

# ARO<sup>®</sup>

# EVO SERIES<sup>™</sup>

THE EVOLUTION IN PROCESS PUMPS

## EVO Series<sup>™</sup> Pump Selection Guide



**IR** Ingersoll Rand<sup>®</sup>

## EVO Series™ Superior by Design

EVO Series™ Pump is the next evolution from ARO®, the trusted brand with almost 100 years of experience in fluid handling solutions.

The EVO Series™ combines the benefits of its industry-leading ARO® portfolio with unique features. This combination never available in one pump creating a ground breaking solution.

*It's time to evolve your expectations of what a pump can do.*

### Built in Control and Monitoring Capability

- Speed and torque control
- Flow / Head adjustment

### Deadhead and Blocked Inlet Capability

(Protects pump and process)

- Able to deadhead and restart when downstream valve is closed/open
- Extended maintenance cycle

### Unique 3 chamber design

- Gives unmatched reliability
- Smooth operation
- Higher flows
- Consistent performance
- Solid handling

### Industry leading continuous use pressure and flow capabilities

### Built in safety features

- Leak detection (auto shutoff)
- Secondary seal/leak containment with no dynamic seal
- Safety and hazardous options
- Low noise level that follow db international standards
- Class 1, Div 2 / IP66 rating / ATEX option

Drive can be controlled via PLC: analog signal or ModBus\*

Custom control through basic pressure and flow (optional)

No maintenance gearbox

Features a long life high abrasive resistance diaphragm

Available in 5 different materials of construction

\* More communication protocol options available upon request.

## EVO Series™ Pumps



**Exclusive / Leak Free Design** - eliminates leakage through primary containment to the environment integrated with a **secondary containment** for fluid and oil, and an automatic **leak detection** as a standard offering that initiates the auto shutoff alarm



**True Deadhead** a closed loop control system allows the pump to come to a complete and immediate stop, while holding and maintaining the line pressure



**High efficiency** with **exceptional energy savings** compared to other positive displacements pumps



**Very Low pulsation** due to the unique three chamber design, no need for pulsation dampener



**Controllability** more controllable than any other positive displacement pump in its range



**IOT ready** full integration through PLC or HMI devices



**Easy installation, Easy serviceability** maintenance in place, even in a small space



### **Durable Design**

- Run dry capabilities
- Self priming
- Ability to handle solids and abrasives
- Extended lifecycle even when ran in high load conditions
- High performance diaphragms
- Low maintenance cost
- Valve shutoff tolerant



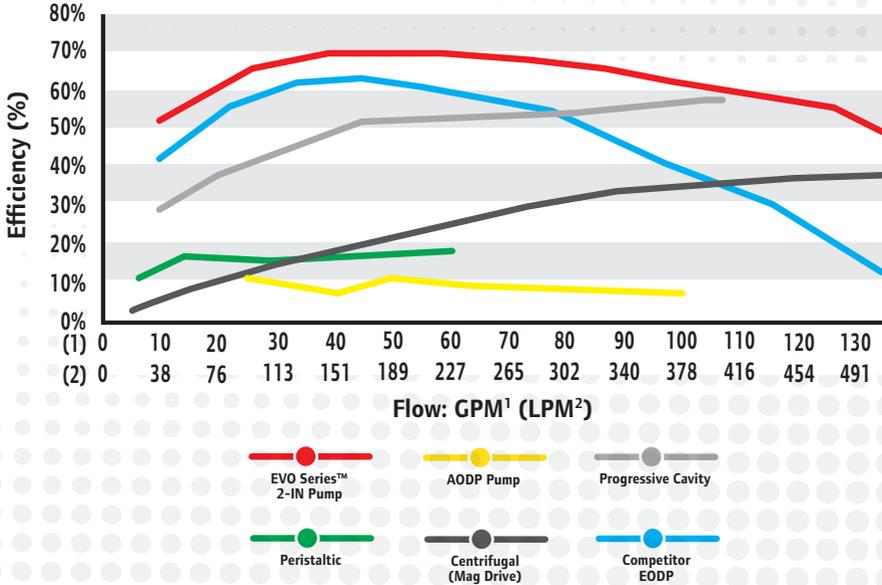
**All in one pump** no need to buy extra accessories



**Hazardous duty certifications** meeting the most pressing worldwide safety standards covering environments with presence of hazardous liquids and gases

## The Best of Energy Efficiency

EVO Series™ provides 70% total efficiency\*, the best energy efficiency of all positive displacement pumps



\* Total efficiency means not only the mechanical and hydraulic efficiency of the motor and gear box, but consider the efficiency of the full system (pump, gear box, motor, drive and any other electric equipment installed) measured on real applications.



