Engineered to Touch Your Life Everyday!

The T. Maneklal group is a third-generation family-owned group of companies started by Mr. T. Maneklal in 1948. **TMVT**, a group company was established in 1991 by Mr. Yogesh T. Maneklal, TMVT today is one of India's leading and most experienced manufacturers of **Twin and Three Lobe Roots Blower and Liquid Ring Vacuum Pumps** which we supply to major Blue Chip Public Sector companies and Private Sector Corporates all over India and internationally.

Backed by the best in the industry, we provide effective solutions to our customers by offering them specialized and tailor-made products such as **Most Energy Efficient High Speed Gearless Turbo Blowers and Extremely Superior High Vacuum Systems.**

With numerous design features, the widest capacity range available at fiercely competitive pricing, we can certainly match the demanding air and gas handling market requirements. We provide the highest level of services, combining a talented management team with more than 40 years of experience in the blower and pump industry and a hardworking and dedicated support staff.

TMVT Industries Pvt. Ltd.
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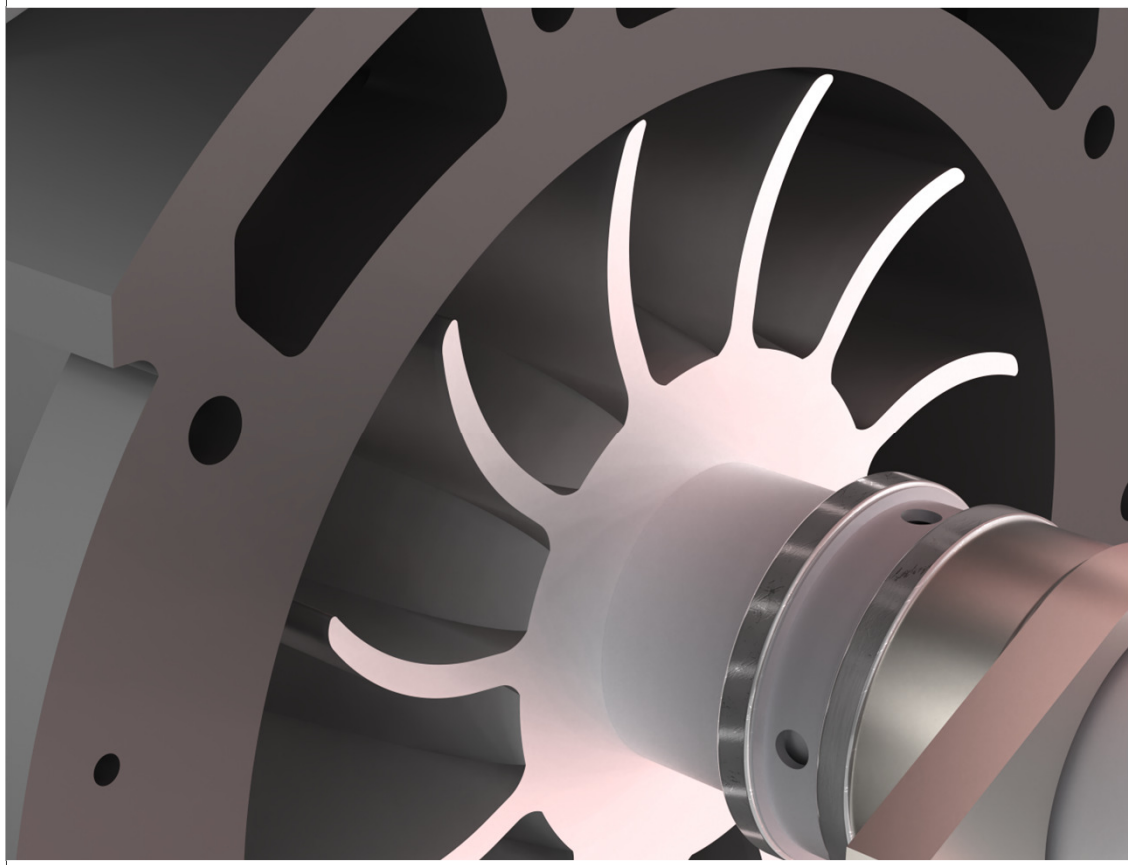


TMVT Liquid Ring Vacuum Pumps

Welcome to TMVT Vacuum Pump Series, where precision meets innovation. Discover a new era of excellence in vacuum technology with our state-of-the-art pumps.

