

Installation, Operation & Maintenance Manual



Certified Quality



Higher Energy Efficiency



Swift ROI/ Payback



Self-Priming



Seal-Less Pump



Higher Flowrate



Containment Chamber Equipped with Leak Detection



Predictive Maintenance & Remote Monitoring



Low Maintenance Cost



Handling Slurries and Abrasive Fluids made economical



Trusted Solutions,
Improving Lives™

EODD-IOM-VER-A-SEPT 2025

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⚠ WARNING

INSTALLATION IN HAZARDOUS DUTY APPLICATIONS:

Pumps that will operate in environments defined as “hazardous locations” must only be installed, connected and set-up by qualified personnel with knowledge and understanding of protection classes, regulations and provisions for apparatus in hazardous areas, for the region where the pump will operate, because these regulations and provisions, along with the definition of what constitutes hazardous areas vary by location.

HAZARDOUS PRESSURE:

Can result in serious injury or property damage. Do not service or clean pump, hoses or dispensing valve while the system is pressurized. Disconnect and lockout / tagout power supply to electric motor and VFD. Relieve pressure from the system by opening dispensing valve or device and / or carefully and slowly loosening and removing outlet hose or piping from pump.

Excessive Fluid Pressure:

Fluid pressure developed by the pump should not exceed the maximum pressure as stated on the pump model plate. Be sure material hoses and other components are able to withstand fluid pressures developed by this pump. Check all hoses for damage or wear.

HAZARDOUS MATERIALS:

Safe handling practices must comply with local and national laws and safety code requirements. Obtain Material Safety Data Sheets on all materials from the supplier for proper handling instructions. Check before sending pump to factory. Do not attempt to return a pump to the factory or service center that contains hazardous material

EXPLOSION HAZARD:

Models containing aluminum wetted parts cannot be used with Methylene Chloride, 1-1-1-Trichloroethane or other Halogenated Hydrocarbon solvents. These may react and explode. Check all wetted parts to assure compatibility before using with process fluid.

ELECTRIC SHOCK HAZARD:

Pump must be grounded. Improper grounding, setup, or usage of the system can cause electric shock. Turn off and remove power before servicing or installing equipment. Connect only to grounded power source. All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

STATIC SPARK.

1. Sparks can ignite flammable material and vapors & can cause explosion resulting in severe injury or death.
2. The pumping system must be grounded when it is pumping, flushing, recirculating or spraying flammable materials.
3. Secure pump, connections and all contact points to avoid vibration and generation of contact or static spark.
4. Comply to local building codes and electrical codes for specific grounding requirements.
5. After grounding, periodically verify continuity of electrical path to ground. Test with an ohmmeter from each component (e.g., hoses, pump, clamps, container, spray gun, etc.) to ground to ensure continuity. Ohmmeter should show 0.1 ohms or less.
6. Submerge the outlet hose end, dispensing valve or device in the material being dispensed if possible. (Avoid free streaming of material being dispensed.)
7. Use proper ventilation.

When used for toxic or aggressive fluids, the pump should always be flushed prior to disassembly.



Before maintenance or repair, shut off the motor and bleed the pressure from the pump. Be certain that approved eye protection and protective clothing are worn at all times. Failure to follow these recommendations may result in serious injury.

⚠ CAUTION

CHEMICAL COMPATIBILITY:

Check the chemical compatibility of the pump wetted parts and the substance being pumped, flushed or recirculated before using. Chemical compatibility may change with temperature and concentration of the chemical(s) within the substances being pumped, flushed or circulated. For specific fluid compatibility, consult the chemical manufacturer.

HOT SURFACE:

Precautions should be taken to restrict access to hot surfaces when needed. Metallic wetted sections can reach up to the same temperature as the fluid temperature (up to 100°C). Proper personal protective equipment (PPE) for hot surfaces should be worn. Check to ensure parts have cooled down sufficiently prior to any maintenance

When the Pump is used for the process fluid whose temperature is higher than the Ambient temperature or >50°C, the user should provide proper heat insulation or take necessary precautions to avoid burns.

Do not use the pump for the structural support of the piping system. Ensure the system components are properly supported to prevent stress on the pump parts.

Ensure all operators of this equipment have been trained for safe working practices, understand its limitations, and wear safety goggles / equipment when required.

Nonmetallic pumps and plastic components are not UV stabilized. Ultraviolet radiation can damage these parts and negatively affect material properties. Do not expose to UV light for extended periods of time.

Pressure relief valving or equivalent safeguards are required to prevent excess pressure on the discharge piping system.

The pump is pressurized internally with pressure during operation. Make certain that all fasteners and piping connections are in good conditions and are reinstalled properly during reassembly. Use safe practices when lifting.

⚠ IMPORTANT

Read the safety warnings and instructions in this manual before pump installation and start-up. Failure to comply with the recommendations stated in this manual could damage the pump and void factory warranty.

When the pump is used for materials that tend to settle out or solidify, the pump should be flushed after each use to prevent damage. In freezing temperatures the pump should be completely drained between uses.

Torque all Fasteners before operation. Keep regular check. Creep of housing and gasket materials may cause fasteners to loosen.

Torque all fasteners to ensure against fluid or air leakage.

Pump installation floor must be flat, slope angle must be less than 5°

Machine will be off than only man interaction with the machine

If Power supply failure machine cannot start unexpectedly.



PUMP STICKERS

	WARNING Warm Surface. • Do not touch, allow the surfaces to cool before servicing
--	--

	WARNING Rotating Parts Crush & Cut • Do NOT Operate with Cover Removed. • Follow Lockout procedure Before Servicing
--	---

	NOTICE • Read and Understand the Manual Before Operating or Servicing the machine. • Do NOT Operate without guard or cover properly installed
--	--

	NOTICE • Use The RECOMMENDED Star torque pattern and values for the diaphragm cover, Failure may result in damage to Equipment • Follow Lockout procedure Before Servicing
--	---

	WARNING • This Machine starts AUTOMATICALLY
--	---

NOTICE • Use The RECOMMENDED Star torque pattern & values for the diaphragm cover, Failure may result in damage to Equipment • Follow Lockout procedure Before Servicing

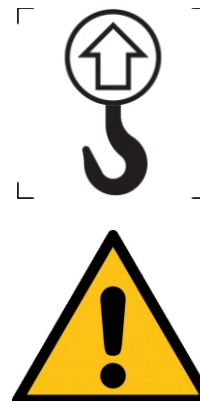
WARNING Warm Surface. Do NOT Touch, Allow the surfaces to cool before servicing

NOTICE • Follow the instruction, prior to starting the equipment. • Check the oil level • Clean the vent filter • Open Inlet and outlet valves connected • Follow the safety protocol's

 Check the oil level Before starting the machine	NOTICE
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 • Clean air filter daily, Failure to do so may cause the Equipment to Overheat & Malfunction	NOTICE
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 • Do note close the Inlet or outlet valve, While the pump is in Operation, close the Valves only when the Pump is "switched off"	NOTICE
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 Danger 415 volts



WARNING Hazardous Voltage Contact may cause electric shock or burn. Turn off & lock-out system power before servicing.

REQUIRED PPE'S

Personal protective equipment must be worn



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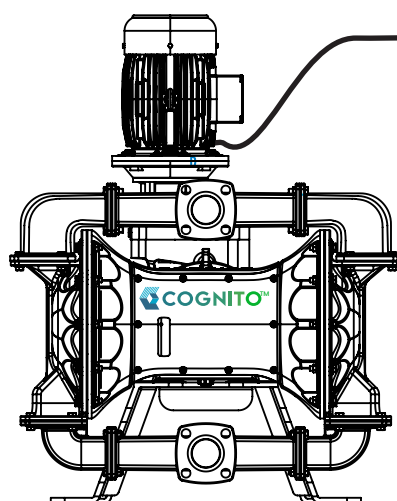
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1.0 INTRODUCTION

Cognito is a brand of IDEX Corporation which is committed to offer highly engineered products and services to solve customers' mission-critical problems and address their pain points.

Cognito pumps are Smart IoT enabled Electrically Operated Double Diaphragm Pumps designed with a robust mechanism to satisfy every customer's demands for increased production efficiency & to lower total cost of ownership while facilitating smooth handling of variety of fluids & slurries. With proper attention to installation & maintenance, Cognito EODD pumps will give efficient and trouble-free operation.



Read the safety warnings & instructions in this manual before pump installation and start-up. One must strictly follow the IOM manual to avoid injury and life hazard which may occur otherwise. Failure to comply with the recommendations stated in this manual could damage the pump and void factory warranty. In case any instruction in this manual is unclear or any information is missing, please contact Cognito Team.

Read, Understand and Follow this information to avoid injury and Property Damage / Pump Damage

2.1 Lifting & Transportation

Follow below instructions to move the EODD pump to the required location:



Figure - 1

1. The pump is provided with two lifting hooks as shown in Figure - 1.
2. Lift the pump only from these two points
3. Lifting the pump from any other points may cause damage to the pump as well as injury to the person
4. While relocating the pump, make sure to decouple from the pipeline only after releasing the pressure & disconnecting the power supply.
5. Ensure adequate clearance around the pump for sufficient access and ventilation.

2.2 Storage

If the equipment is to be stored prior to installation, follow below instruction

1. EODD pumps should be flushed with the compatible media and should be stored in a dry & dust free location protected from impacts and vibrations. Storage temperature should be in between 15° C to 35° C & relative humidity below 70%.
2. Do not remove the protective covers from the pump before use.
3. In case of long-term storage, consult IDEX.

2.3 Unpacking

After you unpack the pump, and before you use it for the first time, follow below instruction

1. Check if the information on the nameplate correspond to the ordered pump configuration.
2. Make sure all parts and accessories listed on the packing list are as per the ordering.
3. Check for any damage which may be caused by inappropriate handling during shipment.
4. Immediately report out any damage or material shortage to the transport company and to the manufacturer.

Before pump operation, inspect all gaskets and fasteners for any looseness caused due to gasket creep. Re-torque loose fasteners to prevent leakage.

2.4 **Health & Safety**

The pumps are designed to handle different applications. Do not use the pump on the application / media different from that for which it was ordered without consulting the manufacturer.

The pumps are tested with water at our facility. If your pumped product has the chances to react with water, please make sure the pump is completely dry before operation.

2.5 **Qualification of personnel**

The personnel in charge of the installation, commissioning and maintenance of the EODD pumps should be qualified, experienced and authorized personnel. The safety of people, animals and property must be ensured while handling these pumps.

2.6 **Chemical hazard**

Verify the chemical compatibility of the pump wetted parts and the substance being pumped, flushed or re-circulated. For specific fluid compatibility, consult IDEX. Whenever the pump is to be used for pumping a different fluid, it is essential to clean the pump beforehand in order to avoid any possible reaction between the two products.

When used for toxic or aggressive fluids, the pump should always be flushed prior to disassembly. User must ensure chemical compatibility, and any pressure / temperature limits are not exceeded. If pump is not used for long period, care must be taken when restarting. If in any doubt, remove pump from line and flush with a suitable cleaner. Solidified deposits within the pump may cause damage to the diaphragms.

2.7 **Electric hazard**

Do not carry out any maintenance or/and operation on the pump while it is in operation.

Check the specification

of power supply before operation.

2.8 **Temperature hazard**

While operating the pump, the mechanical parts and the gear-motor surface temperature should not exceed

2.9 **Grounding the pump**

Take action to prevent static sparking. Fire or explosion can result, especially when handling flammable liquids. Make sure pump is grounded by connecting the earthing wire to the motor housing.

2.10 **Safety during maintenance or repair**

Before maintenance or repair, switch off the motor. Shut off the compressed air lined, bleed the pressure, and disconnect the air line from the pump. Wear protective clothing and safety goggles when operating and /or working in the vicinity of Cognito Pump. Failure to follow these recommendations may result in serious injury.

2.11 **Spare parts replacement**

The use of non-OEM replacement parts will void agency certifications and warranty clause. We recommend to use only OEM replacement parts

3.0 TECHNICAL SPECIFICATIONS

3.1 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).

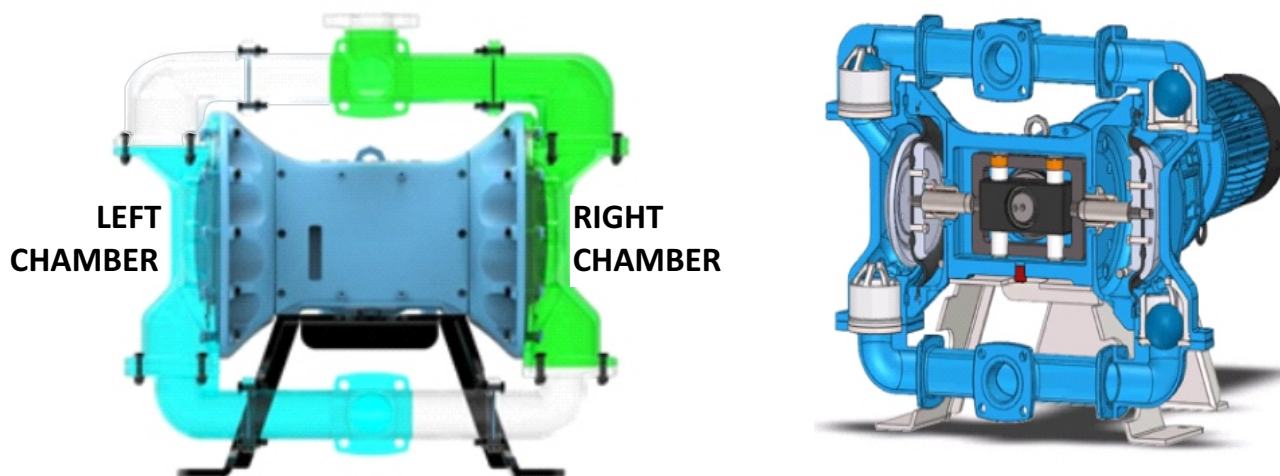


Figure-2: Working Mechanism

3.2 Pump

Pump Specification

COGNITO EODD - SIZE: MM (IN)		101 (4")	76 (3")	51 (2")	25 (1")
Operations		Electric	Electric	Electric	Electric
Max. Flow	lpm (gpm)	800 (211)	510 (135)	300 (79)	110 (29)
Max. Operating Pressure	bar (psi)	6 (87)	6 (87)	8 (116)	6 (87) or 8 (116)**
Max. Suction Lift (ref.: tested with water)	m (ft)	8+ (26') Wet / 5.1 (18') Dry*	8+ (26') Wet / 4.2 (14') Dry*	8+ (26') Wet / 4.2 (14') Dry*	8+ (26') Wet / 4.2 (14') Dry*
Material of Construction:					
a) Pump	-	Aluminum /S.S			
b) Diaphragm & Check ball valve	-	***Neoprene / Santoprene®/ PTFE / **** Nitrile			
Motor & Gearbox	kW (hp)	10	7.5	5, 3	2
Sound Level	db		<80		
Solid Handling	mm (in)	9 (.35")	7 (.28")	5 (.19")	3 (.11")
Max. Heads	m (ft)	60 (196')	60 (196')	80 (262')	60 (196'), 80 (262')**
Displacement per cycle	l (gal)	4.72 (1.24)	2.88 (.76)	1.48 (.39)	.6 (.16)

* Applicable for Santoprene & PTFE Diaphragm only

** With reduced stroke length

*** Not available for 25MM (1") and 51 MM (2") model

**** Only available for 25 MM (1") models

Maximum Temperature Limits

	Min.	Max.
Ambient Temperature	-20 °C / -4 °F	55 °C / 131 °F
Process Fluid Temperature	-10 °C / 14 °F	120 °C / 248 °F
Fluid Temperature should be further limited for the following material of Diaphragm used in the wetted sections :		
Neoprene	-10 °C / 14 °F	77 °C / 170 °F
Santoprene®	-10 °C / 14 °F	92 °C / 197 °F
PTFE	-10 °C / 14 °F	120 °C / 248 °F

Warning

1. Maximum fluid temperature as specified in above table should never be exceeded to maintain hazardous area surface temperature nameplate rating.
2. Do not allow fluids to freeze inside the pump.

