

SMART, SUSTAINABLE, DEPENDABLE

ELECTRICALLY OPERATED DOUBLE DIAPHRAGM PUMPS FOR THE WORLD'S MOST CHALLENGING FLUID TRANSFER APPLICATIONS.



WARREN RUPP, INC.

 $\mathbf{C} \in \langle \mathbf{E} \times \rangle$

Chambers Equiped



ABOUT COGNITO PUMPS

Cognito EODD is a smart, IoT-enabled, electrically operated double diaphragm pump. It is engineered and designed for various industrial applications, considering energy efficiency, safety, reliability, easy to use, maintenance-friendly and long-lasting life.

Operating Principle

The pump is driven by an electric motor with a reduction gearbox. This, in turn, drives an eccentric shaft to operate the diaphragms. When the eccentric shaft rotates and reaches peak on one side, for example, the right side of the chamber, the left side of the chamber simultaneously reaches its valley. This causes the extrusion of the right diaphragm and the intrusion of the left diaphragm. As a result, positive pressure is built on the right side (green) and a vacuum on the left side (blue).

Chamber

Key Benefits

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Smoothly handles highly abrasive, corrosive, shear sensitive and viscous fluids
Highly energy-efficient pump with significant reduction in energy consumption
Robust mechanism delivering hassle-free maintenance
Low MTTR (mean time to repair) and high MTBF (mean time between failures)
Remote performance monitoring of pump
Patented diaphragm designed for better performance and longer life
S Reduced operating cost
C Swift ROI/payback
Robust design
Handles solids
Ultra-efficient
ioT-enabled



Right

Chamber

UNIQUE DESIGN FEATURES

- Oversized diaphragms and reduced stroke length enhances diaphragm life
- Hardened stainless steel stopper cages / seats extends manifold life when pumping abrasive fluids
- Duel secondary static seals protect pumping mechanism from process fluid
- Equipped with leak detection probes protect the people, process and the pump



Product Range					
Size	25 mm (1"), 51 mm (2"), 76 mm (3"), 101 mm (4")				
Max flow	Up to 800 LPM (211 GPM)				
Solid handling	Up to 9 MM (.35")				
Available motor configurations	Vertical and Inline				
Materials of construction					
Pump body	Aluminium, Stainless Steel, Polypropylene				
Elastomers (diaphragms, valve balls)	Neoprene, Santoprene, PTFE, Nitril				
Certifications	CE, ATEX Compliant				

Material Profile		Operating Temperature		
CAUTION! Operating temperature limitations are as follows	Maximum	Minimum		
SANTOPRENE®: Injection-molded thermoplastic elastomer with no fabric layer. Long mechanical flex life. Excellent abrasion resistance.	203°F 95°C	-40°F -40°C		
NEOPRENE: All purpose. Resistance to vegetable oils. Generally not affected by moderate chemicals, fats, greases and many oils and solvents. Generally attacked by strong oxidizing acids, ketones, esters and nitro hydrocarbons and chlorinated aromatic hydrocarbons.	200°F 93°C	-10°F -23°C		
VIRGIN PTFE: (PFA/TFE) chemically inert, virtually impervious. Very few chemicals are known to chemically react with PTFE; molten alkali metals, turbulent liquid or gaseous fluorine, and a few fluorochemicals such as chlorine trifluoride or oxygen difluoride, which readily liberate free fluorine at elevated temperatures.	220°F 104°C	-35°F -37°C		
NITRIL: General-purpose, oil-resistant. Shows good solvent, oil, water and hydraulic fluid resistance. Should not be used with highly polar solvents like acetone and MEK, ozone, chlorinated hydrocarbons, and nitro hydrocarbons.	190°F 88°C	-10°F -23°C		

1" EODD PUMP PERFORMANCE

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Specifications	
Suction/discharge port size	25 MM (1")
Maximum flow rate	110 LPM (29 GPM)
Maximum operating pressure	6 Bar (87 PSI), *8 Bar (116 PSI)
Ambient temperature	-20°C TO +55°C (-4°F to +131°F)
Operating (process fluid) temperature	-10°C TO +120°C (14°F to 248°F)
Solids-handling	UP TO 5 MM (.19")
Heads up to	60, 80* meter
Displacement/stroke	0.3 liter (.26 Gal.)
Maximum suction lift	8.3 meter (26') – wet / 4.5 meter (14') – dry
Motor and gearbox	1.5 HP (1.1 KW), 2 HP (1.5 KW)
Sound level	<80 DB
Material of construction	
1) Pump wetted parts	Aluminium, Stainless Steel, Polypropylene
2) Diaphragm and check ball valve	Nitril, Santoprene, PTFE + Santoprene
*With reduced stroke current APMS	