Efficiency | Innovation | Performance

TMVT Vacuum Pump Series

Precision in Air & Gas Handling

Efficiency | Innovation | Performance

Welcome to TMVT's Liquid Ring Vacuum Pump Series Brochure, a comprehensive guide that seamlessly blends technological prowess with commercial viability. At the heart of our innovation is the Cone Type LRV Series, a technological marvel designed to redefine precision in vacuum applications. Combining efficiency with adaptability, this series caters to a spectrum of industrial needs, ensuring optimal performance in every operation. As you explore, witness how the Cone Type LRV Series stands as a testament to our commitment to advancing vacuum technology.

Dive into the Control Plate Type LRV Series, where robust engineering meets commercial practicality. Engineered for durability and efficiency, this series thrives in challenging environments, delivering precise and reliable performance across diverse applications. Discover the synergy of technology and commercial viability that sets the Control Plate Type LRV Series apart.

For those seeking the pinnacle of vacuum excellence, our Control Plate Type LRVD Double Stage Series emerges as the epitome of efficiency. This two-stage powerhouse integrates cutting-edge control plate technology with a dual-stage configuration, pushing the boundaries of performance and reliability. Witness a new era unfold as the Control Plate Type LRVD Double Stage Series sets the bar for vacuum innovation.

In this brochure, we invite you to navigate the dynamic fusion of technology and commercial excellence that defines TMVT's Liquid Ring Vacuum Pump Series. Join us on a journey into the future of vacuum solutions, where precision meets practicality, and reliability defines excellence. Your exploration starts here.

Engineered to
Touch Your Life
Everyday!

TMVT Industries Pvt. Ltd.

(T. MANEKLAL GROUP)

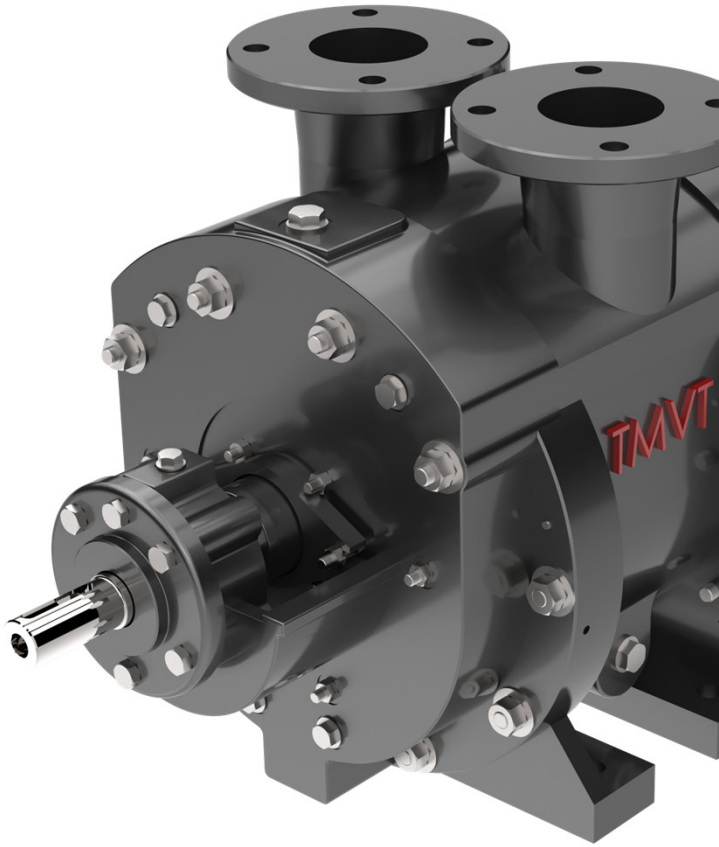
Content

Efficient Cone Dynamics:
Unveiling TMVT's Innovation

Redefined Efficiency in Vacuum Technology

A cone-type liquid ring vacuum pump uses the rotation of a cone-shaped impeller to create a vacuum by compressing and expanding the gas within a rotating liquid ring. The cone design contributes to the efficiency of the pump by optimizing the interaction between the impeller and the liquid ring. These pumps are commonly used in various industrial applications where a reliable and continuous vacuum is required.