Note: Santoprene® is a registered trademark of Celanese

3.3 Motor

3.3.1. Safe Area Motor Specification

Type	3Phase AC Induction Motor
Rating	1.5 hp (1.1 kW) 2 hp (1.5 kW) 3 hp (2.2 kW) 5 hp (3.7 kW) 7.5 hp (5.5 kW) 10 hp (7.5 kW)
Pole	4 POLE
RPM	~1450 at 50 Hz or ~1750 at 60 Hz
EFF Level	IE3
Frame Size	IEC 112M (5 hp) IEC 132S (7.5 hp) IEC 132M (10 hp) IEC 90L (2 hp) IEC 90S (1.5 hp)
Drive	VFD (Inverter) capable recommend
Power Supply	>200 V, 3 Phase, 50 or 60 Hz
Motor Enclosure	TEFC or as the motor manufacturer recommends per application
Application Area	SAFE (Non-Hazardous Environments)
Type of Protection	IP55
Temperature	Amb 50°C / 122 °F
Insulation Class	F
Mounting	Flange or Face (must match Gearbox interface)
TB Position	AS PER MFG. STANDARD
Lifting	2X Lifting Eye Casted or Fitted

3.3.2 Hazardous Area Motor Specification

Type	3Phase AC Induction Motor
Rating	1.5 hp (1.1 kW) 2 hp (1.5 kW) 3 hp (2.2 kW) 5 hp (3.7 kW) 7.5 hp (5.5 kW) 10 hp (7.5 kW)
Pole	4 POLE
RPM	1450 RPM
EFF Level	IE3
Frame Size	IEC 90S (1.5 hp) IEC 90L (2 & 3 hp) IEC 112M (5 hp) IEC 132S (7.5 hp) IEC 132M (10 hp)
Power Supply	415 $\pm$ 10V, 3 Phase, 50 $\pm$ HZ, 0.8 PF
Motor Enclosure	Flameproof Enclosure
Application Area	SAFE (Non-Hazardous Environments)
Type of Protection	IP55
ATEX Marking	Ex II 2G Ex db IIB T5 - T3 Gb / Ex II 2D Ex db IIB T5 - T3 Db
IECEx Marking	Ex db IIB T5 - T3 Gb / Ex db IIB T5 - T3 Db
Temperature Class	T5 - T3
Temperature	Amb - 20°C to 55 °C
Atex Standard Complies	EN/IEC: 60079-0 & EN/IEC: 60079-1
Th CI / Temp. Rise	F / B
Mounting	FLANGE
TB Position	AS PER MFG. STANDARD
Cable Entry	M20 X 1.5 (1 Nos.) Or As OEM Specified
Duty	S1
Starter Details	VFD Compliance
Harmonized Standards	EN IEC 60079-0:2018, ISO 80079-36:2016 & ISO 80079-37:2016
Statutory Requirement	IEC Metric Standard

3.3.3 Recommended NEMA AC Motor Specification

Type	3Phase AC Induction Motor
Rating	2 hp (1.5 kW) 5 hp (3.7 kW) 7.5 hp (5.5 kW) 10 hp (7.5 kW)
Pole	4 POLE
RPM	~1450 at 50 Hz or ~1750 at 60 Hz
EFF Level	NEMA Premium or IE3
Frame Size	NEMA 140T (2 hp) NEMA 184T (5 hp) NEMA 213T (7.5 hp) NEMA 215T (10 hp)
Drive	VFD (Inverter) capable recommend
Power Supply	>200 V, 3 Phase, 50 or 60 Hz
Motor Enclosure	TEFC or as the motor manufacturer recommends per application
Application Area	SAFE (Non-Hazardous Environments)
Type of Protection	IP55
Temperature	Amb 50°C / 122 °F
Insulation Class	F
Mounting	Flange or Face (must match Gearbox interface)
TB Position	AS PER MFG. STANDARD
Lifting	2X Lifting Eye Casted or Fitted

Note: Consult motor manufacturer for recommendations with AC motor specifications in hazardous environments (explosive or fire) or DC motor specification per the end user application.

3.4 Gearbox

Gearbox Specification

Type	Inline Helical Bevel Helical
Rating	1.5 hp (1.1 kW) 2 hp (1.5 kW) 3 hp (2.2 kW) 5 hp (3.7 kW) 7.5 hp (5.5 kW) 10 hp (7.5 kW)
Output Shaft Mounting	Single Solid Shaft B5 Flange Mounted
Input Configuration	Metric IEC Motor Ready Input
Motor Mounting	Flange or Face (must match AC Motor)
Motor Mount at Gearbox	See motor frame sizes on previous page
Drain Plug Position	Bottom of Body
Filling Plug Position	Top of Body
Oil Grade	ISO VG 320 Mineral Oil
Service Factor	1.5 minimum (reciprocating pump loading)
Minimum Torque Capacity Rating	250 Nm (1"/1.5" pump) 560 Nm (2" pump) 900 Nm (3" pump) 1550 Nm (4" pump)
Output Speed when using VFD with Motor	Pump Size & SPM (RPM) 1"/1.5" -128 2" - 115 3"- 92 4" - 92
Lifting Point	1x Lifting Eye Casted or Fitted

3.5 Cognito Pulsation Dampener

Pulsation Dampener plays a very important role in Positive Displacement Pumps to reduce pulsations & vibrations during pump operation, thus ensuring continuous & precise non-pulsed flow rate.

Cognito Dampeners are designed to provide vibration free smooth continuous flow that makes this component a suitable equipment for safeguarding the system.

It maintains a constant volume of air support at diaphragm by automatically adjusting to the current pressure and thereby absorbing the pulse.

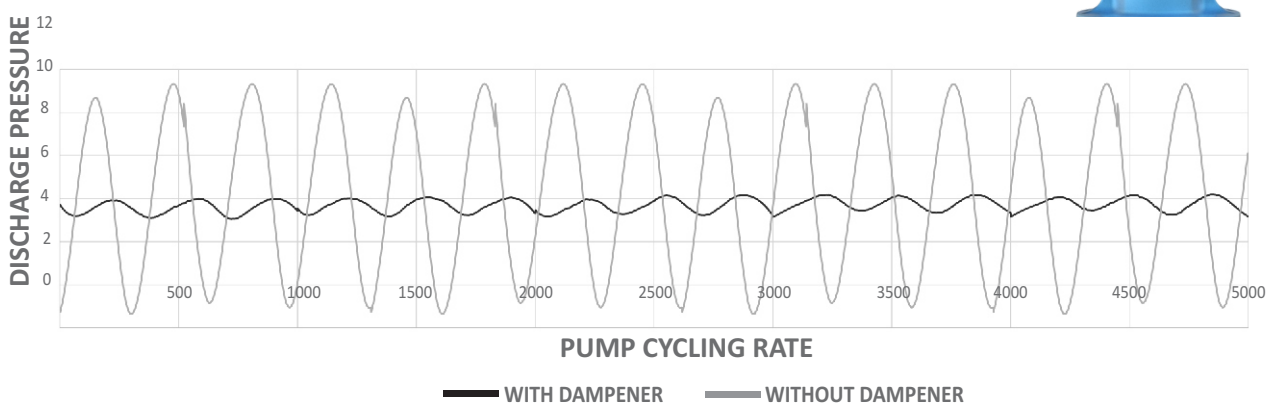
Working Principle

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

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

Recommended Air Inlet Pressure : 1 bar higher from the Discharge Pressure

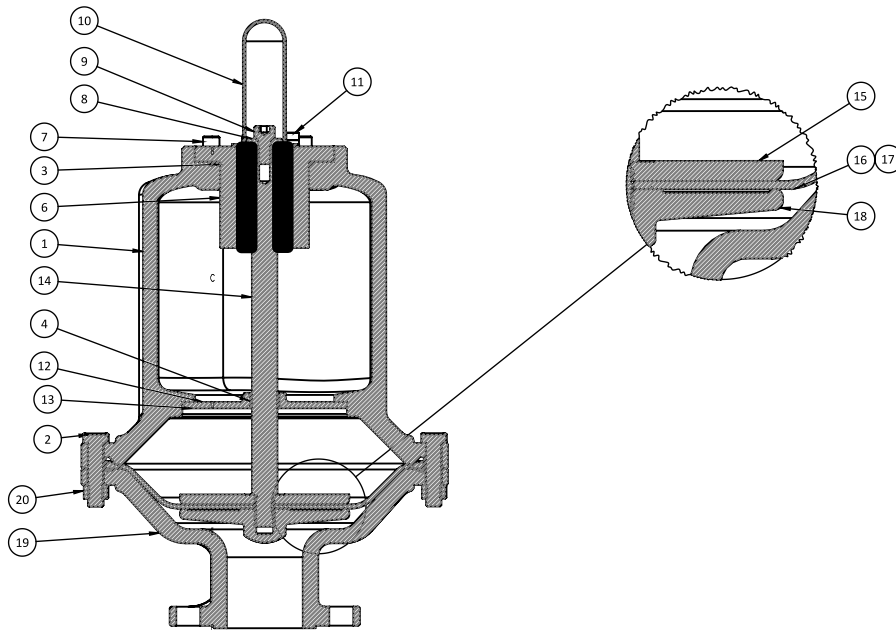
COGNITO DAMPENER PERFORMANCE: Dampening 90+% for all the sizes



TECHNICAL SPECIFICATION				AVAILABLE WETTED MATERIALS				
DAMPENER SIZE	COMPATIBLE PUMP SIZE	AIR INLET SIZE	Max. Pressure	Wetted Parts			Diaphragm	
				AI	SS	PP	SANTOPRENE	SANTOPRENE PTFE OVERLAY
1"	1"	1/8" NPT	8 bar	YES	YES	CONTACT IDEX	YES	YES
2"	1.5"	1/8" NPT	8 bar	YES	YES	CONTACT IDEX	YES	YES
2"	2"	1/8" NPT	8 bar	YES	YES	CONTACT IDEX	YES	YES
2"	3"	1/8" NPT	8 bar	YES	YES	CONTACT IDEX	YES	YES
3"	4"	1/8" NPT	8 bar	YES	YES	CONTACT IDEX	YES	YES

Note: Refer to the Dampener manual for more information.

Cut section of Dampener



Size : 1"			
Item No	Part Code	Description	Qty
1	88950001	TOP DOME, ALUMINUM	1
2	26650003	M8 HEX BOLT, BLACKODIZED	8
	26650005	M8 HEX BOLT, SS	8
3	26630001	Sleeve O-RING	1
4	26610001	BUSH BEARING	3
5	26610002	SEALS	3
6	88950004	DAMPENER SLEEVE	1
7	26650002	LOCK NUT	1
7A	26600091	LOCK WASHER	1
8	88930006	STOPPER PIN	1
9	26630003	M10 SOCKET HED CAP SCREW	1
10	88930008	DUST CAP, BLACK	1
11	26600045	M6 SOCKET HEAD CAP SCREW	2
12	88950003	BUSH PLATE, ALUMINUM	1
13	26650001	M4 SOCKET HEAD CAP SCREW	2
14	88950005	DAMPNER ROD	1
15	88950008	INNER PLATE, DIAPHRAGM	1
16	88950006	DIAPHRAGM, SANTOPRENE	1
17	88950007	DIAPHRAGM, PTFE OVERLAY	1
18	88950009	OUTER PLATE, DIAPHRAGM, ALUMINUM	1
	88950010	OUTER PLATE, DIAPHRAGM, STAINLESS STEEL	1
19	88950013	BOTTOM DOME, ALUMINUM (NPT)	1
	88950002	BOTTOM DOME, ALUMINUM (BSP)	1
	88950012	BOTTOM DOME, STAINLESS STEEL (NPT)	1
	88950011	BOTTOM DOME, STAINLESS STEEL (BSP)	1
20	26650004	M8 HEX NUT, BLACKODIZED	8
	26650005	M8 HEX NUT,SS	8

Size : 2"			
Item No	Part Code	Description	Qty
1	88930001	TOP DOME, ALUMINUM	1
2	26600025	M12 HEX BOLT, BLACKODIZED	8
	26600048	M12 HEX BOLT, SS	8
3	26630001	Sleeve O-RING	1
4	26610001	BUSH BEARING	3
6	88930004	DAMPENER SLEEVE	1
7	26630002	M8 SOCKET HED CAP SCREW	6
8	88930006	STOPPER PIN	1
9	26630003	M10 SOCKET HED CAP SCREW	1
10	88930008	DUST CAP, BLACK	1
11	26600045	M6 SOCKET HEAD CAP SCREW	2
12	88930003	BUSH PLATE, ALUMINUM	1
13	26600045	M6 SOCKET HEAD CAP SCREW	2
14	88930005	DAMPNER ROD	1
15	88930007	INNER PLATE, DIAPHRAGM, ALUMINUM	1
	88930013	INNER PLATE, DIAPHRAGM, STAINLESS STEEL	1
16	88930009	DIAPHRAGM, SANTOPRENE	1
17	88930015	DIAPHRAGM, PTFE OVERLAY	1
18	88930010	OUTER PLATE, DIAPHRAGM, ALUMINUM	1
	88930014	OUTER PLATE, DIAPHRAGM, STAINLESS STEEL	1
19	88930002	BOTTOM DOME, ALUMINUM	1
	88930012	BOTTOM DOME, STAINLESS STEEL	1
20	26600023	M12 HEX NUT, BLACKODIZED	8
	88930016	M12 HEX NUT,SS	8

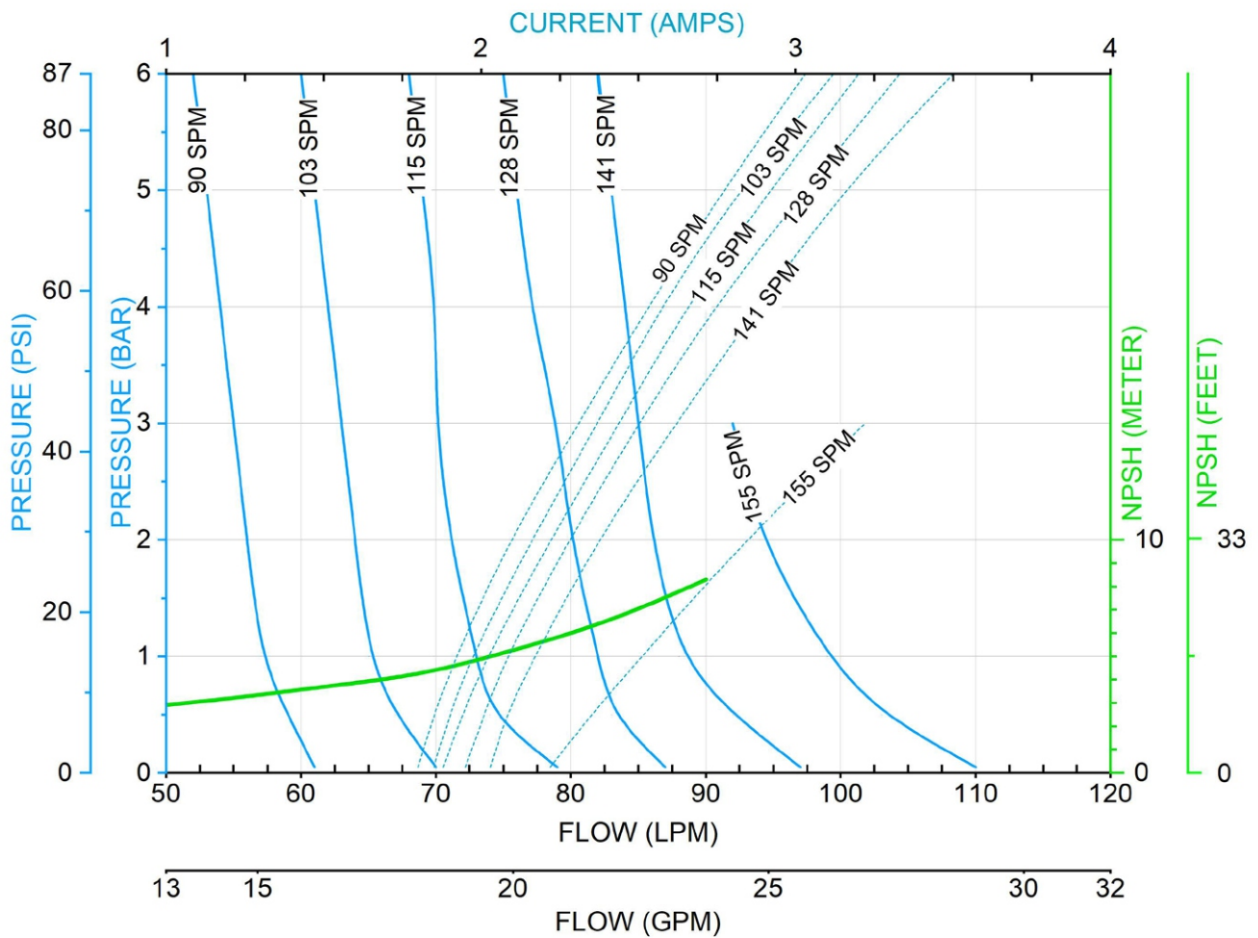
Note: Refer to the Dampener manual for more information.