Notes:

- 1. Use 2 HP/1.5 KW motor for above 2.5 AMPS
- The Performance curve is based on following: Santoprene elastomer fitted pump, flooded suction, water at ambient condition 25°C (77°F), with Cognito Dampener
- 3. The performance result may deviate in excess of 5% based on elastomer
- 4. Performance vary based on viscosity
- 5. NPSH-R curve at 6 BAR maximum discharge condition

Pump specifications may vary by region. Please contact your local sales team for more information. | cognitopump.com/contact

2" EODD PUMP PERFORMANCE

Specifications			
Suction/discharge port size	51 MM (2")		
Maximum flow rate	300 LPM (79 GPM)		
Maximum operating pressure	8 BAR (116 PSI)		
Ambient temperature	-20°C TO +55°C (-4°F to +131°F)		
Operating temperature	-10°C TO +110°C (14°F to 230°F)		
Solids-handling	UP TO 5 MM (0.19")		
Heads up to	80 meter (262 FT)		
Displacement/stroke	1.48 liter (.39 GAL)		
Maximum suction lift	8+ (26') wet / 4.2+ (14') dry *		
Motor and gearbox	5 HP and 3 HP		
Sound level	< 80 DB		
* Applicable for Santoprene and PTFE Diaphragm only For polypropylene, contact IDEX			





Notes:

- 1. Use 5 HP / 3.7 KW motor for above 4 AMPS
- 2. For SPM 161 and 149, contact IDEX Team
- The performance curve is based on following: Santoprene elastomer fitted pump, flooded suction, water at ambient conditions 25°C (77°F), with Cognito Dampener
- 4. The performance result may deviate in excess of 5% based on elastomer
- 5. Performance vary based on viscosity
- 6. NPSH-R curve at 6 BAR maximum discharge condition

3" EODD PUMP PERFORMANCE

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Specifications			
Suction/discharge port size	76 MM (3")		
Maximum flow rate	510 LPM (135 GPM)		
Maximum operating pressure	8 BAR (116 PSI)		
Ambient temperature	-20°C TO +55°C (-4°F TO +131°F)		
Operating temperature	-10°C TO +110°C (14°F TO +230°F)		
Solids-handling	UP TO 7 MM (.27")		
Heads up to	80 meter (262 FT)		
Displacement/stroke	2.9 liter (.76 GAL)		
Maximum suction lift	8+(26') wet / 5.1 (16') dry*		
Motor and gearbox	5 HP and 7.5 HP		
Sound level	< 80 DB		
* Applicable for Santoprene and PTFE Diaphragm only			





Notes:

- 1. Use 7.5 HP / 5.5 KW motor for above 7 AMPS
- 2. For SPM 152 and 133, contact IDEX Team
- The performance curve is based on following: Santoprene elastomer fitted pump, flooded suction, water at ambient conditions 25°C (77°F), with Cognito Dampener
- 4. The performance result may deviate in excess of 5% based on elastomer
- 5. Performance vary based on viscosity
- 6. NPSH-R curve at 6 BAR Maximum discharge condition

4" EODD PUMP PERFORMANCE

Specifications	
Suction/discharge port size	101 MM (4")
Maximum flow rate	800 LPM (211 GPM)
Maximum operating pressure	6 BAR (87 PSI)
Ambient temperature	-20°C TO +55°C (-4°F TO +131°F)
Operating temperature	-10°C TO +110°C (14°F TO +230°F)
Solids-handling	UP TO 9 MM (.35")
Heads up to	60 meter (196 FT)
Displacement/stroke	4.75 liter (1.25 GAL)
Maximum suction lift	8+(26') wet / 5.1 (18') dry*
Motor and gearbox	7.5 HP & 10 HP
Sound level	< 80 DB
* Applicable for Santoprene and PTFE Dia	phragm only





Notes:

- 1. Use 10 HP / 7.5 KW motor for above 10 AMPS
- 2. For SPM 130 and 114, contact IDEX Team
- 3. The performance curve is based on following: Santoprene elastomer fitted pump, flooded suction, water at ambient conditions 25°C (77°F), with Cognito Dampener
- 4. The performance result may deviate in excess of 5% based on elastomer
- 5. Performance vary based on viscosity
- 6. NPSH-R curve at 6 BAR maximum discharge condition