### Clean Energy

Ingersoll Rand has a commitment to develop sustainable products as part of a genuine contribution to develop clean energy products to reduce the global carbon footprint.

## Target Industries

**EVO Series™ Process Pump - All in One solution to solve the most difficult application challenges**

### **Cardboard Industry**

**Starch glue circulation:**

- Can run continuously at 4 bar of pressure
- The best solution for high efficiency, reliability, low pulsation and long intervals between maintenance
- Productivity increase with a rapid return of investment



### **Paint and Ink Industry**

**Ink filling application:**

- Heavy duty cycle at intermittent rate
- Full automation and controllability (including deadhead function) that provides cost and process productivity
- Fully automated and integrated system without the need for additional accessories



### **Industrial Waste Water**

**Aggressive waste water transfer:**

- Ability to maintain constant operation at multiple speeds
- Quickly increase flow to discharge a large volume of wastewater based on system requirements
- High efficiency solution for companies that use activated carbon process
- The best solution for overall dosing tasks



### **Construction Waste Water**

**Filter press filling:**

- Hold sufficient deadhead pressure to properly dry out filtered material – also control the density desired for the filtered material
- Increased flow rate compared to a conventional pump from the same size due to torque limit control that promotes maximum suction
- Control the pump from PLC interface to avoid manual operation



## Options for Versatility & High Efficient Process

	1" Metallic and Non-Metallic	2" Metallic and Non-Metallic
<b>Max Flow rate:</b>	54 gpm (204 lpm)	140 gpm (530 lpm)
<b>Inlet pressure:</b>	60 psig (4 bar)	60 psig (4 bar)
<b>Max outlet pressure:</b>	120 psi (8.3 bar)	120 psi (8.3 bar)
<b>Wet suction lift:</b>	29 ft (8.8 m)	30 ft (9.1 m)
<b>Dry suction lift:</b>	14 ft (4.3 m)	18 ft (5.5 m)

## Selection Chart

Pump Type		Size		Wet		Connection		Seat		Balls		Diaphragm	
EP	FULL PACKAGE PUMP	10	1"	A	AL	F	ANSI/DIN with PRV	A	SP	A	SP	A	SP
EB	BARE PUMP	20	2"	C	CI	G	ANSI/DIN w/o PRV	F	AL	S	SS	T	PTFE
				S	SST			H	SS	T	PTFE		
				P	PP**			S	SS				

Note: \* Bare pump only \*\* Ordinary duty version

## Your EVO Series™ Process Pump easily configured through the Smart ARO® Set up (SAS)

Quickly set up your pump in 3 easy steps:

1. Language
2. Motor Power
3. Motor Type

The easy and quick setup of the VFD is designed to save you time with pre-integrated features like leak detects, thermal protection, closed loop control, deadhead timeout, and embedded safety parameters that ensure pump is set with proper boundaries for safe operation.



1", 2"  
Stainless Steel  
Shown with VFD Controller



1", 2"  
Aluminum  
Cast Iron



1", 2"  
Polypropylene



1", 2"  
Hazardous Duty  
(Metallic versions)

Crankcase		Shaft		Bellows		Motor		Drive	
C	CI	S	SPLINE	V	FKM	0	NO MOTOR	0	NO DRIVE
		K	KEYED*			A	STD MOTOR	A	200-2240V STD DRIVE A5 or B1
						B	HAZ MOTOR	B	200-2240V HAZ DRIVE A5 or B1
						C	HAZ MOTOR	C	380-500V STD DRIVE A5



Easily get your pump to  
operational in less than  
one minute

## The best performance compared to other Positive Displacement Pumps

<b>ARO® EVO Series™ VS Others</b> (features by applications requirements)	Positive Displacement			
				
