

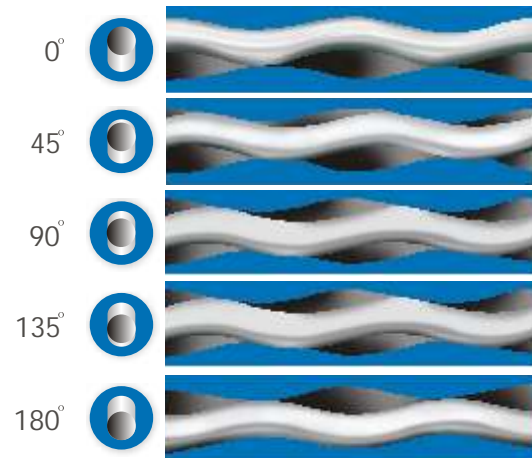
PROGRESSIVE CAVITY RANGE OF PUMPS

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

## 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 the special profile of the rotor and stator set, a sealing line is formed along the axis of the rotor which is maintained at both static and dynamic conditions.

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



Cavity movement through 180° of Rotor rotation

## Distinctive design features & benefits

POSITIVE DISPLACEMENT	:	Because of the single rotating element, progressing cavities are generated which deliver a uniform, metered & non-pulsating flow. The head developed is independent of the rotational speed, whereas the capacity is proportionate to the speed.
SELF-PRIMING	:	Inherently self-priming, the pumps can work on snore & do not require a foot valve.
NON-CLOGGING	:	Can handle solids in suspension or medias containing a high percentage of solids.
LOW NPSH REQUIREMENT	:	Suction lift capabilities of up to 9.5 mwc & effective even in high vacuum conditions.
LOW INTERNAL VELOCITY	:	Minimum degradation of shear-sensitive media, and can also handle highly viscous materials having pseudo-plastic characteristics.
REVERSIBLE	:	Due to the reversible rotation capabilities, progressive cavity pumps can perform with equal efficiency in either direction.
SILENT RUNNING	:	Rotors turn inside a resilient stator & thus generate little noise.
SEPARATE BEARING HOUSING	:	Fluids can be pumped with no contamination.

## International Quality



Continuous investment in precision measuring instruments, state-of-the-art testing facilities, 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.



# Key advantages



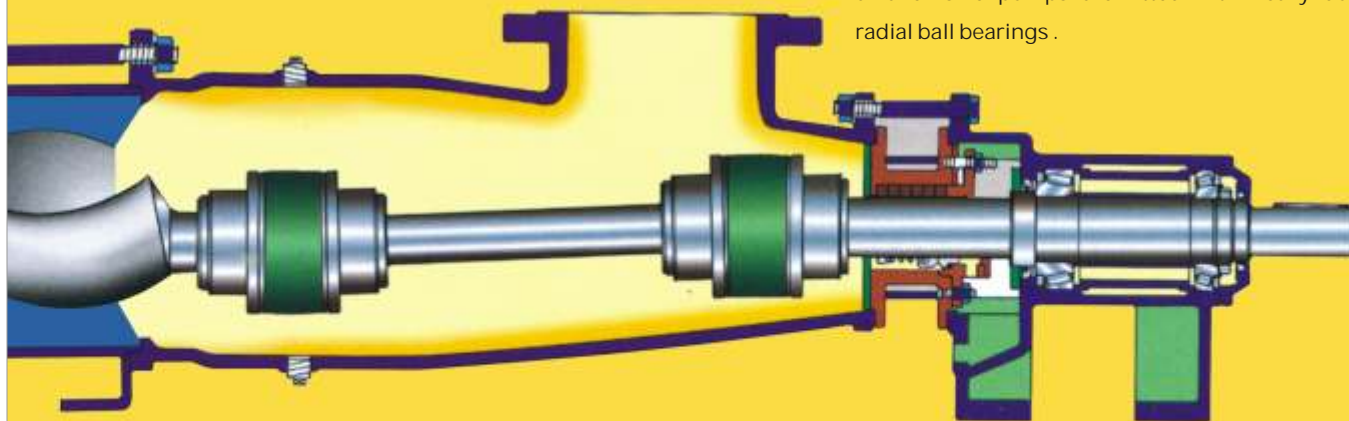
## Smarter Shaft Sealing

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

## Tougher Bearings

The use of taper roller bearings in both medium and larger pumps, ensures rigidity and concentricity of the mainshaft leading to a 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 to be far superior to the conventional gear joint, or single pin & bush joint which is subjected to extreme concentrated loads, resulting in high wear rates. The Cardan type of UJ joint employs two sets of perpendicular pins, each providing freedom of angular movement, which facilitates smoother transmission of angular loads. The Cardan type UJ joint is also designed to withstand high axial forces which are 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 bellows 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



