

# TWO STAGE LIQUID RING PUMPS, COMPRESSORS & SYSTEMS

# TC/TCM SERIES



# NASH TC/TCM TWO STAGE SERIES

Pumps, Compressors & Systems

NASH liquid ring vacuum pumps are known as tireless workhorses, designed to stand up to the rigorous, nonstop demands of harsh industrial environments. Built better than industry standards, NASH pumps have been known for their reliability for over 110 years.

The TC/TCM series was created for the chemical, petrochemical and power industries as well as other high vacuum applications. They are designed to operate at very low vacuum levels (less than 10 torr) with low vapor pressure seal liquids. In many applications, this translates into considerable operational savings by reducing the number of stages on hybrid systems. For example, a three stage jet system with glycol as motive and seal liquid can be reduced to a two stage system.

These pumps, with their integral two stage rotors, are able to condense process vapors and to recover or dispose of them. The result is a highly reliable and efficient vacuum pump.

Need efficient and reliable vacuum solutions? You need NASH.

# NASH LIQUID RING TECHNOLOGY ADVANTAGES

Cool Running

• Safe handling of process gases One Moving Part

- Quiet Operation

  Improved work environment
- Long term reliability

Handles Liquid Carryover

• Minimizes process downtime

NASH CERTIFIED<sup>™</sup> 2-Year Performance Guarantee

# RELIABLE TECHNOLOGY FOR DEMANDING INDUSTRIAL PROCESSES

Based on over 110 years of engineering expertise, the TC/TCM series delivers patented features and design elements that only the NASH engineering team can provide.

- NASH Patented Air/Water Design Improved Efficiency
- Meets Global Requirements & Standards
- Integral Two Stage Impeller to Attain High Vacuum With Less Components

# PACKAGE SYSTEM SOLUTIONS

Our package system offers NASH engineered soutions in a pre-configured design for fast turnaround, and delivery in as little as 6 to 8 weeks depending on pump stock availability.

- Pre-engineered Solutions
- Quick Delivery
- Configured to Meet the Demands of a Wide Range of Industrial Applications
- Plug & Play Installation

# CERTIFICATIONS

TC/TCM pumps meet global requirements and standards and are ATEX, ISO and ANSI certified.

## DEPENDABLE & EFFICIENT PERFORMANCE FOR A WIDE RANGE OF INDUSTRIAL APPLICATIONS

- Vacuum Distillation
- Reactor Vacuum
- Solvent Recovery
- Hogging
- Condenser Exhauster
- Deodorizing of Edible Oils and Fats
- Sterilizers and Autoclaves
- Vacuum Degassing
- Reactor Drying

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#### TC/TCM LIQUID RING VACUUM PUMPS & COMPRESSORS

INDUSTRIES & APPLICATIONS	designed to handle large amounts of liquid carryover without difficulty for the most demanding applications
MATERIALS OF CONSTRUCTION	cast iron, ductile iron and stainless steel
TECHNOLOGICAL ADVANCEMENTS	patented air/water separation design
DESIGN SPECIFICATIONS	designed to excel at very low vacuum levels with low vapor pressure seal liquids



PERFORMANCE	SPECIFICATIONS
VACUUM RANGE	down to 0.8 in. HgA; 27 mbar
MECHANICAL SEAL	single, double or cartridge
HYDROTEST PRESSURE (DUCTILE IRON PUMPS)	75 psig 6 bar abs. standard
HYDROTEST PRESSURE (STAINLESS STEEL PUMPS)	30 psig/3 bar abs.
CAPACITY RANGE	100 to 2,200 CFM (170 to 3,740 m <sup>2</sup> /h)

CONSTRUCTION MATERIAL

Ductile iron or stainless steel



# DIMENSIONS - IN INCHES (MM IN BLUE)

MODEL	LENGTH	WIDTH	HEIGHT	INLET	OUTLET
TCM1	31.1	15.6	15.5	2 FLG	2 FLG
	791	397	394	50 FLG	50 FLG
TCM2	36.9	17.1	17.8	2 FLG	2 FLG
	937	435	451	50 FLG	50 FLG
TCM3	38.6	17.1	17.8	2 FLG	2 FLG
	981	435	451	50 FLG	50 FLG
TC5	40.3	22.5	22	4 FLG	3 FLG
	1022	572	559	100 FLG	80 FLG
TC7	51	28	26	6 FLG	4 FLG
	1282	702	654	150 FLG	100 FLG
TC8	61.1	33.3	29	6 FLG	4 FLG
	1552	846	737	150 FLG	100 FLG
ТС9	73.3	41.6	35	8 FLG	6 FLG
	1862	1056	890	200 FLG	150 FLG
TC10	76.4	44.6	37	8 FLG	6 FLG
	1942	1132	940	200 FLG	150 FLG
TC11	81	40	43	8 FLG	6 FLG
	2060	1005	1080	200 FLG	150 FLG

All dimensions are approximate.