GENERAL ARRANGEMENT DRAWINGS



Dimensions & Weight - Inline

Dimensions & Weight Details - Inline		101 MM (4")	76 MM (3")	51 MM (2")
Aluminium				
Height (mm)	Α	830	700	600
Width (mm)	В	1010	840	735
Length (mm)	С	1520	1295	1060
Approx. Shipping Weight (Kg) Bare Pump	W	486	271	143
Approx. Shipping Weight (Kg) Pump + Motor + Gear Box	W	652	397	239
Stainless Steel				
Height (mm)	А	830	700	570
Width (mm)	В	1010	840	735
Length (mm)	С	1520	1295	1060
Approx. Shipping Weight (Kg) Bare Pump	w	546	311	169
Approx. Shipping Weight (Kg) Pump + Motor + Gear Box	W	712	437	265
Polypropylene				
Height (mm)	А			
Width (mm) B				
Length (mm)				
Approx. Weight (Kg)	W			

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Dimensions & Weight - Vertical

Dimensions & Weight Details - Vertical	101 MM (4")	76 MM (3")	51 MM (2")	
Aluminium				
Height (mm)	Α	1250	1050	970
Width (mm)	В	1000	840	735
Length (mm)	С	1120	825	775
Approx. Shipping Weight (Kg) Bare Pump	W	466	251	123
Approx. Shipping Weight (Kg) Pump + Motor + Gear Box		632	377	219
Stainless Steel				
Height (mm)	А	1200	1050	970
Width (mm)	В	1010	840	735
Length (mm)	С	1015	825	775
Approx. Shipping Weight (Kg) Bare Pump	w	526	291	149
Approx. Shipping Weight (Kg) Pump + Motor + Gear Box		692	417	245
Polypropylene				
Height (mm)	Α			
Width (mm) B				
Length (mm)	С			
Approx. Weight (Kg)	W			

Pump specifications may vary by region. Please contact your local sales team for more information. | cognitopump.com/contact

GENERAL ARRANGEMENT DRAWINGS





Dimensions & Weight Details - Vertical		25 MM (1")
Aluminium		
Height (mm)	A	720
Width (mm)	В	495
Length (mm)	С	560
Approx. Shipping Weight (Kg) Pump + Motor + Gear Box	w	90
Stainless Steel		
Height (mm)	A	1200
Width (mm)	В	1010
Length (mm)	С	1015
Approx. Shipping Weight (Kg) Pump + Motor + Gear Box	w	95
Polypropylene		
Height (mm)	A	
Width (mm)	В	
Length (mm)	С	
Approx. Weight (Kg)	W]

WORKING PRINCIPLE

A pulsation dampener uses a flexible diaphragm to separate a liquid chamber from a compressed air chamber. A rod connected to the center of the diaphragm activates the air inlet and exhaust, which automatically admits or exhausts air to the air chamber. This maintains the diaphragm in mid-range stroke to eliminate flow pulsation and pressure spikes.

Cognito Dampeners are suitable for EODD pump models and are available in Aluminium and stainless-steel wetted housings.

Technical Specification

Dampener Size	Compatible Pump Size	Air Inlet Size	Max Pressure	Fluid Port	
1"	1"	1/8" NPT	116 PSI (8 bar)	1" NPT / BSP Female Threaded Port	
	1"	1/8" NPT	116 PSI (8 bar)	2" 150# ANSI	
2"	1.5"	1/8" NPT	116 PSI (8 bar)	2" 150# ANSI	
	2"	1/8" NPT	116 PSI (8 bar)	2" 150# ANSI	
2"	3"	1/8" NPT	116 PSI (8 bar)	3" 150# ANSI	
3	4"	1/8" NPT	116 PSI (8 bar)	3" 150# ANSI	
Working Ambient Temperature			-20°C (-4°F) to +55°C (131°F)		
Operating Temperature			-10°C (14°F) to +90°C (194°F)		

Note: Contact Warren Rupp for Polypropylene Dampener

Dimensional Drawing

1" Dampener Model: IAX & 25AX 1/8" NPT AIR INLET IS" NPT AIR INLET IS" NPT AIR INLET IS" NPT AIR INLET IS IN THREAD IS IN THREAD

All Dimensions +/- 3mm [0.13 in] Where X is Diaphragm Material

Material of Construction

Size	Model	Wetted Parts			
	Number	Body	Diaphragm		
	1AS/25AS	Aluminium	Santoprene		
411	1AP/25AP	Aluminium	Santoprene Backup / PTFE		
	1SS/25SS	Stainless Steel	Santoprene		
	1SP/25SP	Stainless Steel	Santoprene Backup / PTFE		
	2AS	Aluminium	Santoprene		
2" -	2AP	Aluminium	Santoprene Backup / PTFE		
	2SS	Stainless Steel	Santoprene		
	2SP	Stainless Steel	Santoprene Backup / PTFE		
	3AS	Aluminium	Santoprene		
0"	ЗАР	Aluminium	Santoprene Backup / PTFE		
3	3SS	Stainless Steel	Santoprene		
	3SP	Stainless Steel	Santoprene Backup / PTFE		