	ARO® EVO Series™	Progressive Cavity	Peristaltic	AODP
<b>Efficiency</b>	●	●	●	●
<b>Deadhead Safety</b> (at zero energy consumption)	●	●	●	●
<b>Dry Self Priming</b> (lift installation)	●	●	●	●
<b>Dry Running</b>	●	●	●	●
<b>Sealless</b> (no packing or mechanical seals)	●	●	●	●
<b>Pulsation</b>	●	●	●	●
<b>Chemical Compatibility</b> (materials vs costs)	●	●	●	●

## Positive Displacement

				
EODP	Lobes	Vaness	Gear	Centrifugal
●	●	●	●	●
●	●	●	●	●
●	●	●	●	●
●	●	●	●	●
●	●	●	●	●
●	●	●	●	●
●	●	●	●	●

## ARO® Service Point

The easiest way to get service in real-time.

### Capabilities Include:

- Individual access using the QR code on the pump
- Download the product - specific operating instructions and all other information available at EVO Series™ pump library
- Direct contact with ARO® customer service
- Spare part inquiry and request for quote at the touch of a button

### Benefits

**EFFICIENT** - Optimize your maintenance processes with our help.

**PRACTICAL** - Optimize your maintenance work and access all pump information digitally in the field.

**DIRECT** - Contact our service team directly from the app.

**RELIABLE** - Reduce errors in spare part purchases.

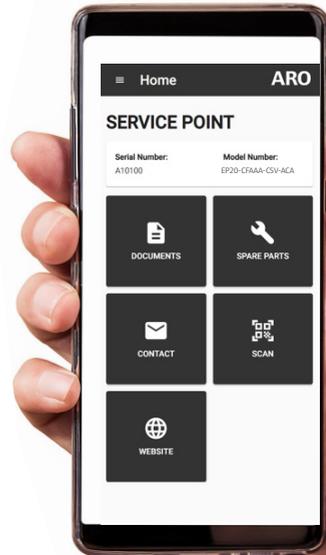
**FAST** - Speed up the order process.

## EVO Series™ on Demand

Take a look at the videos available in our ARO® Fluid Management YouTube channel that include instructions for installation, commissioning, troubleshooting and more.



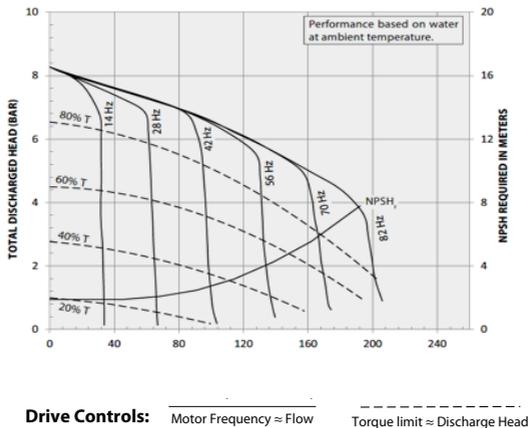
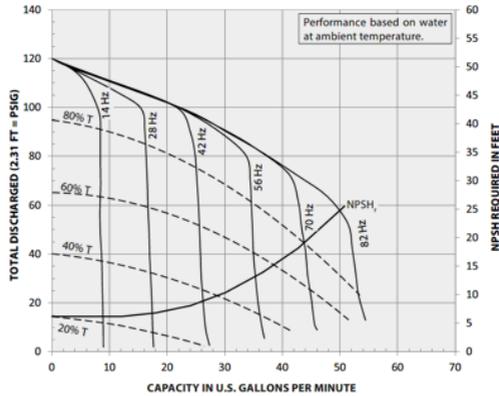
*Demo Scan*



[www.youtube.com/@aropumps](http://www.youtube.com/@aropumps)