Part List

Size : 3"			
Item No	Part Code	Description	Qty
1	88910012	TOP DOME, ALUMINUM	1
2	26600025	M12 HEX BOLT, BLACKODIZED	8
	26600048	M12 HEX BOLT, SS	8
3	26630001	Sleeve O-RING	1
4	26610001	BUSH BEARING	3
6	88930004	DAMPENER SLEEVE	1
7	26630002	M8 SOCKET HED CAP SCREW	6
8	88930006	STOPPER PIN	1
9	26630003	M10 SOCKET HED CAP SCREW	1
10	88930008	DUST CAP, BLACK	1
11	26600045	M6 SOCKET HEAD CAP SCREW	2
12	88910014	BUSH PLATE, ALUMINUM	1
13	26600045	M6 SOCKET HEAD CAP SCREW	2
14	88910015	DAMPNER ROD	1
15	88910016	INNER PLATE, DIAPHRAGM, ALUMINUM	1
	88910020	INNER PLATE, DIAPHRAGM, STAINLESS STEEL	1
16	88910009	DIAPHRAGM, SANTOPRENE	1
17	88910022	DIAPHRAGM, PTFE OVERLAY	1
18	88910010	OUTER PLATE, DIAPHRAGM, ALUMINUM	1
	88910021	OUTER PLATE, DIAPHRAGM, STAINLESS STEEL	1
19	88910013	BOTTOM DOME, ALUMINUM	1
	88910019	BOTTOM DOME, STAINLESS STEEL	1
20	26600023	M12 HEX NUT, BLACKODIZED	8
	88930016	M12 HEX NUT,SS	8

3.6 Performance Curve

1. Cognito 25MM (1") EODD 6 BAR (87 PSI) Pump



Notes:

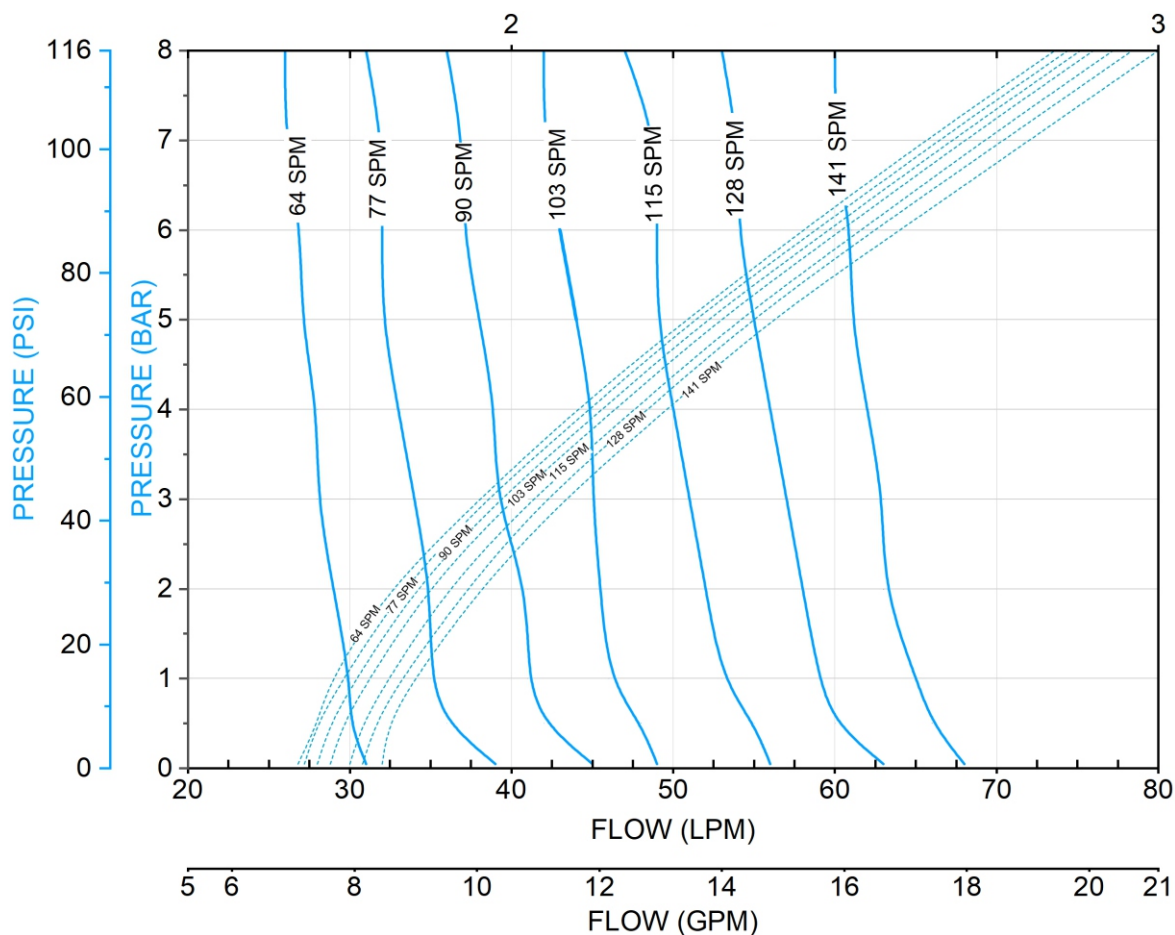
- 1 Use 2 hp / 3.7 kW motor for above 2.5 Amps
- 2 The performance curve is based on following: SANTOPRENE elastomer fitted pump, flooded suction, water at ambient conditions 25°C (77°F), with COGNITO Dampener
- 3 The performance result may deviate in excess of 5% based on elastomer.
- 4 Performance vary based on Viscosity
- 5 NPSHr curve at 6 bar Max. discharge condition

Energy Consumption Chart for 6 BAR Pump

SPM						
PRESSURE (bar)	90	103	115	128	141	155
Energy Consumption (kWh)						
0.05	0.3	0.3	0.4	0.5	0.6	0.73
0.5	0.3	0.4	0.5	0.6	0.7	0.9
1	0.4	0.4	0.5	0.6	0.7	1.0
2	0.5	0.6	0.7	0.8	0.9	1.1
3	0.6	0.7	0.9	1.0	1.1	1.2
4	0.7	0.8	1.0	1.1	1.3	-
5	0.8	1.0	1.1	1.3	1.4	-
6	0.9	1.1	1.2	1.4	1.5	-

Note: *kWh derived experimentally using 50 Hz motor; results may vary depending on application.

2. Cognito 25MM (1") EODD 8 BAR (116 PSI) Pump



Notes:

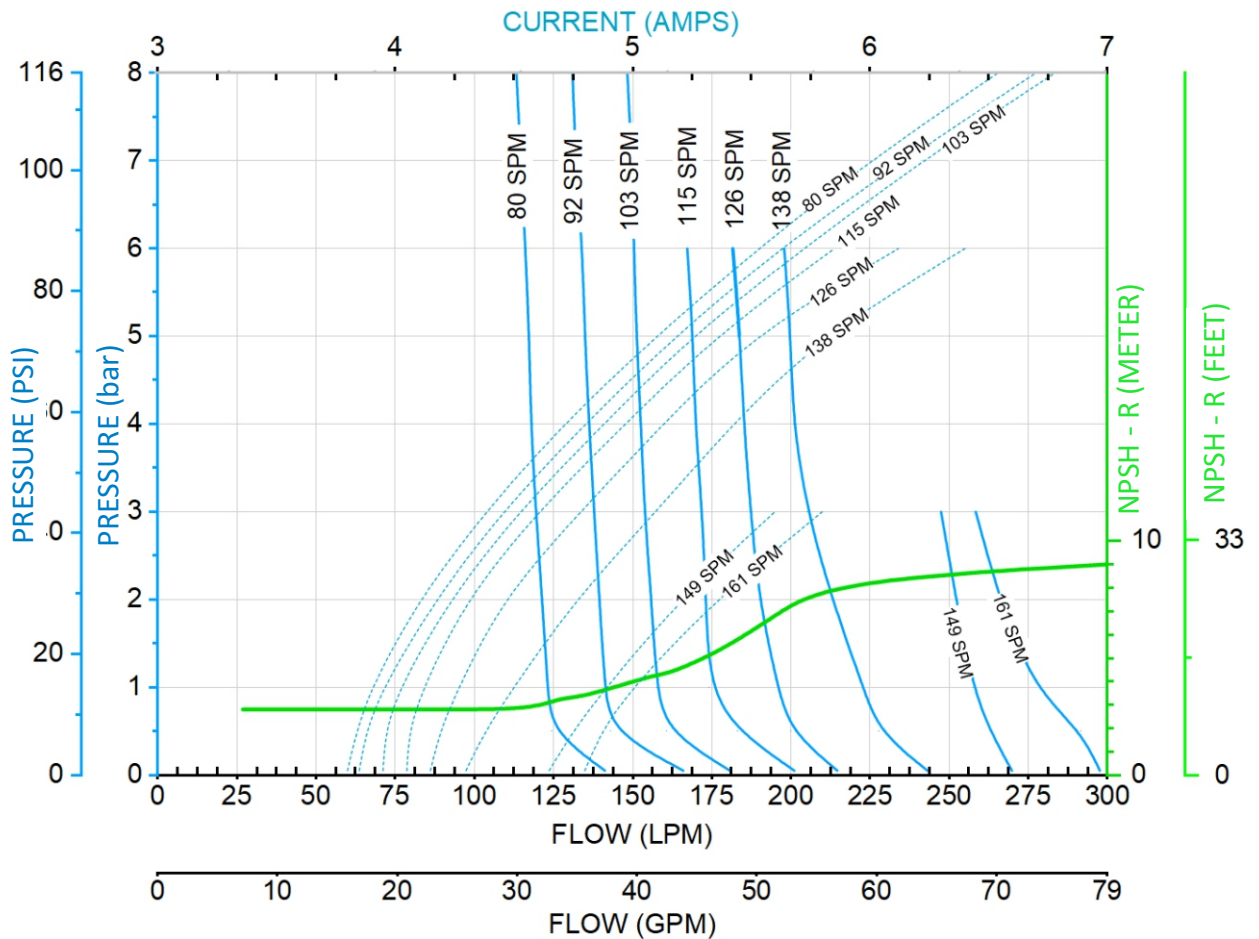
- 1 Use 2 hp / 3.7 kW motor for above 2.5 Amps
- 2 The performance curve is based on following: SANTOPRENE elastomer fitted pump, flooded suction, water at ambient conditions 25°C (77°F), with COGNITO Dampener
- 3 The performance result may deviate in excess of 5% based on elastomer.
- 4 Performance vary based on Viscosity

Energy Consumption Chart for 8 BAR Pump

PRESSURE (bar)	SPM						
	64	77	90	103	115	128	141
Energy Consumption (kWh)							
0.05	0.2	0.2	0.2	0.3	0.3	0.4	0.4
0.5	0.2	0.2	0.3	0.3	0.4	0.4	0.5
1	0.2	0.3	0.3	0.4	0.4	0.5	0.6
2	0.3	0.3	0.4	0.4	0.5	0.6	0.7
3	0.3	0.4	0.5	0.6	0.6	0.7	0.8
4	0.4	0.5	0.6	0.6	0.7	0.8	1.0
5	0.5	0.6	0.7	0.7	0.9	1.0	1.1
6	0.5	0.6	0.8	0.8	0.9	1.1	1.2
7	0.6	0.7	0.8	0.9	1.0	1.2	1.3
8	0.7	0.8	0.9	1.0	1.2	1.3	1.4

Note: *kWh derived experimentally using 50 Hz motor; results may vary depending on application.

3. Cognito 51MM (2") EODD 8 BAR (116 PSI) Pump



Notes:

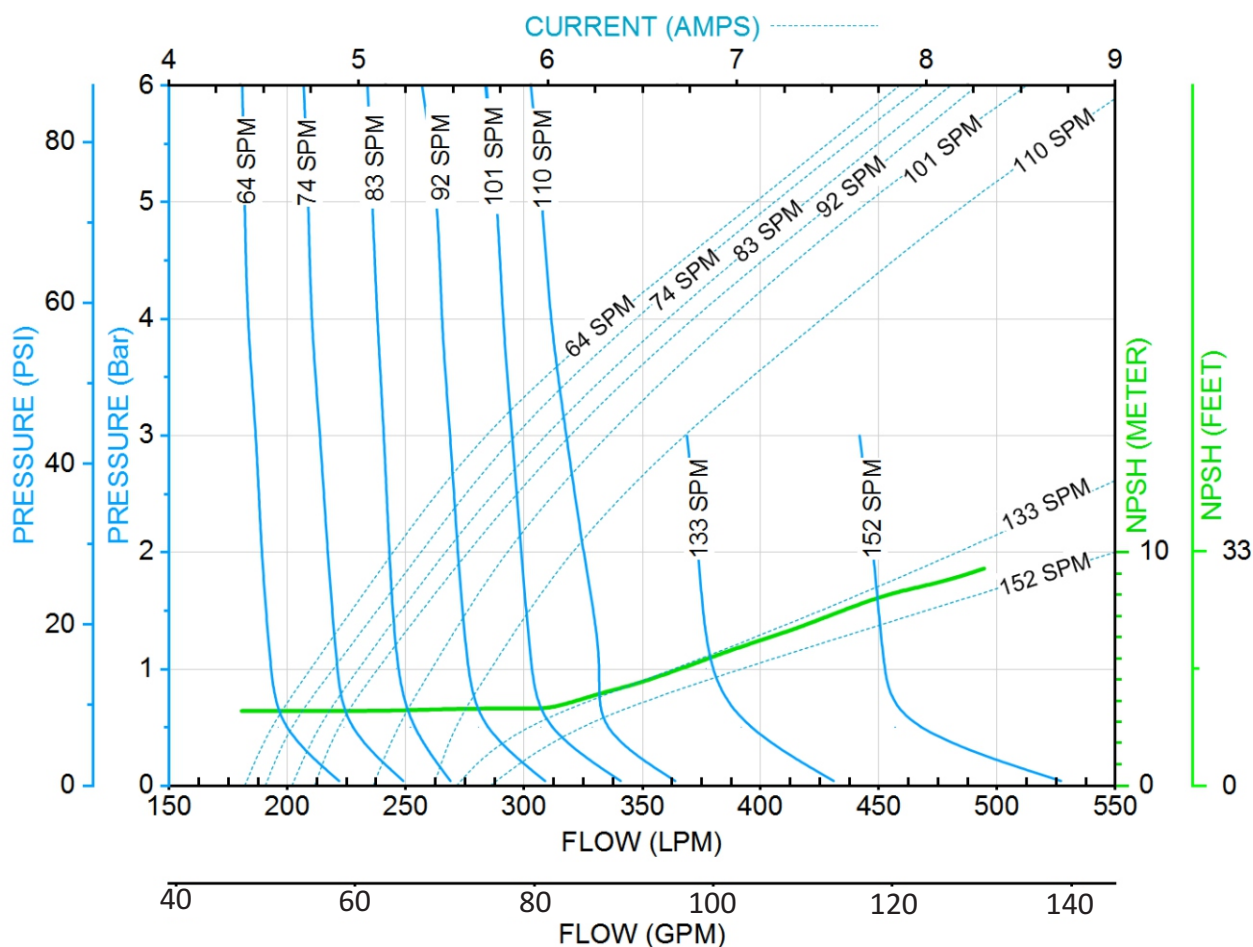
- 1 Use 5 hp / 3.7 kW motor for above 4 Amp
- 2 For SPM 161 & 149, contact IDEX India
- 3 The performance curve is based on following: SANTOPRENE elastomer fitted pump, flooded suction, water at ambient conditions 25°C, with COGNITO Dampener
- 4 The performance result may deviate in excess of 5% based on elastomer.
- 5 Performance vary based on Viscosity
- 6 NPSHr curve at 6 bar Max. discharge condition

Energy Consumption Chart

PRESSURE (bar)	SPM							
	80	92	103	115	126	138	149	161
Energy Consumption (kWh)								
0.05	0.34	0.41	0.49	0.59	0.62	0.73	0.86	1.00
0.5	0.41	0.48	0.58	0.65	0.67	0.80	0.95	1.08
1	0.48	0.59	0.68	0.78	0.88	1.02	1.22	1.34
2	0.71	0.85	0.95	1.08	1.20	1.40	1.67	1.86
3	0.92	1.08	1.21	1.39	1.52	1.74	1.93	2.30
4	1.10	1.32	1.49	1.74	1.81	2.04	-	-
5	1.36	1.57	1.74	1.94	2.16	2.42	-	-
6	1.52	1.79	2.04	2.29	2.46	2.83	-	-
7	1.82	2.06	2.34	-	-	-	-	-
8	2.06	2.36	2.66	-	-	-	-	-

Note: *kWh derived experimentally using 50 Hz motor; results may vary depending on application.