• Do Not Run Dampener Without Air Supply

Stainless Steel Dampener

COGNITO

-072

103mm

[4.06in]

Sid

ΗF

Ø 206mm

[8.11in]

Model: 1SX & 25SX

1/8" NPT AIR INLET

- Recommended Air Inlet Pressure: 14 PSI (1 bar) Higher from the Discharge Pressure
- This Dampener is Automatic Air Controlling Type

400mm 15.76in

301mm 11.84in

FLUID PORT 1 : 1'' NPT THREAD

25 : 1" BSP THREAD

64mm 2.52in

10 Pump specifications may vary by region. Please contact your local sales team for more information. | cognitopump.com/contact

COGNITO^M

2" Dampener



All Dimensions +/- 3mm [0.13 in] Where X is Diaphragm Material

3" Dampener



All Dimensions +/- 3mm [0.13 in] Where X is Diaphragm Material

COGNITOSMARTINSIGHTS

monitoring

COGNITOsmartINSIGHTS is a web-based portal that can be accessed from anywhere and provides real-time updates for all your installed Cognito pumps helping you remotely monitor critical applications.



COGNITOsmartINSIGHTS helps you to connect, monitor and analyze your equipment remotely, enabling you to make better and faster decisions to optimize your equipment performance and improve overall process efficiency. Its advanced smart technology creates instant alerts for any abnormalities to enhance the process.

Actionable

insights

data integrity

Remote health

monitoring*

*Only available in specific regions. Please contact your local sales rep to learn more.

department

Preventive maintenance

alerts

Applications

- Slip transfer
- Slurry transfer
- Filter press
- Glaze transfer
- Ball mill unloading









Latex

Applications

- Slurry transfer
- Emulsion transfer
- Resin transfer
- Solvent transfer
- Final paint (water based) transfer to final filler (packing)

Applications

- Filter press
- Sludge transfer
- Starch & dye transfer
- AFR (alternate fuel & raw material) transfer-cement industry
- PCC and GCC (precipitated calcium carbonate & ground calcium carbonate) transfer-paper industry



Cement

Water and Wastewater Treatment

Packaging



Applications

- Latex transfer
- Glue transfer
- Solvent & chemical transfer
- Lacquer transfer

cognitopump.com

Cognito, a Warren Rupp brand, specializes in thoughtfully engineered electrically operated double diaphragm pumps and accessories. Our products are designed to transfer the most challenging fluids efficiently, safely, and dependably. Our goal is to deliver unparalleled reliability, ease of use, and simplified maintenance for long-lasting customer satisfaction. For further information on Cognito and its products, visit: Website at www.cognitopump.com

in /cognitopump

- @CognitoEODD
- cognitopump.com/contact

About Warren Rupp

For over 50 years, Warren Rupp, Inc. has been a leading manufacturer of pumps. The company was founded on the principle of building 'new and different pumps' as the 'Originators in Pumping' by Warren E. Rupp and Charles E. Young, Jr. in Mansfield, Ohio, in 1965.

Today, Warren Rupp's engineered solutions for various industrial markets are sold worldwide through a network of independent, factory-authorized distributors. Our products and services are marketed in over 60 countries and in nearly every major trading area. We continue to enable customers to make better-informed pump choices for their applications. There is no other pump type on the market today that is universally applicable and so responsive to pumping problem fluids like our pumps. For further information on Warren Rupp and its business units, visit the company's website at warrenruppinc.com



Why Warren Rupp?



APPLICATIONS ENGINEERING, CUSTOMER SERVICE, AND AFTER SALES SUPPORT

From product selection, to troubleshooting, our team of experts is ready to help.



Ensures product performance and drives product enhancements.



Providing product expertise, personalized service, and after sales support.



Provide guaranteed quality and ease of maintenance.

About IDEX Corporation

IDEX designs and builds engineered products and mission-critical components that make everyday life better. Founded in 1988 with three small, entrepreneurial manufacturing companies, IDEX now includes more than 50 diverse businesses around the world, and manufacturing operations in more than 20 countries. For further information on IDEX Corporation and its business units, visit the company's website at www.idexcorp.com.





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