Innovative Plate Control:
Advancing Vacuum Technology



Cutting-Edge Solutions in Liquid Ring Pumps

A control plate type liquid ring vacuum pump is a specific type of vacuum pump designed for various industrial applications; a control plate is introduced to enhance performance and efficiency. The control plate is an adjustable device that regulates the amount of liquid in the pump, controlling the compression and expansion of the gas in the working chamber.

Mechanical Brilliance:
Uncovering Vacuum Excellence

CONE TYPE LRV SERIES

CONTROL PLATE TYPE LRV SERIES

LRVD SERIES TWO STAGE

Exploring the Heart of TMVT Pumps

1. Formation of Liquid Ring:

A certain amount of sealing liquid (usually water) is introduced into the pump casing. The pump contains an eccentrically mounted impeller connected to a shaft. When the impeller rotates, it imparts centrifugal force to the sealing liquid, creating a rotating liquid ring inside the pump casing.

2. Compression Cycle:

As the impeller rotates, the liquid ring forms a temporary seal around the outer edge of the casing. As the impeller continues its rotation, the volume between the vanes of the impeller and the liquid ring changes. This change in volume compresses the gases present in the pump chamber.

3. Discharge:

When the volume reaches its minimum, the compressed gas is discharged through the discharge port of the pump.

4. Replenishment of Sealing Liquid:

Simultaneously, new sealing liquid is continuously introduced into the pump to replace any liquid that is lost during the compression cycle.
The liquid ring serves as both a seal and a medium for compressing gases. It is important to note that the liquid used for sealing can be slightly heated during the compression process. This heat is typically removed using an external heat exchanger.

Characteristics

- Handling of Wet Gases
- Reliability
- Ability to Handle Variable Loads
- Low Risk of Contamination
- Suitability for Rough Vacuum Applications
- Cooling Effect

Pump Precision Decoded:
Choosing Cone vs. Control Plate

Understanding the nuances between Cone Type and Control Plate Type Liquid Ring Vacuum Pumps is crucial for optimizing vacuum systems in various applications. Each type has distinct features that cater to specific industrial needs..

Cone Type Liquid Ring Vacuum Pump:

Design Characteristics:

- Conical shape enhances fluid dynamics.
- Efficient for handling liquid carryover.
- Suitable for compact installations.

Advantages:

- High Efficiency
- Low Maintenance Requirements
- Cooling Effect
- Ability to Handle Contaminated Gases
- Reduced Noise Levels

Control Plate Type Liquid Ring Vacuum Pump:

Design Characteristics:

- Incorporates a flat control plate for liquid seal.
- Effective applications with moderate liquid carryover.
- Robust design for durability.

Advantages:

- Energy Efficiency
- Variable Capacity
- Reduced water consumption
- Improved performance at partial loads
- Process Stability