## NASH CONDENSER EXHAUSTER STANDARD & CONFIGURED-TO-ORDER PACKAGES

- **Quick Delivery** delivery in 6 weeks to 8 weeks depending on pump stock availability
- Plug & Play quick installation
- Materials of Construction iron, stainless steel
- Vacuum Levels <29in. Hg (30mbar abs.)

SYSTEM OPTIONS	ONCE-THRU	FULLY RECIRCULATED
Cast Iron/Stainless Steel Construction	Х	Х
Inlet Check Valve	Х	Х
Inlet Isolation Valve	Х	Х
Mechanical Seals	Х	Х
Relief Valve	Х	Х
Vacuum Gauge	Х	Х
Flow Switch	Х	
Partial Recirculated Seal	Х	
Seal Line Isolation Valve	Х	
Spray Nozzle	Х	
Seal Line Solenoid Valve	Х	Х
Motor Enclosures: • TEFC (Standard) • TEFC-SD (Severe Duty) • Explosion Proof • Inverter Duty • Wash-down Duty	х	Х

FEATURES	BENEFITS
New, patented air/water separation design*	Improved efficiency
Integrated two stage design	Improved system performance and efficiency
9 models available, accepting single, double and car- tridge mechanical seals	Flexibility to meet your process requirements
V-belt or flexible coupling drive	Numerous installation options
Integral two stage impeller	High reliability and can attain high vacuum without additional components
Shrouded rotor blades	Strength and reliability
Removable bearing bracket	Easier maintenance
O ring and gasket sealing options**	Optimum sealing to your specs
ATEX compliant, ISO & ANSI connections available	Meets today's industry standards and global requirements
Offered in ductile iron or in stainless steel	High durability and corrosion resistance
100% performance tested	Trouble-free start-up and operation
Backed by 2-year warranty and over 100 years of vacuum and compressed gas experience	Peace of mind



# NASH TC ANTI-CAVITATION UPGRAGE

Double the useful life of your NASH liquid ring vacuum pump in cavitation prone operations with the anti-cavitation upgrade. Your Nash Condenser Exhauster Systems were installed at a time when operations were designed to run base loaded. Now the industry has changed, and demands plants that are flexible enough to run at whatever load is necessary. These demands can take a toll on all areas of your plant, including your liquid ring vacuum pumps.

Nash has witnessed the damage caused by industry change, and has developed an innovation to make our TC line an even more sustainable and reliable option for today's demanding operating conditions.

- Patent pending cavitation reduction feature
- Available as an aftermarket upgrade to existing TC pumps
- Increase reliability, reduce maintenance and downtime
- No impact on capacity or power
- Same fit as the original TC, requires minimal piping changes
- Feature is now available on all new iron TC5, TC7, TC8, TC9, TC10 & TC11 pumps



# Nash Products & Systems



# NASH<sup>®</sup> Liquid Ring Vacuum Pumps & Systems

The reliable and durable solution for demanding process applications. Through ongoing commitment to innovation, Nash continues to introduce liquid ring vacuum pumps that meet the rigors of the most demanding applications while improving efficiency and lowering total cost of ownership.



# NASH and GARO<sup>®</sup> Liquid Ring Compressors & Systems

The rugged, reliable solution for demanding process applications. Designed to handle toxic, explosive and corrosive gases, and backed by a reliable history of performance under the most demanding conditions.



## DRY-PRO® Dry Vacuum Pumps & Systems

Designed to meet your specific process needs, NASH engineered systems are ready for operation, easy to integrate into process automation, help minimize installation & operating costs, and meet the rigors of the most demanding applications.



#### ENER-JET<sup>™</sup> Ejectors & Systems

Whether on their own, or as part of a NASH ENER-JET Hybrid Vacuum System, NASH steam jet ejectors are engineered for optimum efficiency, reducing steam consumption, while maintaining their ability to handle large volumes at very high vacuum levels.



Gardner Denver Nash, LLC

#### www.GDNash.com

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