4. Cognito 76MM (3") EODD 6 BAR (87 PSI) Pump



Notes:

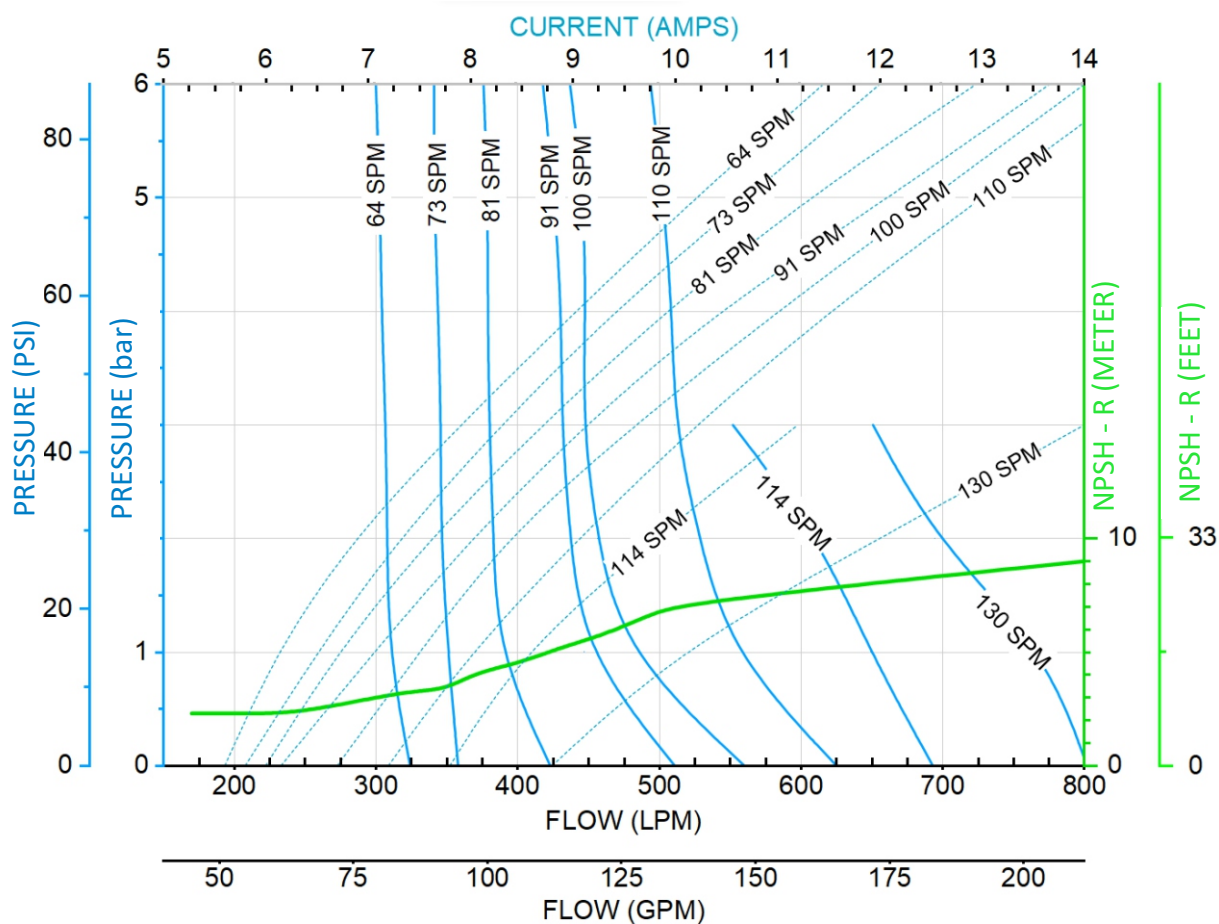
- 1 Use 7.5 hp/ 5.5 kW motor for above 7 Amp
- 2 For SPM 152 & 133, contact IDEX India
- 3 The performance curve is based on following: SANTOPRENE elastomer fitted pump, flooded suction, water at ambient conditions 25°C, with COGNITO Dampener
- 4 The performance result may deviate in excess of 5% based on elastomer.
- 5 Performance vary based on Viscosity
- 6 NPSHr curve at 6 bar max. discharge condition

Energy Consumption Chart

		SPM							
PRESSURE (bar)	64	74	83	92	101	110	133	152	
Energy Consumption (kWh)									
0.05	0.44	0.57	0.79	0.80	1.05	1.29	Contact IDEX	Contact IDEX	
0.5	0.58	0.69	0.92	1.04	1.30	1.56			
1	0.76	0.91	1.17	1.27	1.55	1.82			
2	1.07	1.28	1.51	1.71	1.99	2.29			
3	1.32	1.53	1.83	2.14	2.40	2.83			
4	1.57	1.88	2.22	2.54	2.96	3.48			
5	1.99	2.26	2.68	3.07	3.44	3.68			
6	2.23	2.56	3.06	3.44	3.91	4.37			

Note: *kWh derived experimentally using 50 Hz motor; results may vary depending on application.

5. Cognito 101MM (4") EODD 6 BAR (87 PSI) Pump



Notes:

- 1 Use 10 hp/ 7.5 kW motor for above 10 Amp
- 2 For SPM 130 & 114, contact IDEX India
- 3 The performance curve is based on following: SANTOPRENE elastomer fitted pump, flooded suction, water at ambient conditions 25°C, with COGNITO Dampener
- 4 The performance result may deviate in excess of 5% based on elastomer.
- 5 Performance vary based on Viscosity
- 6 NPSHr curve at 6 bar Max. discharge condition

Energy Consumption Chart

		SPM								
PRESSURE (bar)	64	73	81	91	100	110	114	130		
Energy Consumption (kWh)										
0.05	0.60	0.68	0.96	0.80	1.18	1.70	Contact IDEX	Contact IDEX		
0.5	0.92	1.06	1.25	0.90	1.63	2.25				
1	1.18	1.33	1.62	1.60	2.09	2.80				
2	1.74	1.94	2.20	2.45	2.89	3.54				
3	2.30	2.59	2.84	3.10	3.70	4.26				
4	2.89	3.24	3.77	3.80	4.56	5.26				
5	3.36	3.82	4.30	4.50	5.34	6.11				
6	3.83	4.49	4.97	5.40	6.12	6.96				

Note: *kWh derived experimentally using 50 Hz motor; results may vary depending on application.

3.7 Model configuration

COGNITO EODD CODE LOGIC

PUMP ASSEMBLY

COGNITO PUMP ASSEMBLY CODE LOGIC

1	2	3	4	5	6	7	8,9	10,11	12	13	14	15	16
CODE COMPLIANCE	WETTED PARTS	PUMP SIZE	PORT CONNECTION	PRESSURE RATING	PUMP SUB-ASSEMBLY CONFIG.	ELASTOMER MATL. CONFIG	MOTOR RATING IN HP	SENSOR CONFIGURATION	GEARBOX SPEED RANGE	GEARBOX TYPE & MAKE	STARTER TYPE	DAMPENER	ACCESSORIES KIT
C	A	4	F	4	M	S	10	04	G	P	V	D	

C STANDARD
X ATEX
I IECEX
K UKCA

U POSTION 1 :CODE COMPLIANCE
F CE
Z ONLY FLAME PROOF
SPECIAL CONSTRUCTION MOC

A ALUMINUM
S STAINLESS STEEL (CF8M/SS316)

POSTION 2 :WETTED PARTS

1 1" PUMP
2 2" PUMP
3 3" PUMP

4 4" PUMP
5 1.5" PUMP

POSTION 3 : PUMP SIZE

N NPT_SS
B BSP_SS
F FLANGE ANSI_AL

U POSTION 4 :PORT CONNECTION
UNIVERSAL_PP

3 LIGHT DUTY_ BELOW 4 BAR
4 STANDARD DUTY -METALLIC_ 4 TO 6 BAR
8 HIGH DUTY - LOW RPM_6 TO 8 BAR

POSTION 5 :PRESSURE RATING

B BARE PUMP WITH COUPLING HOUSING
C BARE PUMP WITH COUPLING HOUSING AND COUPLING
G BARE PUMP WITH COUPLING HOUSING , COUPLING AND GEARBOX
M BARE PUMP WITH COUPLING HOUSING , COUPLING, GEARBOX AND MOTOR
Z CUSTOM

POSTION 6 :PUMP SUB-ASSEMBLY CONFIGURATION

P (PTFE_SANTOPRENE)_PTFE_PTFE_PU-STD
S (SANTOPRENE)_SANTOPRENE_SS-410_PTFE_PU-STD
N (NEOPRENE)_NEOPRENE_SS-410_PTFE_PU-STD
V (VITON)
H (HYTREL)
G (GEOLAST)
C (SANTOPRENE)_NEOPRENE_SS-410_BUNA(NITRILE)_PU-STD
D (NEOPRENE)_SANTOPRENE_SS-410_BUNA(NITRILE)_PU-STD
E (PTFE_SANTOPRENE)_SANTOPRENE_SS-410_BUNA(NITRILE)_PU-STD
F (PTFE_SANTOPRENE)_SANTOPRENE_PTFE_PTFE_PU-STD
B (BUNA(NITRILE)_BUNA(NITRILE)_FKM(VITON)_FKM(VITON)
X (SANTOPRENE)_SANTOPRENE_SS-410_FKM(VITON)_FKM(VITON)
U (PTFE_SANTOPRENE)_PTFE_PTFE_PTFE_FKM(VITON)
W (NEOPRENE)_NEOPRENE_SS-410_FKM(VITON)_FKM(VITON)

POSTION 7 :ELASTOMER MATERIAL. CONFIGURATION
(DIAPHRAGM)_CHECK BALL_SEAT_FLANGE ORINGS_SEAL

01 1
15 1.5
02 2
03 3
05 5

55 5.5
75 7.5
10 10
20 15

POSTION 8,9 : MOTOR RATING IN HP

00 NO SENSOR & NO MOTOR
01 CONDUCTIVE SENSOR & NO MOTOR
02 CE CAPACTIVE SENSOR & NO MOTOR
03 W/O SENSOR & 50 HZ, NON HAZARDOUS MOTOR [ABB, SIEMENS, WEG, NIDEC, CG, JIE, KDRIVE, WANNAN]
04 CONDUCTIVE SENSOR & 50 HZ, NON HAZARDOUS MOTOR [ABB, SIEMENS, WEG, NIDEC, CG, JIE, KDRIVE, WANNAN]
05 CE CAPACTIVE SENSOR & 50 HZ, NON HAZARDOUS MOTOR [ABB, SIEMENS, WEG,NIDEC, CG, JIE, KDRIVE, WANNAN]
06 CE CAPACTIVE SENSOR & 50 HZ, CE MOTOR CGL
07 (ATEX/IECEX/UKCA) CAPACITIVE SENSOR + ENCLOSURE STAHL (ATEX, IECEX) & 50 HZ , ATEX, IECEX MOTOR CGL
08 (ATEX/IECEX/UKCA) CAPACITIVE SENSOR + ENCLOSURE P+F(ATEX, IECEX,UKCA) & 50 HZ , ATEX , IECEX MOTOR CGL
09 (ATEX/IECEX/UKCA) CAPACITIVE SENSOR + ENCLOSURE P+F(ATEX, IECEX,UKCA) & 50 HZ ,UKCA MOTOR MOTIVE
10 (ATEX/IECEX/UKCA) CAPACITIVE SENSOR + ENCLOSURE (PESO) & CGL FLP MOTOR
11 W/O SENSOR & 60 HZ, NON HAZARDOUS NEMA MOTOR [WEG, NORD,CG]
12 CONDUCTIVE SENSOR & 60 HZ, NON HAZARDOUS MOTOR [WEG ,NORD,CG]
13 CE CAPACTIVE SENSOR & 60 HZ, NON HAZARDOUS MOTOR [WEG,NORD,CG]
14 CE CAPACTIVE SENSOR & 60 HZ, CE MOTOR CGL
15 (ATEX/IECEX/UKCA) CAPACITIVE SENSOR + ENCLOSURE STAHL (ATEX, IECEX) & 60 HZ, ATEX, IECEX MOTOR CGL
16 (ATEX/IECEX/UKCA) CAPACITIVE SENSOR + ENCLOSURE P+F(ATEX, IECEX, UKCA) & 60 HZ, ATEX, IECEX MOTOR CGL
17 (ATEX/IECEX/UKCA) CAPACITIVE SENSOR + ENCLOSURE P+F(ATEX,IECEX, UKCA) & 60 HZ, UKCA MOTOR MOTIVE
18 (ATEX/IECEX/UKCA) CAPACITIVE SENSOR + ENCLOSURE STAHL (ATEX, IECEX, UKCA) + BARRER WITHOUT MOTOR
19 (ATEX/IECEX/UKCA) CAPACITIVE SENSOR + ENCLOSURE P+F(ATEX, IECEX, UKCA) + BARRER WITHOUT MOTOR

POSTION 10,11 :SENSOR CONFIGURATION

A (30 - 40)(48 - 36)(58 - 43)
B (41 - 50)(36 - 29)(43 - 35)
C (51 - 60)(29 - 24)(35 - 29)
D (61 - 70)(24 - 20)(29 - 25)
E (71 - 80)(20 - 18)(25 - 21)
F (81 - 90)(18 - 16)(21 - 19)
G (91 - 100)(16 - 14)(19 - 17.5)
H (101 - 110)(14 - 13)(17.5 - 16)
I (111 - 120)(13 - 12)(16 - 14.5)

J (121-130)(12 - 11)(14.5 - 13.5)
K (131-140)(11 - 10)(13.5 - 12.5)
L (141-150)(10 - 9.5)(12.5 - 11.5)
M (151-160)(9.5 - 9)(11.5 - 11)
N (161-170)(9 - 8.5)(11 - 10.5)
O (171-180)(8.5 - 8)(10.5 - 9.5)
P (181-190)(8 - 7.5)(9.5 - 9)
Q (191-200)(7.5 - 7.2)(9 - 8.5)

POSTION 12 :GEARBOX SPEED RANGE
(SPM) (GEAR RATIO @50HZ) (GEAR RATIO @ 60HZ)