Criteria Guide for Optimal Pump Selection

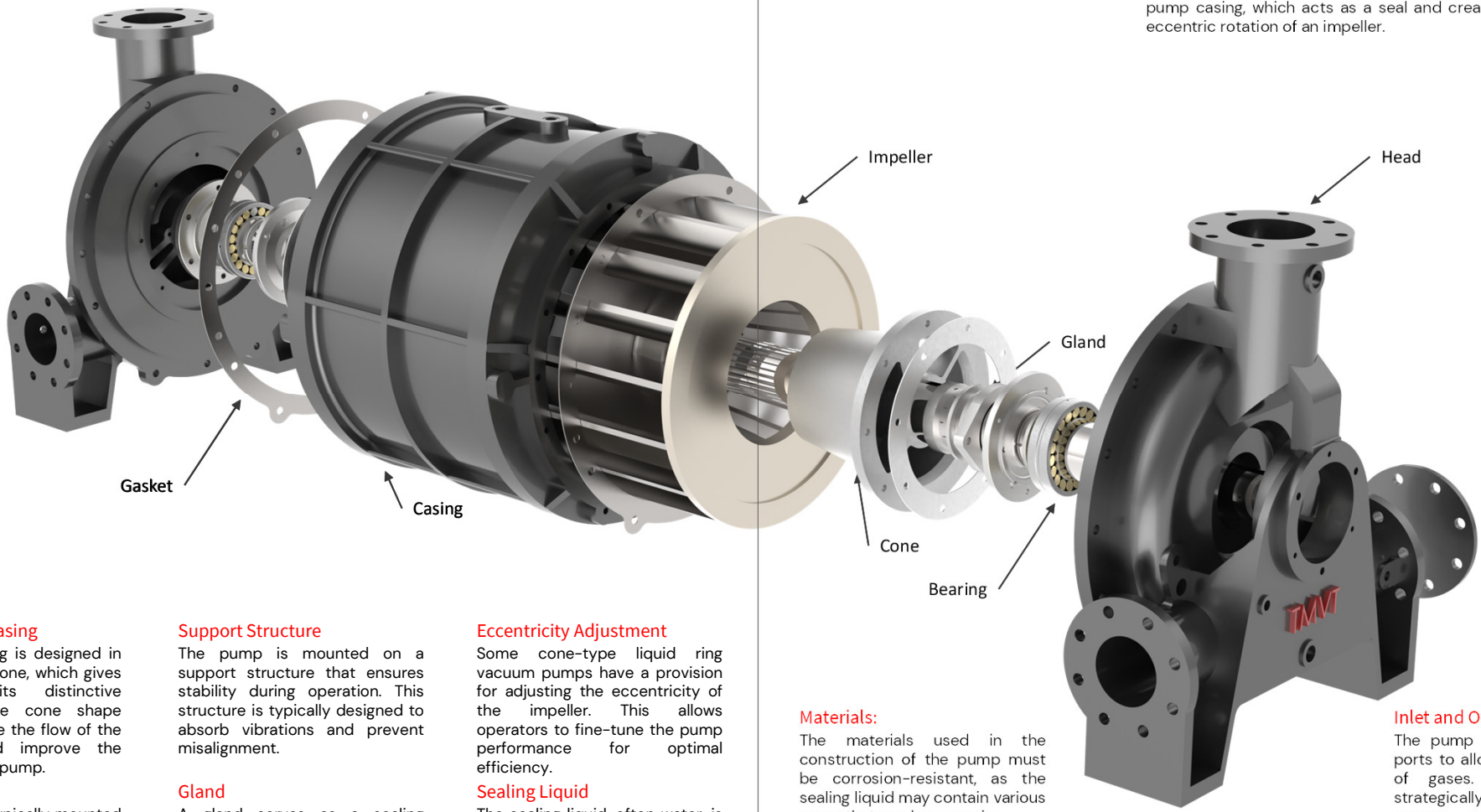
Selection Criteria	Vacuum Pump	
	Cone Type	**Control Plate Type**
Application Requirements	Versatile for general applications	Suited for wet or challenging gas environments
Gas Composition	Efficient in various gas compositions	Resilient against corrosive or wet gases
Risk of Cavitation	Low risk, suitable for applications with varying pressure	Effective in minimizing cavitation, especially in wet processes
Resistance to Abrasives	Moderate resistance	Enhanced resistance, suitable for abrasive environments
Efficiency	Generally efficient for standard applications	Offers efficiency in handling challenging conditions
Cost Considerations	Typically cost-effective for general use	May involve higher initial costs but provides advantages in specific applications
Maintenance Requirements	Generally straightforward maintenance	May require specialized maintenance due to the nature of applications
Process Conditions	Versatile for varying process conditions	Ideal for processes with specific challenges like liquid carryover

Selecting the right Liquid Ring Vacuum Pump depends on a thorough understanding of application-specific needs. Whether it's the efficient design of the Cone Type or the stability of the Control Plate Type, making an informed choice ensures optimal performance and longevity in vacuum systems.

Deconstructed Precision:
Insight of Cone Type LRV Pumps

Precision Redefined, Part by Part

A cone-type liquid ring vacuum pump is a specific design of liquid ring vacuum pump that utilizes a cone-shaped casing to achieve efficient vacuum generation. Liquid ring vacuum pumps, in general, operate based on the principle of creating a liquid ring inside the pump casing, which acts as a seal and creates a vacuum by the eccentric rotation of an impeller.



Cone-shaped Casing
The pump casing is designed in the shape of a cone, which gives the pump its distinctive appearance. The cone shape helps to optimize the flow of the liquid ring and improve the efficiency of the pump.

Impeller
The impeller is typically mounted eccentrically within the casing. As the impeller rotates, it creates a centrifugal force that throws the sealing liquid (usually water) outward, forming a liquid ring along the inner surface of the cone-shaped casing.

