

New Size Available Brushless DC Canned Pumps for a Wide Variety of Use

Even more high-head and high capacity.

In addition, tachometer feedback (rotation speed pulse output^{Note}) and variable input signal are available at the same time.

Note: Open collector method Outputs at 1 pulse/rotation.



Compact and Seal-Less Design

The canned motor design offers the most compact package available. This construction requires less space, while the seal-less design prevents liquid leakage and the need for seal replacement.



Long Life

A Brushless DC motor is employed as the pump drive. This motor design eliminates pump/motor failures due to brush wear, ensuring a service life equal to AC motors.



Flow Adjustment Feature and Built-in Drive Technology

An external input signal (1 to 5VDC or 400 Hz $\pm$ 10% of PWM, Duty 0 - 100%^{Note}) can be used to vary the flow rate. The NRD series models are also equipped with a built-in motor drive circuit. With this circuit, the power can be connected to variable external input to operate the pump.

Note: Connect the PWM control signal with an open collector (drain).



Multiple Connection Types

There are four different port connection options available, Tube (Hose barb type), NPT Thread, R Thread or G Thread. Select the option that best fits your location and installation.



Readily Compliant with Global Safety Standards

The NRD series power voltage is classified as safety voltage (50V or less), which allows the user to easily comply with global safety standards such as UL, CSA and CE. The DC power supply does not have a region-specific voltage or frequency, allowing for unified usage.

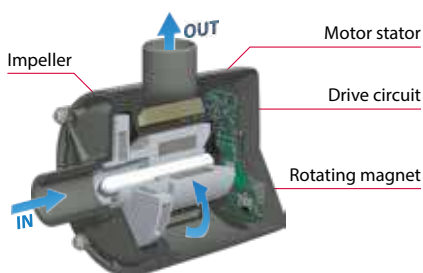


High Temperature Environments

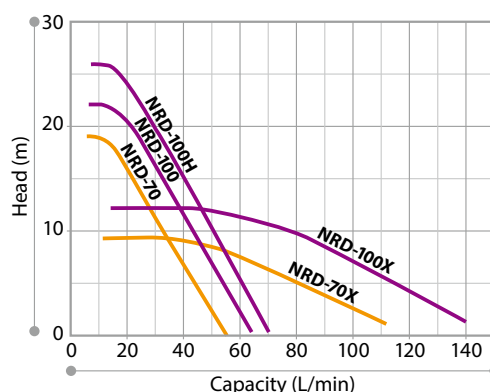
The pump can be installed in an environment with an ambient temperature of up to 50°C. It can also pump fluids as warm as 80°C (100H: 70°C).

Operating Principle

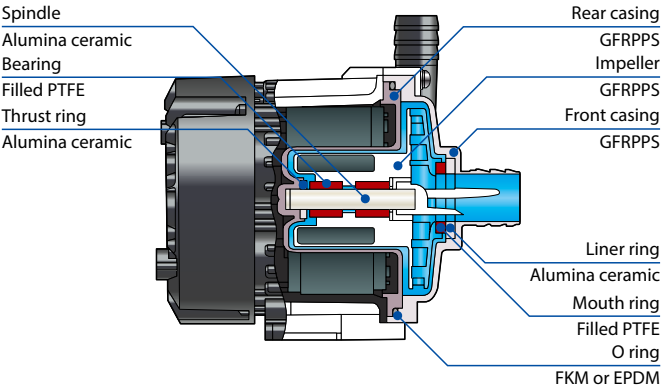
Canned motor centrifugal pumps directly drive the rotor magnet that is coupled to the impeller. The pump chamber is completely sealed from the exterior by a static o-ring. The impeller is driven by a rotating magnetic field that doesn't require a shaft seal. In addition, these products have a simpler and more compact structure than pumps which have external drive magnets.



Performance Curves



Wet End Materials



Pump Identification

NRD	-	70	T	V	48	P	-	R
1		2	3	4	5	6		7
1 Pump series NRD Series				5 Power voltage 48: 48VDC				
2 Pump size 70, 70X, 100, 100X, 100H				6 Control method No code: Variable external input (1 to 5VDC) P: PWM input				
3 Material of Bearing T: Filled PTFE				7 Pump connection port No code: Tube R: R Thread N: NPT Thread G: G Thread				
4 Material of O ring V: FKM E: EPDM								

Specifications

Model	Connection	Connection sizes (Outer diameter Ø)		Max. Capacity ^{Note1} L/min	Max. Head ^{Note1} m	Noise ^{Note2} dB	Limit of specific gravity	Motor		Mass kg			
		IN mm	OUT mm					Power voltage V	Output W				
NRD-70	Tube	25	19	55	19.1	up to 55	1.07	DC48	135	2.7			
	R Thread	R1	R3/4										
	NPT Thread	NPT1	NPT3/4										
	G Thread	G1 · 1/2	G1 · 1/4										
NRD-70X (Large capacity type)	Tube	32		112	9.3	up to 55			1.07		DC48	120	2.7
	R Thread	R1 · 1/4											
	NPT Thread	NPT1 · 1/4											
	G Thread	G1 · 1/2											
NRD-100	Tube	25	19	64	22.2	up to 60	1.07	DC48		165		2.7	
	R Thread	R1	R3/4										
	NPT Thread	NPT1	NPT3/4										
	G Thread	G1 · 1/2	G1 · 1/4										
NRD-100X (Large capacity type)	Tube	32		140	12.2	up to 60			1.07	DC48	170		2.7
	R Thread	R1 · 1/4											
	NPT Thread	NPT1 · 1/4											
	G Thread	G1 · 1/2											
NRD-100H (High head type)	Tube	25	19	70	26	up to 60	1.07	DC48			195	2.7	
	R Thread	R1	R3/4										
	NPT Thread	NPT1	NPT3/4										
	G Thread	G1 · 1/2	G1 · 1/4										

Note1: The numerical values listed in the table represent the average performance values for when NRD series models are shipped from the factory. The individual differences between models may result in an error discrepancy of ±10%.

Note2: Noise was measured at a location 1 meter away from pump front, using the A scale.

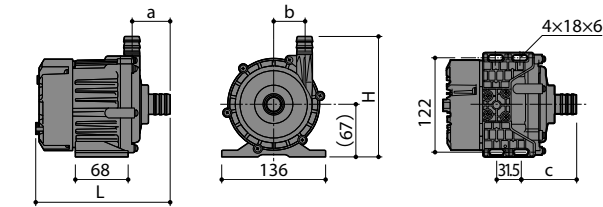
- Test performance using clear water at room temperature.
- The maximum discharge rate is the discharge rate for when the pump head is at 0 meters and the maximum pump head is based on the shut-off total head.
- The viscosity limit of the working fluid is up to 1.0 mPa·s.
- A 500mm option cable is available.
- Specifications/Environmental conditions

NRD-70/70X/100/100X: Ambient temperature: 0 to 50°C, Working liquid temperature: 0 to 80°C, Relative humidity: 35 to 90%RH

NRD-100H: Ambient temperature: 0 to 50°C, Working liquid temperature: 0 to 70°C, Relative humidity: 35 to 90%RH

Please note that the above conditions vary depending on working liquid and heat cycle specifications.

Dimensions in mm



Model	H	L	a	b	c
NRD-70/100	(155)	(170)	48.9	41	(74)
NRD-70X/100X	(162)	(174)	52.6	42	(78)
NRD-100H	(155)	(170)	48.9	41	(74)

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Caution for safety use: Before use of pump, read instruction manual carefully to use the product correctly. Actual pumps may differ from the photos. Specifications and dimensions are subject to change without prior notice. For further details please contact us.

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