# Performance Curves

## 1" Metallic and Non-Metallic

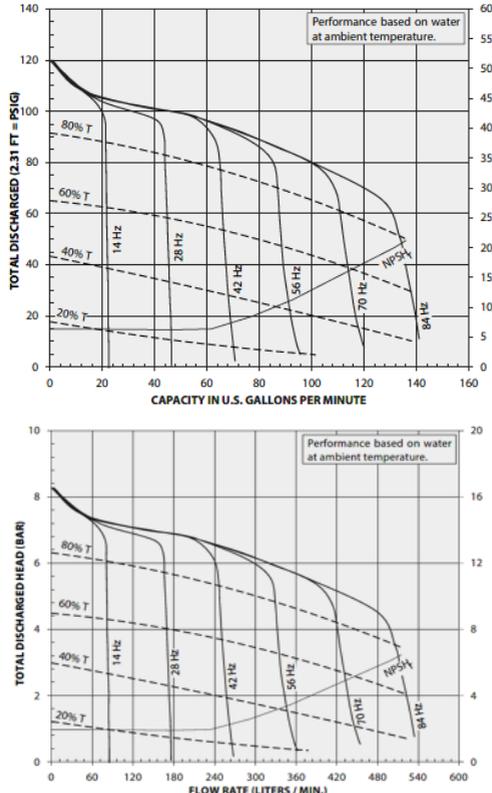


*For Bare pump technical spec, please contact our sales representatives*

There are two primary VFD settings needed to navigate the pump operating map. The commanded frequency will control the pump speed (flw), and the motor torque limit (parameter 416) will limit the maximum torque that the motor will output which will in turn limit the pump pressure. The pump will run at the commanded speed until the back pressure in the system exceeds the motor torque limit shown by the horizontal dotted lines. When this happens, the pump will begin to de-rate its speed to maintain a constant torque output. This will continue until there is zero flw in the system, but full pressure. When the pressure downstream is reduced, the pump will speed up until the speed reaches its commanded frequency. To limit the pressure in the system, the torque limit can be set less than 100%. When backpressure builds, the pump will begin to de-rate its speed at a lower pressure where it intersects its respective curve for that given torque limit.

## Performance Curves

### 2" Metallic and Non-Metallic



**Drive Controls:** Motor Frequency ≈ Flow      Torque limit ≈ Discharge Head

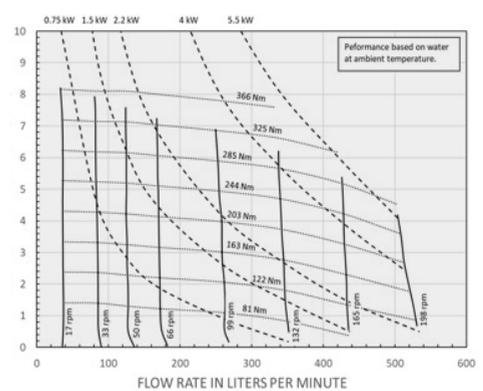
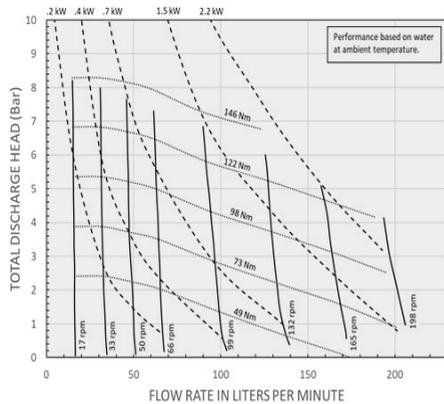
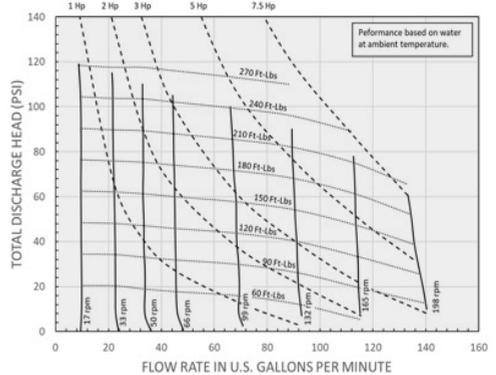
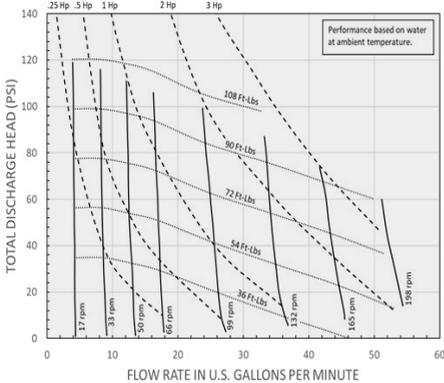
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# Performance Curves