Support Structure
The pump is mounted on a support structure that ensures stability during operation. This structure is typically designed to absorb vibrations and prevent misalignment.

Gland
A gland serves as a sealing mechanism to prevent the leakage of air or other gases from the pump chamber. The primary purpose of a gland in a vacuum pump is to maintain the integrity of the vacuum by providing a secure seal around the moving parts, typically the shaft.

Eccentricity Adjustment
Some cone-type liquid ring vacuum pumps have a provision for adjusting the eccentricity of the impeller. This allows operators to fine-tune the pump performance for optimal efficiency.

Sealing Liquid
The sealing liquid, often water, is introduced into the pump to create the liquid ring. This liquid serves multiple purposes: it seals the clearances between the impeller and the casing, provides a medium for compressing gases, and helps in heat dissipation.

Materials:
The materials used in the construction of the pump must be corrosion-resistant, as the sealing liquid may contain various gases that can be corrosive.

Drive Mechanism
The impeller is driven by a power source, such as an electric motor, which is connected to the pump through a drive mechanism.

Bearing Cap
A bearing cap serves several important purposes related to the support and protection of the pump's rotating components.

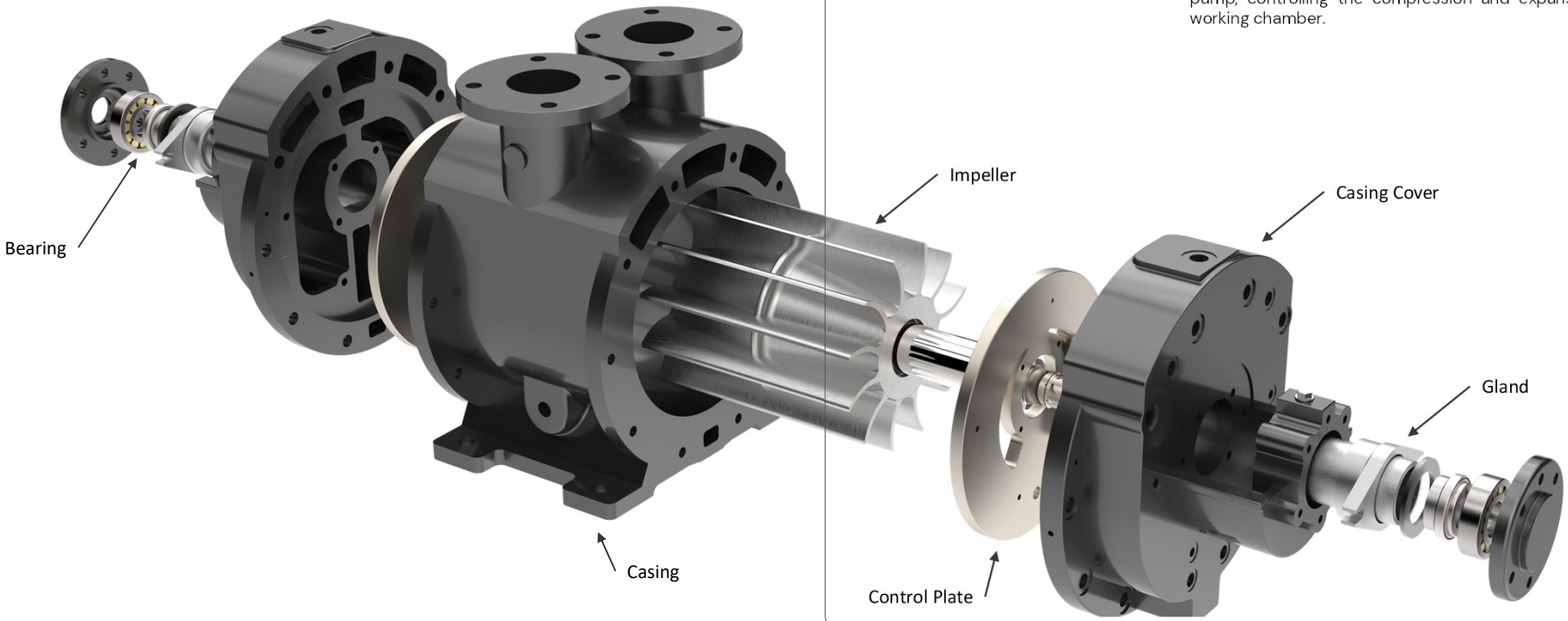
Inlet and Outlet Ports
The pump has inlet and outlet ports to allow the entry and exit of gases. These ports are strategically located to ensure proper gas circulation and vacuum generation.

