
Smarter Shaft Sealing

The externally mounted stuffing box enables easier maintenance of Gland Packing or Mechanical seals, without the need to dismantle bearing housing.

Tougher Bearings

The use of taper roller bearings in medium and large size pumps ensures rigidity and concentricity of shaft leading to longer service life.

Smaller size pumps are fitted with heavy duty radial ball bearings .



The Cardan Universal Joint

The Cardan type universal joint used in this pump is acknowledged as far superior to the conventional gear joint or single pin & bush joint, having only line contact, which is subjected to extreme concentrated load, resulting in higher wear rate. The Cardan type of UJ joint employs two sets of pins perpendicular to each other, each providing freedom of angular movement which facilitates smoother transmission of angular load and is designed to withstand the axial forces, dominant in Progressive Cavity Pumps.



24
months
WARRANTY

Material Options

HOUSING COMPONENTS : Cast Iron, Cast Steel, Cast Stainless Steel, Fabricated Steel and Stainless Steel

STATOR : Natural, Nitrile, High Nitrile, EPDM, Chloro-Sulphonated Rubber, Fluoroelastomer

ROTOR : Case Hardened Steel, Alloy Steel HCP, Stainless Steel UP/HCP

COUPLING ROD : Alloy Steel, Stainless Steel

SHAFT : Alloy Steel HCP, Stainless Steel UP/HCP. Shaft Sleeve Optional

SPECIAL MATERIAL : Other Exotic options including Alloy 20, Hastelloy also available

Legend

HCP: Hard Chrome Plated UP: Unplated

Sealing Options

SOFT GLAND PACKINGS : Aramid packing -impregnated with PTFE High Temperature Resisting Lubricants •Lubricated PTFE Yarn Packing •Graphited Impregnated Glass Yarn Packing Lubricated with Mineral Oil •Lantern ring optional.

MECHANICAL SEAL : •Single coil Elastomer bellow Seals •Single coil Unbalanced Unidirectional/Bidirectional •Lug Driven •Balanced Seals • Double Seals •Flushing / quenching as per API Plan optional.

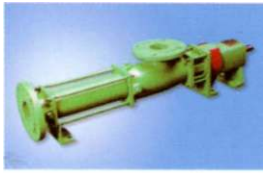
Drive Arrangements

DIRECT DRIVE : Electric Motor •Geared Motor •Gear Box •Mechanical Speed Variator •Petrol / Diesel Engine •Turbines •Hydraulic •Pneumatic

V' BELT DRIVE: Over Head and ' L ' Type

Roto extra value

Pump series to suit all applications



Size	D41	D43	D45	D47	D49	D51	D53	D55
Capacity								
m3/hr	0.11	0.3	0.6	1.6	3.5	6.5	9.5	16.5
GPM	0.4	1.3	2.6	7	15.4	28.6	42	73
Pressure								
Bar	24	24	24	24	24	12	12	6
PSI	341	341	341	341	341	171	171	85

Small Capacity 'RD' Series Pumps

Viscosities: Upto 30,000 cst
Temp.: Upto 150°C / 302°F Solid Handling Capability: Upto 7%

These small capacity Heavy duty pumps are designed for continuous or intermittent dosing or transfer duties. These pumps are available in Close-Coupled & Bare shaft Configuration. 6 & 8 stage pumps are also available in select sizes.



Size	M50	M52	M54	M56	M58	M60	M62	M64	M66	M68	M70	M72
Capacity												
m3/hr	4	8	12	20	27	38	58	78	95	120	150	200
GPM	17.6	35.2	53	88	120	168	256	344	420	530	660	880
Pressure												
Bar	48	48	48	36	36	24	18	12	12	6	12	6
PSI	682	682	682	511	511	341	256	171	171	85	171	85

Medium to Large Capacity 'RM' Series Pumps

Viscosities: Upto 30,000 cst
Temp.: Upto 150°C / 302°F Solid Handling Capability: Upto 7%

These Heavy Duty pumps are designed for continuous duties and are suitable to perform efficiently even for the most difficult fluid handling applications. These Pumps are available in Close Coupled & Bareshaft Configuration.



Size	L54	L57	L61	L63	L67	L71	L75
Capacity							
m3/hr	14.2	23	54	67	116	195	345
GPM	63	102	238	295	511	860	1520
Pressure							
Bar	4	4	4	4	4	4	4
PSI	57	57	57	57	57	57	57

Extra Large Capacity 'RL' Series Pumps

Viscosities: Upto 15,000 cst
Temp.: Upto 150°C / 302°F Solid Handling Capability: Upto 7%

These Heavy Duty cost effective pumps use the extended Rotor Stator Geometry and are ideal for the Sewage & Effluent treatment applications. These Pumps are available in Close Coupled & Bareshaft Configuration.

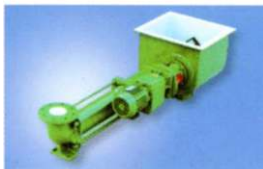


Size	W54	W56	W58	W60	W62	W64	W66	W70
Capacity								
m3/hr	6	8	11	15	23	30	38	50
GPM	26	34	47	65	99	129	163	215
Pressure								
Bar	24	24	24	24	12	12	6	6
PSI	341	341	341	341	171	171	85	85

Widethroat 'WM' Series Pumps

Viscosities: Upto 125,000 cst
Temp.: Upto 150°C / 302°F Solid Handling Capability: Upto 12%

Widethroat type inlet allows gravity flow of highly viscous (Plastico-viscous) material on to Augur-on-Coupling Rod which pushes the substance to the pumping element. Available in Close Coupled & Bareshaft Configuration.



Size	K54	K56	K58	K60	K62	K64	K66	K70
Capacity								
m3/hr	2.5	3	5	6	10	13	16	25
GPM	11	13	22	26	43	56	69	108
Pressure								
Bar	24	24	24	24	18	12	12	12
PSI	341	341	341	341	256	171	171	171

Widethroat with Bridgebreaker 'KM' Series Pumps

Viscosities: Upto 3,000,000 cst
Temp.: Upto 150°C / 302°F Solid Handling Capability: Upto 40%

Widethroat pumps with side paddle (bridgebreaker) arrangement are designed for handling extremely difficult media with very high solid content and non flowing properties.



Size	DM55	DM58	DM60	DM63
Capacity				
m3/hr	16.5	32	45	75
GPM	73	141	198	330
Pressure				
Bar	6	6	6	4
PSI	85	85	85	57

Wine & Beverage 'DM' Series Pumps

Viscosities: Upto 5,000 cst
Temp.: Upto 150°C / 302°F Solid Handling Capability: Upto 7%

These Heavy Duty pumps are specifically designed for Wine transfer applications and can also be used for other Food & Beverages applications. Standard connections include IDF, SMS & RJT.

Engineered fluid handling solutions

Backed by over 35 Years of experience and strong Research & Development infrastructure in providing fluid engineering solutions to a wide spectrum of industries, Roto has the unique ability to offer high-end customised solutions. These include either custom designed pumps to suit a specific pumping application or complete systems.

The vertical pumps are designed to operate with the pumping elements immersed in the product. The pumps are compact, space saving. The pumps are custom designed and manufactured for varying column lengths to suite the sump depth.