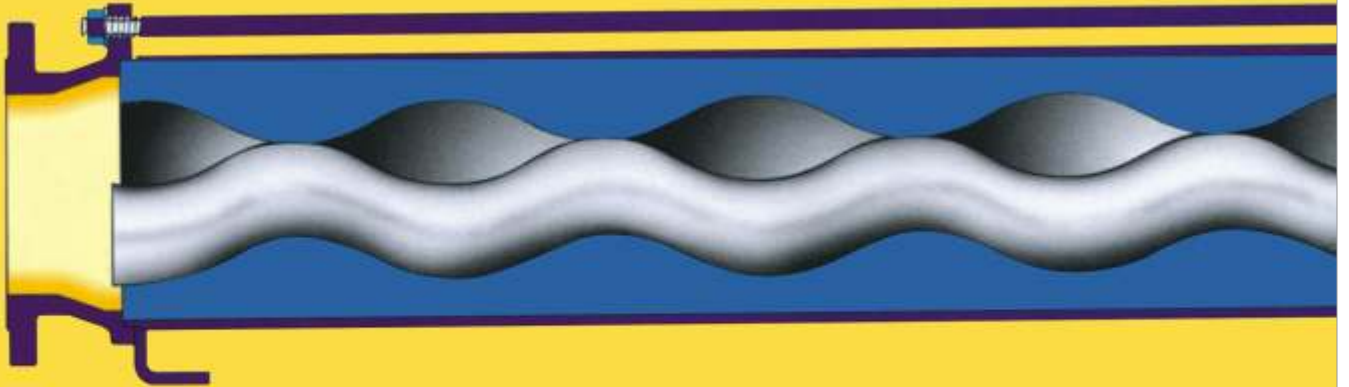
# Roto extra va

## Tapered Entry Stator

Facilitates easier entry for fluids 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.



## Optimised Rotor-Stator Geometry

Improved Rotor - Stator geometry minimises wear due to lower rubbing velocities 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.

Zero Leakage @ low torque

### 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
- Masecuite • 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.



# 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	48	24	24	24	12	12	6
PSI	341	682	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	36	24	24	24	18	12	6	12	6	6
PSI	682	682	511	341	341	341	256	171	85	171	85	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	L59	L61	L63	L67	L71	L75
Capacity								
m3/hr	14.2	23	42	54	67	116	195	345
GPM	63	102	185	238	295	511	860	1520
Pressure								
Bar	6	6	6	6	6	6	6	6
PSI	85	85	85	85	85	85	85	85

### 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	W68	W70
Capacity									
m3/hr	5	8	11	19	33	42	48	72	85
GPM	22	34	48.8	83.7	144.5	183.5	211.2	315.5	373.6
Pressure									
Bar	36	24	24	24	24	18	12	6	12
PSI	511	341	341	341	341	256	171	85	171

### 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	36	24	24	24	24	18	12	12
PSI	511	341	341	341	341	256	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	DM57	DM58	DM60	DM61	DM63
Capacity						
m3/hr	16.5	25	32	45	60	75
GPM	73	110	141	198	264	330
Pressure						
Bar	6	6	6	6	6	6
PSI	85	85	85	85	85	85

### 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 40 Years of experience and a 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.

Roto's vertical pumps are designed to operate with the pumping elements immersed in the product. These pumps are compact and space saving. They are custom designed and manufactured for varying column lengths to suite the sump depth.





Roto's Manufacturing Plant

## Strong Manufacturing Base

Roto's new integrated manufacturing plant with an in-house Polymer unit and its other plant at Duty Free Zone at Noida are spread over 20,000 sq. mtrs., the plants have sophisticated machine tools & testing facilities that ensure a consistent world-class quality products matching today's demanding customer expectations. All critical components are manufactured in-house to ensure 100% quality conformance. Roto's state-of-the-art R&D facilities translate concepts to prototypes and prototypes into final products. Headed by some of the world's finest pump professionals. It is equipped with a battery of solid H stations and sophisticated Test beds with Data Acquisition & Analysis Systems, to ensure a comprehensive validation of pump design.

Roto's world class products are available through its own Warehouse - Marketing offices in Australia and the U.K, along with a strong network of dedicated distributors spread across the globe.

## Over 40 years of fluid engineering expertise

Roto's application expertise has been gained over four decades in providing fluid engineering solutions to more than 4000 customers world-wide. The Roto excellence spanning over 1500 types of fluids, is a valuable asset for you to bank upon for more efficient and cost effective solutions to your fluid handling requirements.



U.K. Office



Corporate Office & Export Warehouse  
at Duty Free Zone, Noida



Australia Office

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