Felt Ring
A felt ring in a vacuum pump serves as a sealing and lubrication component, often used in conjunction with other sealing elements.

Inner Dynamics:
Explore Control Plate Type LRV Pumps

Understanding Every Element of Excellence

A control plate type liquid ring vacuum pump is a specific type of vacuum pump designed for various industrial applications; a control plate is introduced to enhance performance and efficiency. The control plate is an adjustable device that regulates the amount of liquid in the pump, controlling the compression and expansion of the gas in the working chamber.



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Materials:
The materials used in the construction of the pump must be corrosion-resistant, as the sealing liquid may contain various gases that can be corrosive.

Control Plate
The control plate serves inlet and outlet ports efficiently with allowing variable capacity by the means of ball support.

Ball support
Ball support works as Non Return Valve which provides significant resistance to unwanted flow of liquid or gas.

Impeller
The impeller is typically mounted eccentrically within the casing. As the impeller rotates, it creates a centrifugal force that throws the sealing liquid (usually water) outward, forming a liquid ring along the inner surface of the cone-shaped casing.

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Performance Chart:
Liquid Ring Vacuum Pumps

Performance Chart (Vacuum Pump Series)

Take a closer look at the unparalleled precision of our Vacuum Pumps. Explore the intricate details and technological marvels that distinguish each category.

SINGLE STAGE LIQUID RING VACUUM PUMP - LRV CONTROL PLATE TYPE

Valid for barometer at 760 mm hg and seal water at 20 to 30 degree Celsius

Pump Model (LRV)	Speed RPM	Max Suction M3/Hr	Recommended Motor H.P	Water Consumption Ltrs/Min.	Max Vacuum with Close Suction (MM of HG)
004	2850	48	5	7	710
005	2850	81	5	9	710
007	2850	120	7.5	13	710
008	1450	175	7.5	16	710
010	1450	220	10	20	710
015	1450	330	15	28	710
020	1450	440	20	35	710
030	980	720	30	55	710
040	980	1080	50	85	710
075	725	1700	75	120	710
100	725	2100	100	150	710

TWO STAGE LIQUID RING VACUUM PUMP - LRVD

Valid for barometer at 760 mm hg and seal water at 20 to 30 degree Celsius

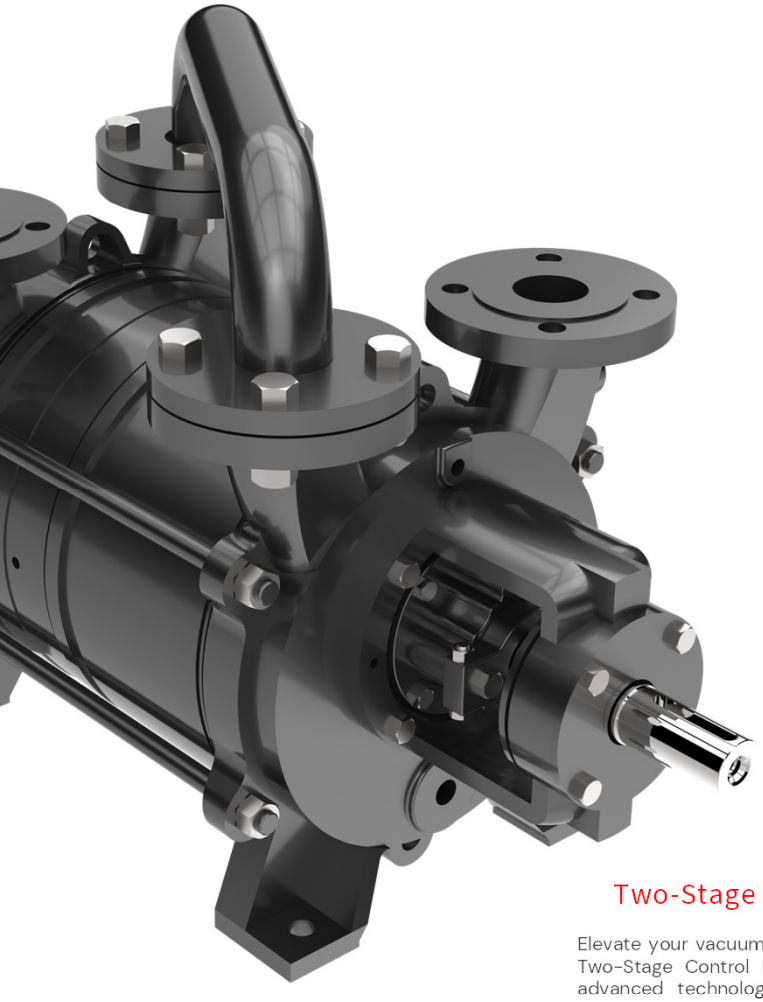
Pump Model (LRVD)	Speed RPM	Max Suction M3/Hr	Recommened Motor H.P	Water Consumption Ltrs/Min.	Max Vacuum with Close Suction (MM of HG)
005	1440	75	5	8	720
008	1440	175	7.5	14	720
010	1440	220	10	20	720
015	1440	305	15	25	720
020	1440	400	20	30	720
025	1440	500	25	35	720