O NO GEARBOX
H HORIZOTAL GEARBOX KIT (BONFIGLOLI)
V VERTICAL GEARBOX KIT (BAUER)
P HORIZOTAL GEARBOX KIT (POWERBUILD)
T VERTICAL GEARBOX KIT (POWERBUILD)
R HORIZOTAL GEARBOX KIT (ROTO MOTIVE)
N HORIZOTAL GEARBOX KIT (NORD)
A VERTICAL GEARBOX KIT (NORD)
X HORIZOTAL GEARBOX KIT (POWERBUILD (ATEX))
W VERTICAL GEARBOX KIT (POWERBUILD (ATEX))

I HORIZOTAL GEARBOX KIT (MOTIVE (ATEX/UKCA))
Y VERTICAL GEARBOX KIT (MOTIVE (ATEX/UKCA))
U HORIZOTAL GEARBOX KIT (POWERBUILD (NEMA))
C VERTICAL GEARBOX KIT (POWERBUILD (NEMA))
J HORIZOTAL GEARBOX KIT + MOTOR (JIE DRIVE)
K HORIZOTAL GEARBOX KIT + MOTOR (K DRIVE)
M HORIZOTAL GEARBOX KIT (WEG)
N VERTICAL GEARBOX KIT (WEG)
S VERTICAL GEARBOX KIT (SEW)

POSTION 13 :GEARBOX TYPE & MAKE

O NO VFD
V 380 V - 500 V (STANDARD)
W 200 V - 240 V
S STAR DELTA

D DOL
Z SPECIAL VFD
B BLANK PANEL W/O VFD
X PANEL WITH BARRIER

POSTION 14 :STARTER TYPE

O NO DAMPENER
D DAMPENER
X ATEX/IECEX/UKCA

POSTION 15 :DAMPENER

A PRESSURE SENSOR KIT
B PRESSURE RELIEF VALVE
C PRESSURE RELIEF KIT
D FLOW SWITCH

E CUSTOM VFD
I IOT KIT
O NO ACCESSORIES

POSTION 16 :ACCESSORIES KIT

3.8 Name Plate Details

3.8.1 Standard Name Plate

 EODD Pump	
Model No.:	Rated Power:
Serial No.:	Rated Head Pressure:
Max Speed.:	Month of MFG:
Lubrication Oil Details:	
	 Trusted Solutions, Improving Lives™
	

3.8.2(A) Hazardous Area Name Plate (Bare Pump)

 EODD Pump		
Model No.	Process Temp. °C	
Sr. No.	T. Class	
T _{Ambiant} -20°C TO +55°C Rated Power. kw		
 Ex h ia IIC T6-T3 Gb (with sensor) Ex h IIC T6-T3 Gb (without sensor) Ex h ia IIIC T85-T150 Db (with sensor) Ex h IIIC T85-T150 Db (without sensor)		
 IECEx DNV 23.0077X DNV 23 ATEX 33382X DNV 24 UKEX 33383X	Warnings Potential Electrostatic Charging Hazard -See Instructions  IDEX India Pvt. Ltd. Survey No. 256, G.I.D.C Manjusr, Savli, Vadodara, Gujarat, India 391770	

Definition,

1. Pump Model: Configured Pump Model Number
2. Serial No.: Pump Serial No.
3. Max. Speed: Pump RPM
4. Lubrication Oil: Pump Lubricating Oil Grade & Qty.
5. Rated Power: Motor Rated Power
6. Rated Head: Pump Max. Discharge Pressure / head
7. Month of MFG: Manufacturing Month & Year
8. T. Ambient: Allowable Ambient Temperature
9. Process Temp.: Allowable process fluid temperature range
10. T. Class: Temperature Class of the Equipment at Process fluid Temperature
11. Manufacturer's location & details

Pump's Temperature Class is based on the Process Fluid Temperature

PROCESS FLUID TEMPERATURE	Temperature Class of the Pump	
	GAS	DUST
-10°C to +120 °C	T3	150°C
-10°C to +105 °C	T4	135°C
-10°C to +100 °C	T4	130°C
-10°C to +90 °C	T4	120°C
-10°C to +70 °C	T5	100°C
-10°C to +65 °C	T5	95°C
-10°C to +55 °C	T6	85°C

3.8.2(B) Hazardous Area Name Plate (Pump Assembly)



EODD Pump Assly

Model No.

Sr. No. MFG. Year.

T_{Ambiant} -20°C TO +40°C***/+55°C Rated Power. kw

 II 2 G D IIB/IIC T4-T3 Gb (ATEX, UKCA)
 IIICT135°C - T150°C Db
 Ex 60079-46 IIB/IIC T4-T3 Gb (IECEX)
 Ex 60079-46 IIICT135°C - T150°C Db (IECEX)



IECEX DNV 24.0107X
DNV 24 ATEX 25511X
DNV 24 UKEX 25514X



Process Temp. °C

T. Class

Vo. Rating. V



Warnings
Potential Electrostatic Charging Hazard
- See Instructions


 IDEX India Pvt. Ltd.
 Survey No. 256, G.I.D.C Manjusar,
 Savli, Vadodara, Gujarat, India 391770

COGNITO EODD Pump Assembly Temperature Class is based on the process fluid temperature.

Process Fluid Temperature	Temperature Class of Pump Sizes "Gas"				Temperature Class of Pump Sizes "Dust"			
	4"	3"	2"	1"	4"	3"	2"	1"
-10°C to +105°/120°C	T3				150			
-10°C to +55°/105°C	T4				135			

3.8.3 CE Name Plate



EODD Pump

Model No.

Sr. No.

T_{Ambiant} -20°C TO +55°C Rated Power. kW

Rated Input.

Max. Pressure. BAR

SPM.

MF. Year.



CE

Made In INDIA


 IDEX India Pvt. Ltd.
 Survey No. 256, G.I.D.C Manjusar,
 Savli, Vadodara, Gujarat, India 391770

4.0 GENERAL ARRANGEMENT DRAWING

4.1 Inline Arrangement

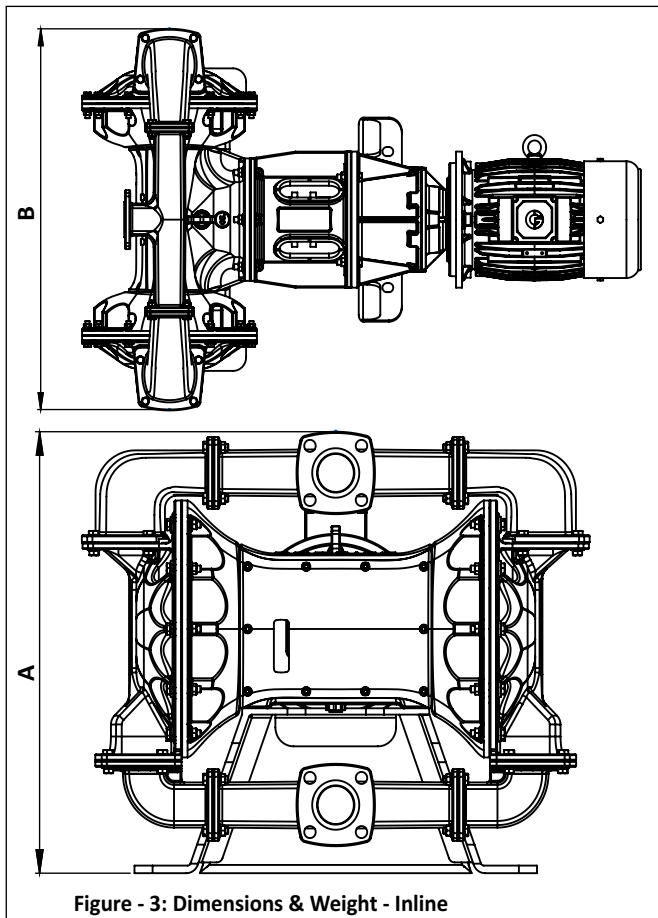


Figure - 3: Dimensions & Weight - Inline

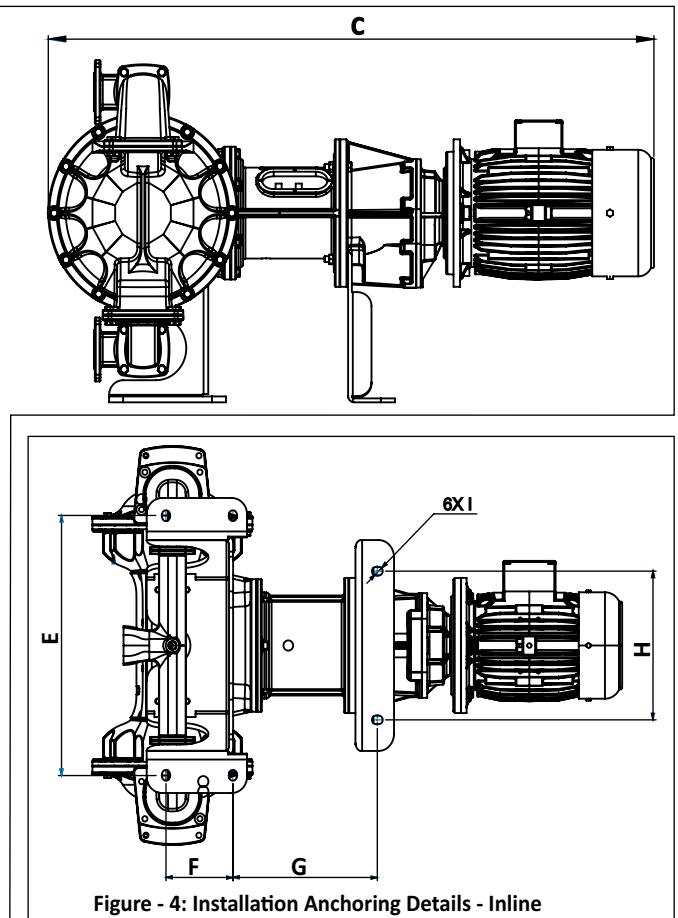


Figure - 4: Installation Anchoring Details - Inline

DIMENSION & WEIGHT DETAILS		101 MM (4")	76 MM (3")	51 MM (2")
INLINE	Aluminum			
	Height mm (in)	A 879 (34.61")	740 (29.13")	735 (28.93")
	Width mm (in)	B 1017 (40.04")	800 (31.49")	735 (28.93")
	Length mm (in)*	C 1520 (59.84")	1295 (50.98")	1060 (41.73")
	Approx. Weight kg (lb) - Bare Pump	W 409 (901.6)	220 (485)	105 (231.49)
	Approx. Weight kg (lb) - Pump, Motor, Gear Box, Dampener*	W 605 (1334 lb)	365 (804 lb)	201 (443.13 lb)
	Stainless Steel			
	Height mm (in)	A 879 (34.61")	707 (27.83")	570 (22.44")
	Width mm (in)	B 1017 (40.04")	833 (32.76")	735 (28.93")
	Length mm (in)*	C 1520 (59.84")	1295 (50.98")	1060 (41.73")
	Approx. Weight kg (lb) - Bare Pump	W 469 (1033.97)	260 (573.20)	131 (288.80)
	Approx. Weight kg (lb) - Pump, Motor, Gear Box, Dampener*	W 675 (1488 lb)	415 (914 lb)	257 (566 lb)

Aluminum Inlet (Suction) / Outlet (Discharge)

4" 150# ANSI 16.5 FLANGE	4" 150# ANSI 16.5 FLANGE	3" 150# ANSI 16.5 FLANGE	118 mm (4.64")	632 mm (24.88")
3" 150# ANSI 16.5 FLANGE	3" 150# ANSI 16.5 FLANGE	2" 150# ANSI 16.5 FLANGE	106 mm (4.17")	527 mm (20.74")
2" 150# ANSI 16.5 FLANGE	2" 150# ANSI 16.5 FLANGE	2" 150# ANSI 16.5 FLANGE	95 mm (3.74")	420 mm (16.53")

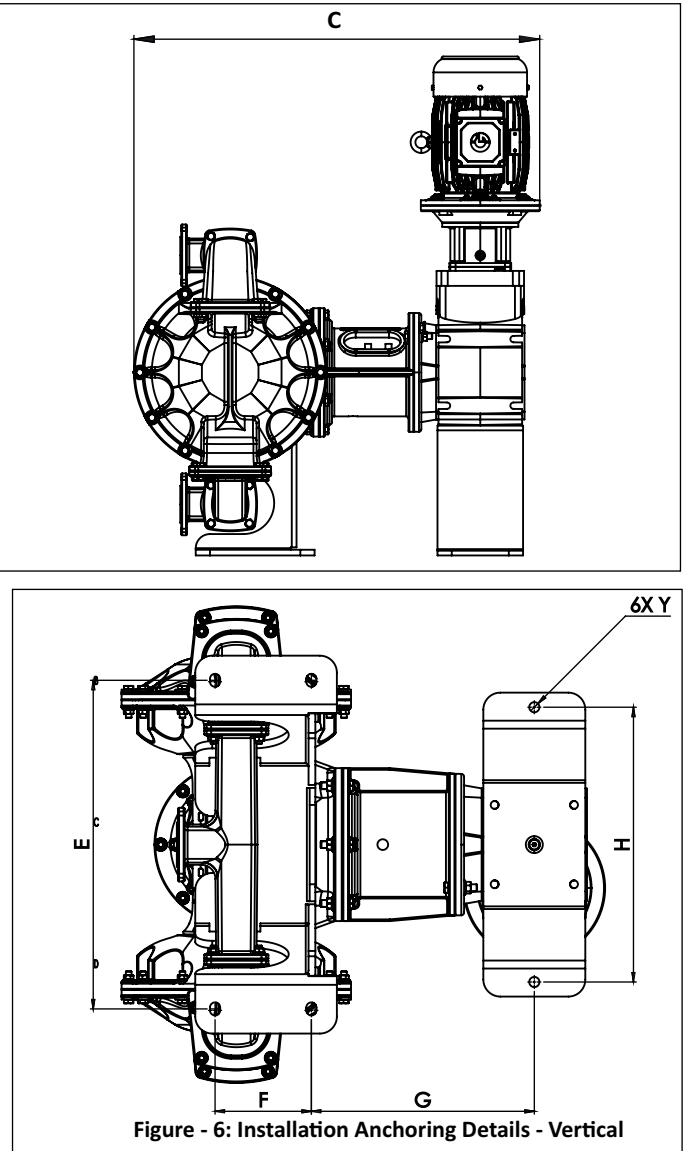
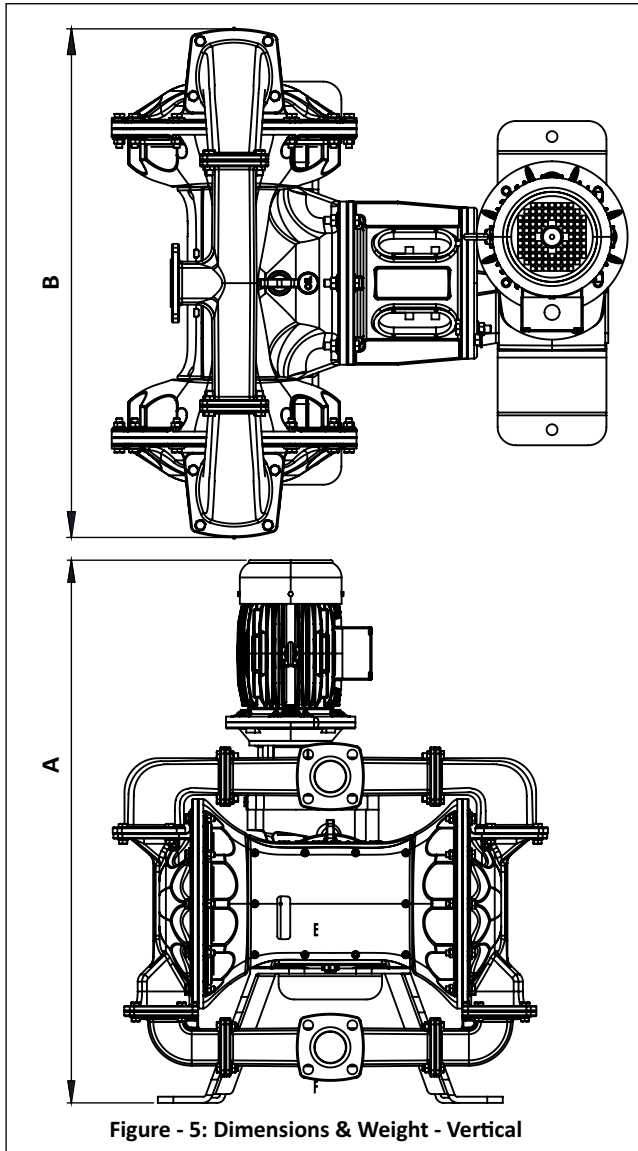
ANCHORING DETAILS		101 MM (4")	76 MM (3")	51 MM (2")
INLINE	Aluminum			
	Width mm (in)	E 650 (25.59")	580 (22.83")	480 (18.90")
	Length mm (in)	F 250 (9.84")	170 (6.69")	130 (5.12")
	Distance mm (in)	G 395 (15.55")	370 (14.57")	280 (11.02")
	Width mm (in)	H 425 (16.73")	300 (11.81")	275 (10.82")
	Anchor Fastener Size	I M16x80	M16x80	M12x80
	Stainless Steel			
	Width mm (in)	E 650 (25.59")	580 (22.83")	480 (18.90")
	Length mm (in)	F 250 (9.84")	170 (6.69")	130 (5.12")
	Distance mm (in)	G 395 (15.55")	370 (14.57")	280 (11.02")
	Width mm (in)	H 425 (16.73")	300 (11.81")	275 (10.82")
	Anchor Fastener Size	M16x80	M16x80	M12x80

Stainless Steel Inlet (Suction) / Outlet (Discharge)

4" BSP	4" BSP	3" ANSI FLANGE	100 mm (3.93")	668 mm (26.29")
3" NPT	3" NPT	2" ANSI FLANGE	90 mm (3.54")	557 mm (21.92")
2" NPT	2" NPT	2" ANSI FLANGE	80 mm (3.14")	449 mm (17.67")

*Note: Dimension C and Total Approx. Weight is with the Bonfiglioli Gearbox and CGL Motor brand. Other configurations will vary.