## 1" Metallic and Non-Metallic Bare Pump

## 2" Metallic and Non-Metallic Bare Pump



*For Bare pump technical spec, please contact our sales representatives*

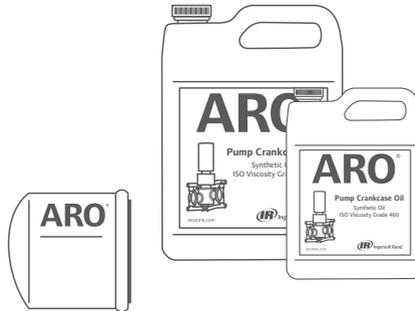
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## ARO® Parts and Accessories

### Service Kits

	1" Metallic	2" Metallic	1" Non-Metallic	2" Non-Metallic
<b>Fluid Section Service Kit:</b> Balls, Diaphragms, Bellows and O-rings	637559-XX*	637555-XX*	637560-XX*	637558-XX*
<b>PRV</b> (Pressure Relief Valve) Service Kit	67557-X *	67557-X *	67557-X *	67557-X *
<b>Crankcase Service Kit</b>	EP10-CXVX-01-A *	EP20-CXVX-01-A *	EP10-CXVS-01-A	EP20-CXVS-01-A
<b>Crankcase Seals Service Kit</b>	637561	637556	637561	637556
<b>Oil and Filter Replacement Kit</b>	637562	637557	637562	637557
<b>Oil Piston Pump Assembly</b>	67558	67558	67558	67558

\*\* (X) See details on next page



## Service Kit Details

	1" Metallic	2" Metallic	1" Non-Metallic	2" Non-Metallic
<b>Balls - Santoprene</b>	637559-AA	637555-AA	637560-AA	637558-AA
<b>Diaphragms - Santoprene</b>				
<b>Balls - PTFE</b>	637559-TA	637555-TA	637560-TA	637558-TA
<b>Diaphragms - Santoprene</b>				
<b>Balls - PTFE</b>	637559-TT	637555-TT	637560-TT	637558-TT
<b>Diaphragms - PTFE</b>				
<b>Balls - 316 SS</b>	637559-ST	637555-ST	637560-ST	637558-ST
<b>Diaphragms - PTFE</b>				
<b>Balls - 316 SS</b>	637559-SA	637555-SA	-	-
<b>Diaphragms - Santoprene</b>				
<b>Crankcase - Aluminum Air Cap</b>	EP10-CSVA-01-A	EP20-CSVA-01-A	-	-
<b>Crankcase - Stainless Steel Air Cap</b>	EP10-CSVS-01-A	EP20-CSVS-01-A	EP10-CSVS-01-A	EP20-CSVS-01-A
<b>PRV - Aluminum</b>	67557-1			
<b>PRV - Cast Iron</b>	67557-2			
<b>PRV - Stainless Steel</b>	67557-3			
<b>PRV - Polypropylene</b>	67557-4			
<b>PRV Inlet - Plug - Aluminum **</b>	98352-4	98352-1	-	-
<b>PRV Inlet - Plug - 1010/1020 Steel **</b>	98352-5	98352-2	-	-
<b>PRV Inlet - Plug - 316L Stainless Steel **</b>	98352-6	98352-3	-	-
<b>PRV Inlet - Plug - Poly **</b>	-	-	98354-4	98354-1
<b>PRV Outlet - Plug - Aluminum**</b>	98349-1	98349-1	-	-
<b>PRV Outlet - Plug - 1010/1020 Steel**</b>	98349-2	98349-2	-	-
<b>PRV Outlet - Plug - 316L Stainless Steel**</b>	98349-3	98349-3	-	-
<b>PRV Outlet - Plug - Poly**</b>	-	-	98351-1	98351-1
<b>Key, Rounded Machine (8 x 12 x 45) **</b>	97995	97996	97995	97996
<b>Plug (3/8") Nylon **</b>	59463-60	59463-60	59463-60	59463-60

\*\* for use in bare pump only



Exactly built and designed by ARO®, Authentic ARO® Parts are the only replacement parts you can count on to restore your ARO® equipment to the equipment's original performance and quality, while backing up your warranty and ATEX hazardous duty certification.

### Why Authentic ARO®Parts?

Without the authentic ARO®name, it does not carry the ARO® promise and runs the risk of subpar chemical, metallurgical, and mechanical properties

And, only Authentic ARO® Parts ensure that our pumps continue to meet the strict requirements for ATEX and CE certifications.

## Contact us for further information



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[arosupport@irco.com](mailto:arosupport@irco.com)