SINGLE STAGE LIQUID RING VACUUM PUMP - LRV CONE TYPE

Valid for barometer at 760 mm hg and seal water at 20 to 30 degree Celsius

Pump Model (LRV)	Speed RPM	Max Suction M3/Hr	Recommened Motor H.P	Water Consumption Ltrs/Min.	Max Vacuum with Close Suction (MM of HG)
700	1320	740	40	50	650
1100	1050	1170	50	67	650
1700	820	1750	75	90	650
3500	600	3700	150	118	650
5000	500	5400	200	168	650

Elevated Performance:
LRVD Series Redefining Benchmarks

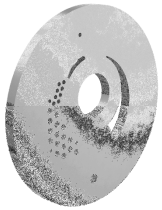


Two-Stage Excellence Unleashed

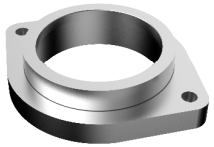
Elevate your vacuum processes with our LRVD Series Two-Stage Control Plate Type Vacuum Pump. This advanced technology employs a precision control plate in the first stage for initial compression, followed by a second stage to achieve superior vacuum levels. Constructed with a robust rotor, advanced sealing, and dual-stage configuration, it ensures reliable, efficient, and high-performance vacuum operations for diverse industrial applications. Welcome to the forefront of precision and reliability in vacuum technology.

Spare Parts Arsenal:
Ensuring Uninterrupted Performance

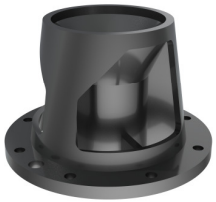
BALL SUPPORT



CONTROL DISC



GLAND

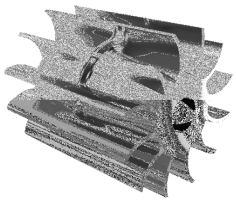


CONE

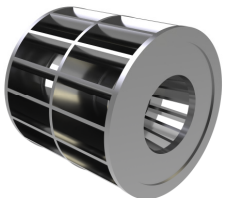
CONE TYPE CASING

CONTROL DISC TYPE CASING

CONE TYPE HEAD



CONTROL DISC TYPE IMPELLER



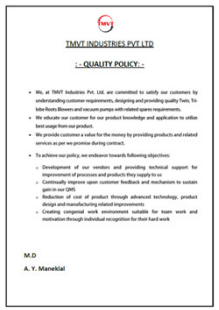
CONE TYPE IMPELLER

Certified Excellence:
Our Quality Commitment

ISO 9001:2015

ISO 45001:2018

ISO 14001:2015



Quality Policy

The images of our certifications and policies symbolize our pledge to excellence and reflect our dedication to maintaining the highest standards across all facets of our operations.

EHS Policy

At TMVT, our commitment to quality is unwavering. We take pride in our ISO certifications – 9001:2015 for quality, 45001:2018 for occupational health & safety and 14001:2015 for environmental management. These certifications underscore our dedication to delivering products and services that not only meet but exceed international standards.

Rigorous quality control measures are integrated into our processes, ensuring precision and reliability at every stage. We believe in continuous improvement, aligning our practices with global benchmarks, and prioritizing environmental sustainability and the well-being of our workforce.

Your Gateway to Excellence:
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