4.2 Vertical Arrangement (4", 3", 2" Pump)

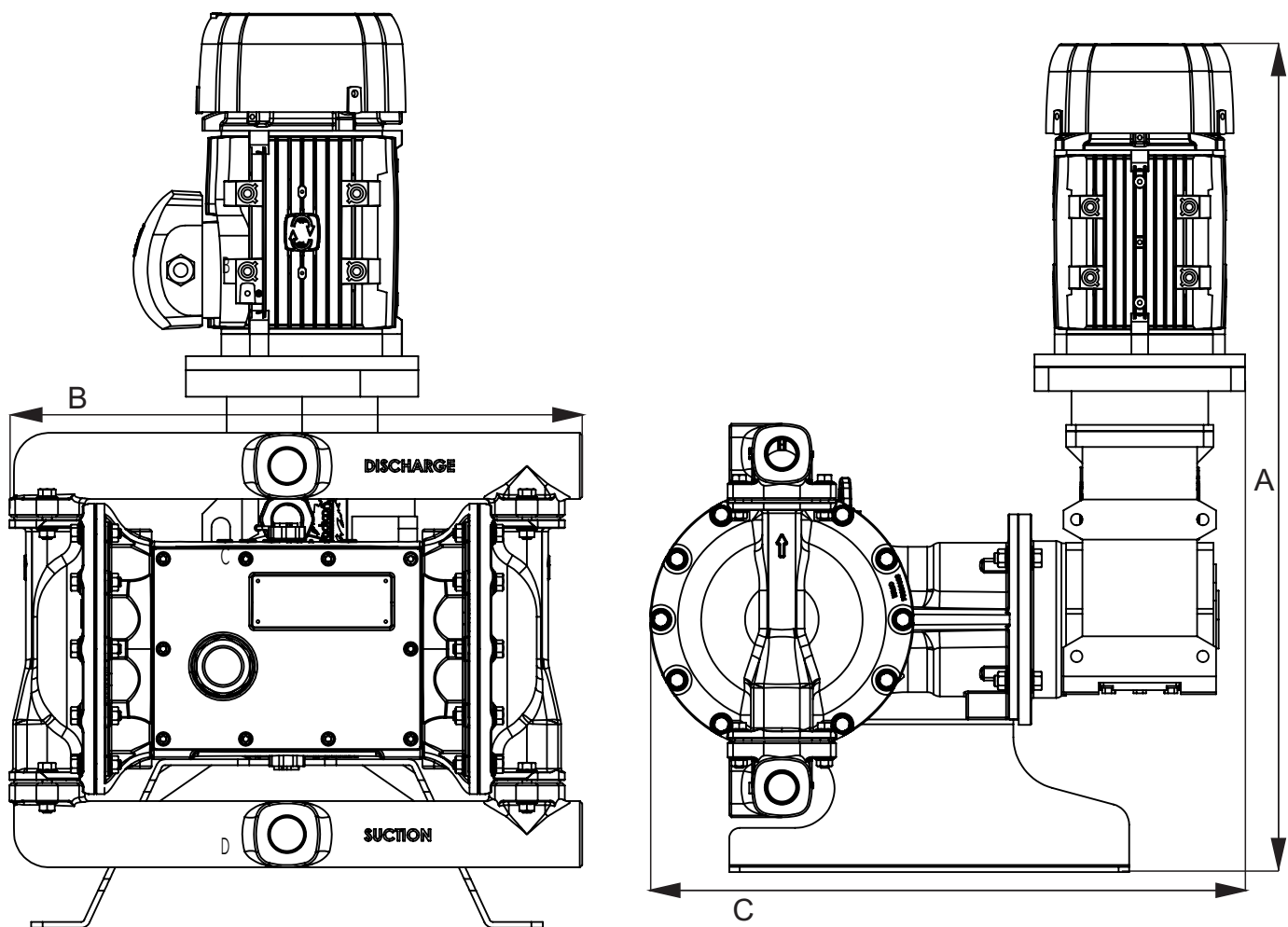


DIMENSION & WEIGHT DETAILS		101 MM (4")	76 MM (3")	51 MM (2")
VERTICAL	Aluminum			
	Height mm (in)*	A 1390 (54.72")	1220 (48.03")	1080 (42.51")
	Width mm (in)	B 1017 (40.03")	850 (33.46")	735 (28.93")
	Length mm (in)*	C 1100 (43.31")	925 (36.42")	775 (30.51")
	Approx. Weight kg (lb) - Bare Pump	W 409 (901.6 lb)	220 (485 lb)	105 (231.49 lb)
	Approx. Weight kg (lb) - Pump, Motor, Gear Box, Dampener*	W 605 (1334 lb)	415 (914 lb)	201 (443.13 lb)
	Stainless Steel			
	Height mm (in)*	A 1390 (54.72")	1220 (48.03")	1050 (41.34")
	Width mm (in)	B 1017 (40.03")	833 (32.76")	735 (28.93")
	Length mm (in)*	C 1100 (43.31")	925 (36.42")	775 (30.51")
	Approx. Weight kg (lb) - Bare Pump	W 469 (1033.97 lb)	260 (573.20 lb)	131 (288.80 lb)
	Approx. Weight kg (lb) - Pump, Motor, Gear Box, Dampener*	W 675 (1488 lb)	415 (914 lb)	257 (566 lb)

ANCHORING DETAILS		101 MM (4")	76 MM (3")	51 MM (2")
VERTICAL	Aluminum			
	Width mm (in)	E 650 (25.59")	580 (22.83")	480 (18.90")
	Length mm (in)	F 250 (9.84")	170 (6.69")	130 (5.12")
	Distance mm (in)*	G 470 (18.50")	395 (15.55")	330 (12.99")
	Width mm (in)	H 650 (25.59")	485 (19.09")	350 (13.78")
	Anchor Fastener Size	I M16x80	M16x80	M12x80
	Stainless Steel			
	Width mm (in)	E 650 (25.59")	580 (22.83")	480 (18.90")
	Length mm (in)	F 250 (9.84")	170 (6.69")	130 (5.12")
	Distance mm (in)*	G 470 (18.50")	395 (15.55")	330 (12.99")
	Width mm (in)	H 650 (25.59")	485 (19.09")	350 (13.78")
	Anchor Fastener Size	I M16x80	M16x80	M12x80

*Note: Dimensions A, C, G, and Total Approx. Weight is with the the Bauer Gearbox and CGL Motor brand. Other configurations will vary.

4.3 Vertical Arrangement (1" Pump)



Dimensions & Weight Details - Vertical

25 MM (1")

Aluminium		
Height mm (in)*	A	850 (33.46")
Width mm (in)	B	495 (19.41")
Length mm (in)*	C	720 (28.34")
Approx. Weight kg (lb) - Bare Pump	W	60 (132.28)
Approx. Weight kg (lb) - Pump + Motor + Gearbox*	W	127 (198)
Stainless Steel		
Height mm (in)*	A	850 (33.46")
Width mm (in)	B	495 (19.41")
Length mm (in)*	C	720 (28.34")
Approx. Weight kg (lb) - Bare Pump	W	75 (165.35)
Approx. Weight kg (lb) - Pump + Motor + Gearbox*	W	127 (198)

*Note: Dimensions A, C, and Total Approx. Weight is with the Powerbuild Gearbox and Rotomotive Motor brand. Other configurations will vary.

5.1 General Exploded View

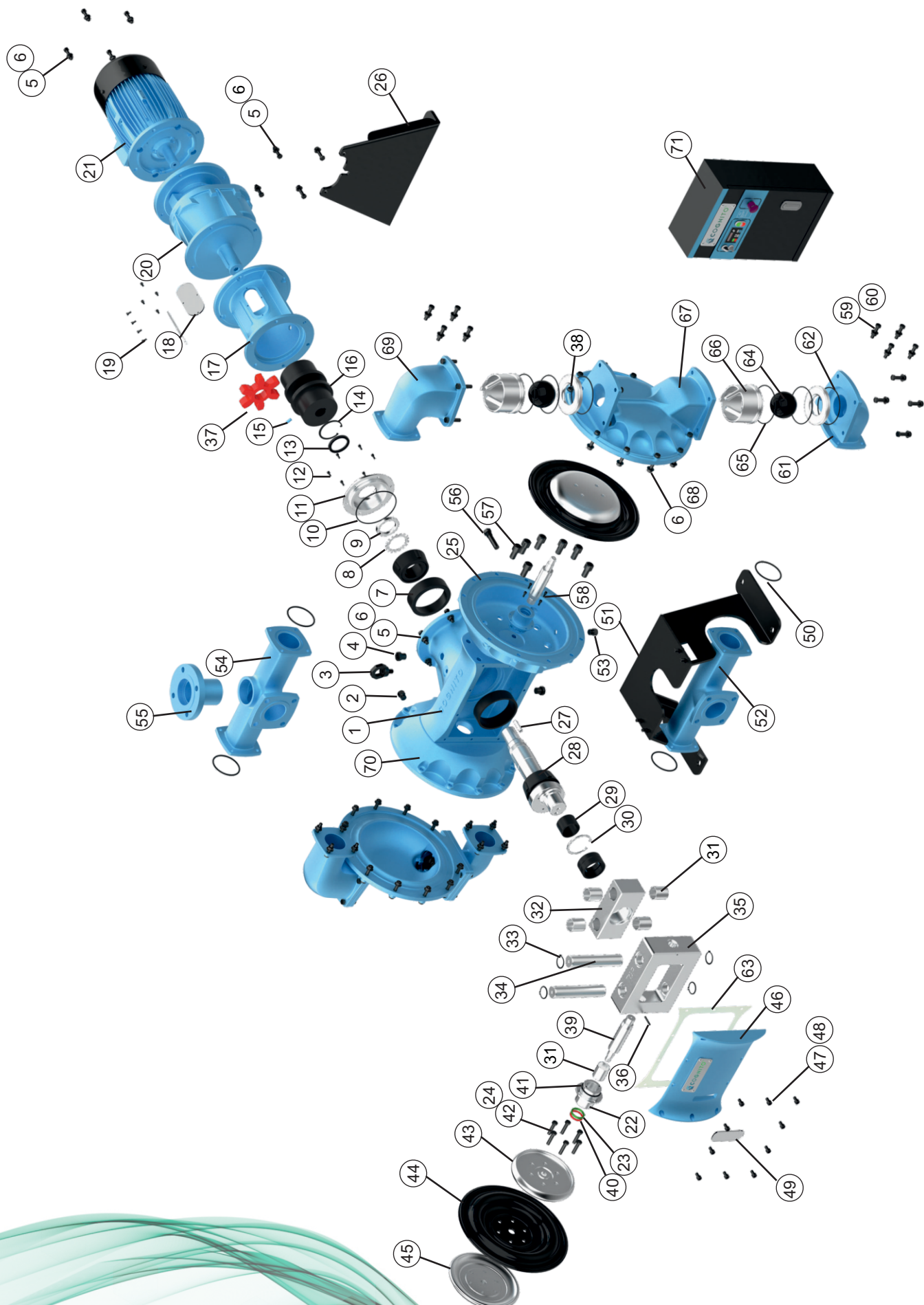
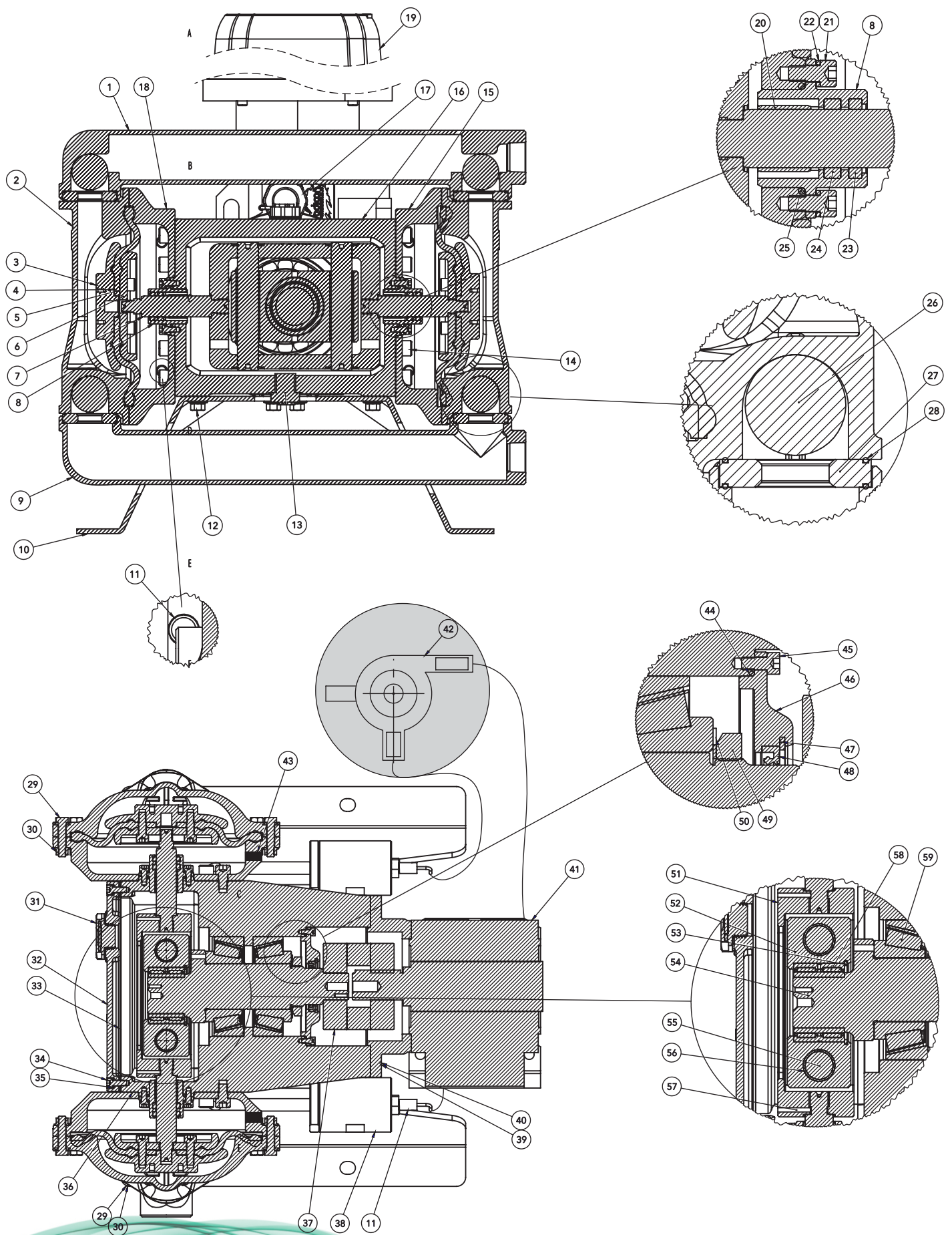


Figure - 7

Composite Part Identification

BALLOON NO.	DESCRIPTION	QTY
1	INTEGRATED CENTRE CONSOLE	1
2	VENT PLUG	2
3	LIFTING EYE-BOLT	1
4	OIL PLUG	2
5	HEX HEAD BOLT	14
6	HEX NUT	54
7	TAPPER ROLLER BEARING	2
8	LOCK WASHER IS-6731	1
9	LOCK NUT IS-6731	1
10	OIL SEAL CAP O-RING	1
11	OIL SEAL CAP	1
12	HEX HEAD BOLT	6
13	SHAFT SEAL	1
14	CERCLIP INTERNAL IS-3075	1
15	COUPLING SET SCREW	2
16	JAW COUPLING	1
17	COUPLING HOUSING	1
18	COUPLING SIGHT GLASS	2
19	SIGHT GLASS, CAP SCREW	8
20	GEARBOX	1
21	ELECTRIC MOTOR	1
22	SEAL SLEEVE	2
23	ROD SEAL	2
24	LOCK WASHER, DIAPHRAGM	12
25	BACK CHAMBER LHS	1
26	GEARBOX SUPPORT	1
27	KEY, SHAFT	1
28	CRANKSHAFT, PUMP	1
29	NEEDLE BEARING	1
30	CERCLIP INTERNAL IS-3075	1
31	BUSH BEARING	6
32	YOKE	1
33	CERCLIP EXTERNAL IS-3075	4
34	YOKE PIN	2
35	CARRIAGE	1

BALLOON NO.	DESCRIPTION	QTY
36	SET SCREW, CARRIAGE	2
37	SOFT SPIDER, COUPLING	1
38	CHECK VALVE SEAT	4
39	CONNECTING ROD, DIAPHRAGM	2
40	WIPER SEAL	2
41	O-RING, SEAL SLEEVE	2
42	HEX HEAD BOLT, DIAPHRAGM	12
43	PISTON PLATE	2
44	DIAPHRAGM	2
45	DIAPHRAGM PLATE	2
46	COVER PLATE	1
47	BOLT, COVER PLATE	10
48	SPRING WASHER, COVER PLATE	10
49	SIGHT GLASS, COVER PLATE	1
50	O-RING, MANIFOLD	4
51	PUMP SUPPORT	1
52	MANIFOLD SUCTION	1
53	DRAIN PLUG, BACK CHAMBER	2
54	MANIFOLD DISCHARGE	1
55	MANIFOLD SPOOL	1
56	SENSOR	2
57	BOLT, BACK CHAMBER	14
58	BOLT, SEAL SLEEVE	8
59	BOLT, MANIFOLD	32
60	NUT, MANIFOLD	32
61	ELBOW SUCTION	2
62	O-RING, CHECK VALVE SEAT	8
63	GASKET, COVER PLATE	1
64	CHECK BALL VALVE	4
65	O-RING, STOPPER CAGE (ALU. PUMP)	4
66	STOPPER CAGE (ALU. PUMP)	4
67	WET-CHAMBER	2
68	HEXHEAD BOLT, WET-CHAMBER	20
69	ELBOW DISCHARGE	2
70	BACK CHAMBER RHS	1
71	VFD CONTROL PANEL	1



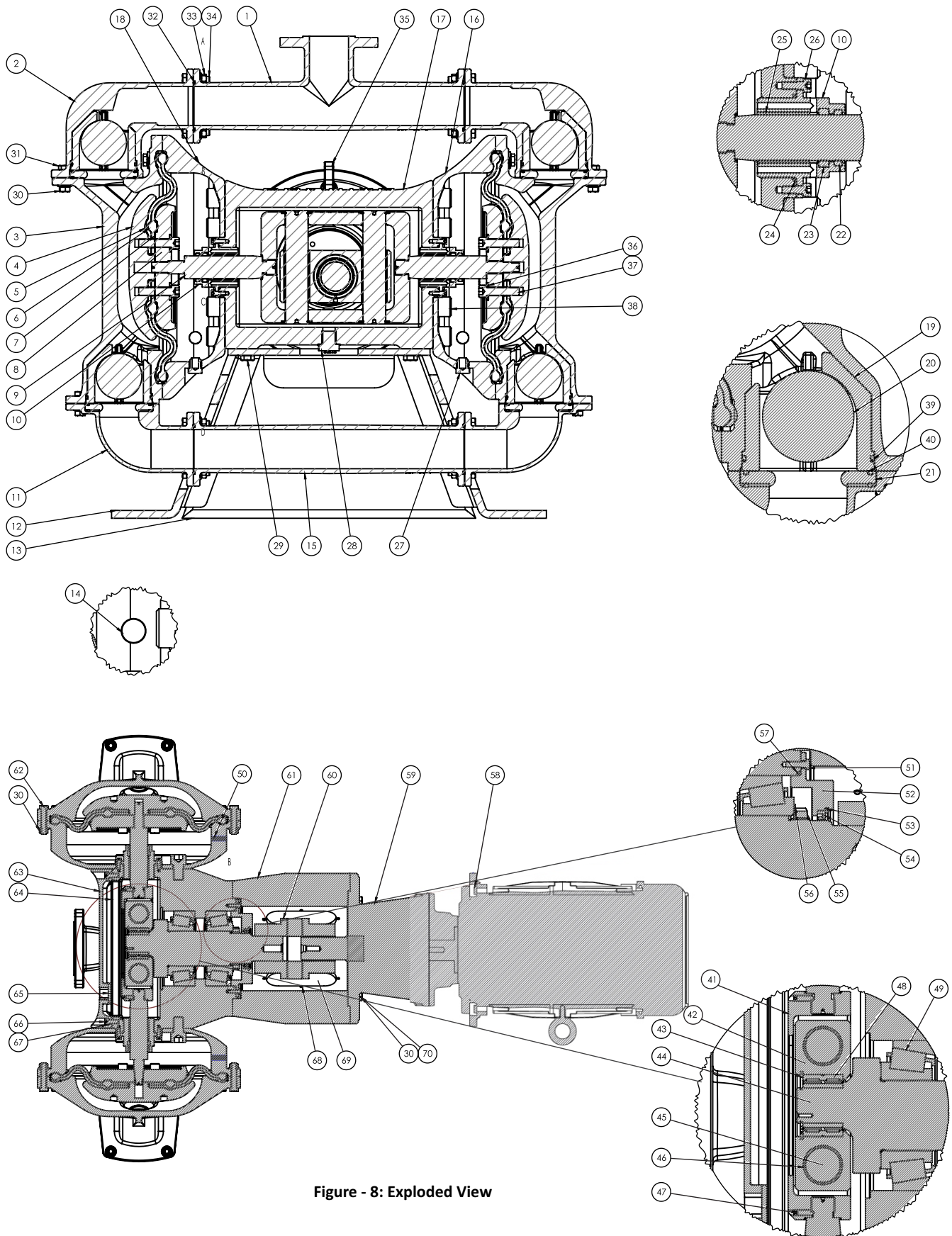
COGNITO EODD-1"/1.5" , ALUMINUM WETTED

Item	PART NO	DESCRIPTION	Qty.	Item	PART NO	DESCRIPTION	Qty.
1	88960034	MANIFOLD DISCH 1" AL NPT, ALUMINUM	1	31	26660005	SIGHT GLASS PLUG 1-1/4" BSP	1
	88960041	MANIFOLD DISCH 1" AL BSP, ALUMINUM	1	32	88960018	MAIN HOUSING COVER PLATE 1", DI	1
	88960045	MANIFOLD DISCH 1.5" AL NPT, ALUMINUM	1	33	88960019EX	GASKET-1", FRENZILT, 2MM	1
	88960049	MANIFOLD DISCH 1.5" AL BSP, ALUMINUM	1	34	26600015	M6X16 SOCKET HED CAP SCREW	10
2	88960032	WET-CHAMBER 1", ALUMINUM	2	35	26640015	M6 SPRING WASHER BLACKODIZED	10
3	88960015	DIAPHRAGM PLATE 1", ALUMINUM	2	36	88960020EX	GASKET, BACK CHAMBER 1", PTFE	2
4	88960010	PTFE OVERLAY DIAPHRAGM Ø210	2	37	-	COUPLINGROTEX-42 98ShA 1610 (GEARBOX DEPENDENT CONTACT IDEX)	1
5	88960009	BUNA DIAPHRAGM Ø210	2	38	ADAPTOR-002	ADAPTOR, SENSOR ASSLY, DELRIN	2
	88960008	SANTOPRENE DIAPHRAGM Ø210	2	39	26660026	M10X35 HEX FLANGE BOLT BLACKODIZED	4
6	88960014	PISTON PLATE 1", ASTM A351, SS	2	40	26660027	M10 HEX FLANGE NUT BLACKODIZED	4
7	88960021	DIAPHRAGM ROD 1", EN24	2	41	-	GEARBOX (CONTACT IDEX)	1
8	88960004	SEAL SLEEVE 1", SS	2	42	-	ENCLOSURE, KIT ASSLY (CONTACT IDEX)	1
9	88960033	MANIFOLD SUC 1" AL NPT, ALUMINUM	1	43	26640012EX	BLIND PLUG 1/4" BSP, NICKEL PLATED	2
	88960040	MANIFOLD SUC 1" AL BSP, ALUMINUM	1	44	26660010	O-RING OIL SEAL CAP, VITON	1
	88960044	MANIFOLD SUC 1.5" AL NPT, ALUMINUM	1	45	26660012	M5X10 SOCKET HED CAP SCREW, SS	6
	88960048	MANIFOLD SUC 1.5" AL BSP, ALUMINUM	1	46	88960017	OIL SEAL CAP 1", CI	1
10	88960031	PUMP SUPPORT 1" IS-2062 GR.B	1	47	26660011	CIRCLIP INTERNAL NI Ø55	1
11	CJ4-12GK -2.EODD	P&F, CAPACITIVE SENSOR	2	48	26660002EX	OIL SEAL, FKM	1
12	26660017	M10X16 HEX FLANGE BOLT BLACODIZED	6	49	26660014	LOCK NUT IS 6731 LN-45-S	1
13	26600050EX	OIL PLUG 1/2" NPT, NICKEL PLATED	2	50	26660013	LOCK WASHER IS 6731-45	1
14	26660018	M10X16 SOCKET HED CAP SCREW SS	14	51	88960005	CARRIAGE 1", DI	1
15	88960012	BACK CHAMBER RHS 1", DI	1	52	88960007	YOKE 1", DI	1
16	88960001	CENTRE CONSOLE 1", DI	1	53	26660016	CIRCLIP INTERNAL Ø62	1
17	26640006	M10X15 EYE-BOLT	1	54	88960002	CRANKSHAFT 1", 20MM, EN24	1
18	88960011	BACK CHAMBER LHS 1", DI	1		88960003	CRANKSHAFT 1", 15MM, EN24	1
19	-	MOTOR (CONTACT IDEX)	1	55	88960006	YOKE PIN 1", EN24	2
20	26660008	GGB DU2220 BUSH, ALUMINUM	2	56	26660004	GGB DU2225 BUSH, ALUMINUM	6
21	26660019	M6X12 SOCKET HEAD CAP SCREW, SS	8	57	26640010	M4X20 SET SCREW BLACODIZED	2
22	26660020	M6 SPRING WASHER SS	8	58	26660003EX	NEEDLE BEARING NA6908-ZW-XL, SCHAFFLER	1
23	26660006EX	WIPER SEAL, FPM	2	59	26660001EX	TAPPER ROLLER BEARING -32310, SCHAFFLER	2
24	26660007	ROD SEAL, FPM	2				
25	26660021	O-RING SEAL SLEEV, VITON	2				
26	88960028	CHECK BALL VALVE 1" SANTOPRENE	4				
	88960029	CHECK BALL VALVE 1" PTFE	4				
	88960030	CHECK BALL VALVE 1" BUNA	4				
27	88960022	CHECK VALVE SEAT 1" SS	4				
	88960023	CHECK VALVE SEAT 1" PTFE	4				
28	26660025	O-RING, SEAT, VITON (FOR SS SEAT)	8				
29	26660022	M8X40 HEX FLANGE BOLT HOT-DEEP GLV	28				
30	26660023	M8 HEX FLANGE NUT HOT-DEEP GLV	28				

COGNITO EODD-1"/1.5" , SS WETTED

Item	PART NO	DESCRIPTION	Qty.	Item	PART NO	DESCRIPTION	Qty.
1	88960026	MANIFOLD DISCH 1" SS NPT	1	31	26660005	SIGHT GLASS PLUG 1-1/4" BSP	1
	88960039	MANIFOLD DISCH 1" SS BSP	1	32	88960018	MAIN HOUSING COVER PLATE 1", DI	1
	88960043	MANIFOLD DISCH 1.5" SS NPT	1	33	88960019EX	GASKET-1", FRENZILT, 2MM	1
	88960046	MANIFOLD DISCH 1.5" SS BSP	1	34	26600015	M6X16 SOCKET HED CAP SCREW	10
2	88960024	WET-CHAMBER 1" SS	2	35	26640015	M6 SPRING WASHER BLACKODIZED	10
3	88960016	DIAPHRAGM PLATE 1" SS	2	36	88960020EX	GASKET, BACK CHAMBER 1", PTFE	2
4	88960010	PTFE OVERLAY DIAPHRAGM Ø210	2	37	-	COUPLINGROTEX-42 98ShA 1610 (GEARBOX DEPENDENT CONTACT IDEX)	1
5	88960009	BUNA DIAPHRAGM Ø210	2	38	ADAPTOR-002	ADAPTOR, SENSOR ASSLY, DELRIN	2
	88960008	SANTOPRENE DIAPHRAGM Ø210	2	39	26660026	M10X35 HEX FLANGE BOLT BLACKODIZED	4
6	88960014	PISTON PLATE 1", ASTM A351, SS	2	40	26660027	M10 HEX FLANGE NUT BLACKODIZED	4
7	88960021	DIAPHRAGM ROD 1", EN24	2	41	-	GEARBOX (CONTACT IDEX)	1
8	88960004	SEAL SLEEVE 1", SS	2	42	-	ENCLOSURE, KIT ASSLY (CONTACT IDEX)	1
9	88960025	MANIFOLD SUC 1" SS NPT	1	43	26640012EX	BLIND PLUG 1/4" BSP, NICKEL PLATED	2
	88960038	MANIFOLD SUC 1" SS BSP	1	44	26660010	O-RING OIL SEAL CAP, VITON	1
	88960042	MANIFOLD SUC 1.5" SS NPT	1	45	26660012	M5X10 SOCKET HED CAP SCREW, SS	6
	88960046	MANIFOLD SUC 1.5" SS BSP	1	46	88960017	OIL SEAL CAP 1", CI	1
10	88960031	PUMP SUPPORT 1" IS-2062 GR.B	1	47	26660011	CIRCLIP INTERNAL NI Ø55	1
11	CJ4-12GK-2.EODD	P&F, CAPACITIVE SENSOR	2	48	26660002EX	OIL SEAL, FKM	1
12	26660017	M10X16 HEX FLANGE BOLT BLACODIZED	6	49	26660014	LOCK NUT IS 6731 LN-45-S	1
13	26600050EX	OIL PLUG 1/2" NPT, NICKEL PLATED	2	50	26660013	LOCK WASHER IS 6731-45	1
14	26660018	M10X16 SOCKET HED CAP SCREW SS	14	51	88960005	CARRIAGE 1", DI	1
15	88960012	BACK CHAMBER RHS 1", DI	1	52	88960007	YOKE 1", DI	1
16	88960001	CENTRE CONSOLE 1", DI	1	53	26660016	CIRCLIP INTERNAL Ø62	1
17	26640006	M10X15 EYE-BOLT	1	54	88960002	CRANKSHAFT 1", 20MM, EN24	1
18	88960011	BACK CHAMBER LHS 1", DI	1		88960003	CRANKSHAFT 1", 15MM, EN24	1
19	-	MOTOR (CONTACT IDEX)	1	55	88960006	YOKE PIN 1", EN24	2
20	26660008	GGB DU2220 BUSH, ALUMINUM	2	56	26660004	GGB DU2225 BUSH, ALUMINUM	6
21	26660019	M6X12 SOCKET HEAD CAP SCREW, SS	8	57	26640010	M4X20 SET SCREW BLACODIZED	2
22	26660020	M6 SPRING WASHER SS	8	58	26660003EX	NEEDLE BEARING NA6908-ZW-XL, SCHAFFLER	1
23	26660006EX	WIPER SEAL, FPM	2	59	26660001EX	TAPPER ROLLER BEARING -32310, SCHAFFLER	2
24	26660007	ROD SEAL, FPM	2				
25	26660021	O-RING SEAL SLEEV, VITON	2				
26	88960028	CHECK BALL VALVE 1" SANTOPRENE	4				
	88960029	CHECK BALL VALVE 1" PTFE	4				
	88960030	CHECK BALL VALVE 1" BUNA	4				
27	88960022	CHECK VALVE SEAT 1" SS	4				
	88960023	CHECK VALVE SEAT 1" PTFE	4				
28	26660025	O-RING, SEAT, VITON (FOR SS SEAT)	8				
29	26660022	M8X40 HEX FLANGE BOLT HOT-DEEP GLV	28				
30	26660023	M8 HEX FLANGE NUT HOT-DEEP GLV	28				

5.3



COGNITO EODD-2", ALUMINUM PARTS

Item	PART NO	DESCRIPTION	Qty.
1	88940020	MANIFOLD DISCHARGE, ALUMINUM	1
2	88940021	ELBOW DISCHARGE, ALUMINUM	2
3	88940016	WET-CHAMBER, ALUMINUM	2
4	88940017	DIAPHRAGM PLATE, ALUMINUM	2
5	88940044	OVERLAY DIAPHRAGM, SANTOPRENE	2
	88940039	OVERLAY DIAPHRAGM, PTFE (WITH 88940044)	2
6	88940045	BACKUP DIAPHRAGM, SANTOPRENE	2
7	88940040	SOFT WASHER, PTFE	2
8	88940037	PISTON PLATE, WCB	2
9	88940019	DIAPHRAGM ROD	2
10	88940015	SEAL SLEEVE, STAINLESS STEEL	2
11	88940024	ELBOW SUCTION, ALUMINUM	2
12	88940013	PUMP BASE	1
	88940014	GEARBOX SUPPORT 5HP INLINE (AS35)	1
13	88940014	GEARBOX SUPPORT 3HP INLINE (AS30)	1
	88940035	GEARBOX SUPPORT 5HP VERTICAL	1
14	88940036	GEARBOX SUPPORT 3HP VERTICAL	1
	26640028	CONDUCTIVE SENSOR	2
15	88940023	MANIFOLD SUCTION, ALUMINUM	1
16	88940011	BACK CHAMBER RHS	1
17	88940001	CENTRE CONSOLE	1
18	88940012	BACK CHAMBER LHS	1
19	88940027	STOPPER CAGE	4
20	88940041	CHECK BALL VALVE, SANTOPRENE	4
	88940042	CHECK BALL VALVE, PTFE	4
21	88940022	CHECK VALVE SEAT, S.S	4
	88940043	CHECK VALVE SEAT, PTFE	4
22	26640016	WIPER SEAL	2
23	26640017	ROD SEAL	2
24	26640018	O-RING, SEAL SLEEVE	2
25	26640019	BUSH, SEAL SLEEVE	2
26	26600045	M6X16 SOCKET HEAD CAP SCREW	8
	26640015	M6 SPRING WASHER BLACKODIZED (WITH SCREW)	
27	26600050	OIL PLUG 1/2" NPT	8
28	26620002	OIL PLUG 3/8" NPT	1
29	26640013	M10X25 HEX HEAD BOLT	2
30	26640021	M8 HEX NUT	4
31	26640034	M8x30 HEX HEAD BOLT	36
32	26640033	O-RING, MANIFOLD	16
	26640024	O-RING, MANIFOLD PTFE	4
33	26640021	M8 HEX NUT	4
			30

Item	PART NO	DESCRIPTION	Qty.
34	26640034	M8x30 HEX HEAD BOLT	16
35	26640006	M10 EYE-BOLT	1
36	26640023	M10 LOCK WASHER, STAINLESS	12
37	26640022	M10X35 SOCKET HEAD BOLT, STAINLESS	12
38	26640014	M12X24 SOCKET HEAD CAP SCREW, STAINLESS	14
39	26640040	O-RING, STOPPER CAGE	4
40	26640032	O-RING, SEAT VALVE	8
41	88940005	CARRIAGE	1
42	88940006	YOKE	1
43	26640003	CERCLIP INTERNAL, YOKE	1
44	88940002	ECENTRIC CRANKSHAFT STD STROKE	1
45	88940006	YOKE PIN	2
46	26640011	BUSH, YOKE	4
47	26640010	M4X20 SET SCREW	2
48	26640009	NEEDLE BEARING	1
49	26640034	TAPPER ROLLER BEARING	2
50	26640012	WENT PLUG 1/4" BSP	2
51	26600006	M6X20 HEX HEAD BOLT BLACKODIZED	6
52	88940004	OIL SEAL CAP	1
53	26640003	CERCLIP INTERNAL IS-3075 NI Ø80	1
54	26640001	OIL SEAL	1
55	26640004	LOCK NUT, OIL SEAL	1
56	26640005	LOCK WASHER, OIL SEAL	1
57	26600003	O-RING, OIL SEAL CAP	1
58		MOTOR (CONTACT IDEX)	1
59		GERBOX (CONTACT IDEX)	1
60	26640026	JAW, COUPLING 42 (G.B DEPENDENT CONTACT IDEX)	1
61	88940025	COUPLING HOUSING Ø250 X 180 (G.B DEPENDENT CONTACT IDEX)	1
62	26640020	M8X40 HEXHEAD BOLT	20
63	88940008	COVER PLATE, ALUMINUM	1
64	88940009	GASKET, COVER PLATE	1
65	88940010	SIGHT GLASS, COVER PLATE	1
66	26600015	M6X16 SOCKET HED CAP SCREW	10
67	26640015	M6 SPRING WASHER	10
68	26600027	M6X12 SOCKET HEAD CAP SCREW	8
69	88940026	SIGHT GLASS, COUPLING HOUSING	2
70	26620014	M10x35 HEX HEAD BOLT	4

COGNITO EODD-3", ALUMINUM PARTS

Item	PART NO	DESCRIPTION	Qty.	Item	PART NO	DESCRIPTION	Qty.
1	88920058	MANIFOLD DISCHARGE, ALUMINUM (FOR NEOPRENE DIAPHRAGM)	1	35	26600042	M16 EYE-BOLT	1
	88920048	MANIFOLD DISCHARGE, ALUMINUM (FOR SANTOPRENE DIAPHRAGM)	1	36	26600053	M12 LOCK WASHER, STAINLESS	12
2	88920025	ELBOW DISCHARGE, ALUMINUM	2	37	26600057	M12X40 HEX HEAD BOLT, STAINLESS (FOR NEOPRENE DIAPHRAGM)	12
3	88920018	WET-CHAMBER, ALUMINUM (FOR NEOPRENE DIAPHRAGM)	2		26600048	M12X45 HEX HEAD BOLT, STAINLESS (FOR SANTOPRENE DIAPHRAGM)	12
	88920047	WET-CHAMBER, ALUMINUM (FOR SANTOPRENE DIAPHRAGM)	2	38	26620010	M20X30 SOCKET HEAD CAP SCREW, STAINLESS	14
4	88920021	DIAPHRAGM PLATE, ALUMINUM (FOR NEOPRENE DIAPHRAGM)	2	39	26620021	O-RING, STOPPER CAGE	4
	88920050	DIAPHRAGM PLATE, ALUMINUM (FOR SANTOPRENE DIAPHRAGM)	2	40	26620022	O-RING, SEAT VALVE	8
5	88920045	OVERLAY DIAPHRAGM, SANTOPRENE	2	41	88920051	CARRIAGE	1
	88920042	OVERLAY DIAPHRAGM, PTFE (WITH 88920045)	2	42	88920052	YOKE	1
6	88920044	BACKUP DIAPHRAGM, SANTOPRENE	2	43	26600005	CERCLIP INTERNAL, YOKE	1
	88920020	DIAPHRAGM NEOPRENE, (NOT REQUIRED #5 & #7)	2	44	88920053	ECENTRIC CRANKSHAFT STD STROKE	1
7	88920043	SOFT WASHER, PTFE	2	45	88920006	YOKE PIN	2
8	88920059	PISTON PLATE, WCB	2	46	26620005	BUSH, YOKE	4
9	88920055	DIAPHRAGM ROD	2	47	26600037	M6X20 SET SCREW	2
10	88920017	SEAL SLEEVE, STAINLESS STEEL	2	48	26600011	NEEDLE BEARING	1
11	88920028	ELBOW SUCTION, ALUMINUM	2	49	26600001	TAPPER ROLLER BEARING	2
12	88920012	PUMP BASE	1	50	26600049	WENT PLUG 1/2" BSP	2
13	88920013	GEARBOX SUPPORT 7.5HP VERTICAL (BK50)	1	51	26600006	M6X20 HEX HEAD BOLT BLACKODIZED	6
	88920014	GEARBOX SUPPORT 5HP VERTICAL	1	52	88900003	OIL SEAL CAP	1
	88920015	GEARBOX SUPPORT 7.5HP INLINE (AS45)	1	53	26600004	CERCLIP INTERNAL IS-3075 NI Ø80	1
14	15600026	CONDUCTIVE SENSOR	2	54	26600002	OIL SEAL	1
15	88920027	MANIFOLD SUCTION, ALUMINUM (FOR NEOPRENE DIAPHRAGM)	1	55	26600008	LOCK NUT, OIL SEAL	1
	88920049	MANIFOLD SUCTION, ALUMINUM (FOR SANTOPRENE DIAPHRAGM)	1	56	26600007	LOCK WASHER, OIL SEAL	1
16	88920010	BACK CHAMBER RHS	1	57	26600003	O-RING, OIL SEAL CAP	1
17	88920001	CENTRE CONSOLE	1	58		MOTOR (CONTACT IDEX)	1
18	88920011	BACK CHAMBER LHS	1	59		GERBOX (CONTACT IDEX)	1
19	88920029	STOPPER CAGE	4	60	26600028	JAW, COUPLING 55 (G.B DEPENDENT CONTACT IDEX)	1
20	88920031	CHECK BALL VALVE, NEOPRENE	4	61	88900040	COUPLING HOUSING Ø300x266 (G.B DEPENDENT CONTACT IDEX)	1
	88920032	CHECK BALL VALVE, SANTOPRENE	4		88900025	COUPLING HOUSING Ø250 (G.B DEPENDENT CONTACT IDEX)	1
21	88920039	CHECK BALL VALVE, PTFE	4		88900026	COUPLING HOUSING Ø300 (G.B DEPENDENT CONTACT IDEX)	1
	88920030	CHECK VALVE SEAT, S.S	4		88900027	COUPLING HOUSING Ø350 (G.B DEPENDENT CONTACT IDEX)	1
	88920041	CHECK VALVE SEAT, PTFE	4	62	26620015	M10X50 HEXHEAD BOLT (FOR NEOPRENE DIAPHRAGM)	20
22	26620006	WIPER SEAL	2		26620024	M10X60 HEXHEAD BOLT (FOR SANTOPRENE DIAPHRAGM)	20
23	26620007	ROD SEAL	2	63	88920008	COVER PLATE, ALUMINUM	1
24	26620008	O-RING, SEAL SLEEVE	2	64	26620020	GASKET, COVER PLATE	1
25	26620005	BUSH, SEAL SLEEVE	2	65	88920009	SIGHT GLASS, COVER PLATE	1
26	26600045	M6X16 SOCKET HEAD CAP SCREW	8	66	26620011	M8X16 SOCKET HED CAP SCREW	10
27	26600050	OIL PLUG 1/2" NPT	3	67	26620012	M8 SPRING WASHER	10
28	26620002	OIL PLUG 3/8" NPT	1	68	26600027	M6X12 SOCKET HEAD CAP SCREW	8
29	26600031	M12X24 HEX HEAD BOLT	4	69	88900035	SIGHT GLASS, COUPLING HOUSING (FOR ITEM 61 Ø350 & Ø300X266)	2
30	26620018	M10 HEX NUT	36		88900028	SIGHT GLASS, COUPLING HOUSING (FOR ITEM 61 Ø300 & Ø250)	2
31	26620014	M10x35 HEX HEAD BOLT	16	70	26600025	M12X50 HEX HEAD BOLT	14
32	26620019	O-RING, MANIFOLD	4				
	88920040	O-RING, MANIFOLD PTFE	4				
33	26620018	M10 HEX NUT	30				
34	26620014	M10x35 HEX HEAD BOLT	16				

COGNITO EODD-4", ALUMINUM PARTS

Item	PART NO	DESCRIPTION	Qty.
1	88900061	MANIFOLD DISCHARGE, ALUMINUM (FOR NEOPRENE DIAPHRAGM)	1
	88900056	MANIFOLD DISCHARGE, ALUMINUM (FOR SANTOPRENE DIAPHRAGM)	1
2	88900020	ELBOW DISCHARGE, ALUMINUM	2
3	88900014	WET-CHAMBER, ALUMINUM (FOR NEOPRENE DIAPHRAGM)	2
	88900055	WET-CHAMBER, ALUMINUM (FOR SANTOPRENE DIAPHRAGM)	2
4	88900016	DIAPHRAGM PLATE, ALUMINUM (FOR NEOPRENE DIAPHRAGM)	2
	88900058	DIAPHRAGM PLATE, ALUMINUM (FOR SANTOPRENE DIAPHRAGM)	2
5	88900054	OVERLAY DIAPHRAGM, SANTOPRENE	2
	88900051	OVERLAY DIAPHRAGM, PTFE (WITH 88900054)	2
6	88900053	BACKUP DIAPHRAGM, SANTOPRENE	2
	88900015	DIAPHRAGM NEOPRENE, (NOT REQUIRED #5 & #7)	2
7	88900052	SOFT WASHER, PTFE	2
8	88900062	PISTON PLATE, WCB	2
9	88900018	DIAPHRAGM ROD	2
10	88900036	SEAL SLEEVE, STAINLESS STEEL	2
11	88900024	ELBOW SUCTION, ALUMINUM	2
12	88900012	PUMP BASE, HORIZONTAL (FOR HORIZONTAL MOUNT GB)	1
	88900011	PUMP BASE, VERTICAL (FOR VERTICAL MOUNT GB)	1
13	88900012-1	GERBOX SUPPORT, HORIZONTAL (FOR HORIZONTAL MOUNT GB)	1
	88900011-1	GERBOX SUPPORT, VERTICAL (FOR VERTICAL MOUNT GB)	1
14	15600026	CONDUCTIVE SENSOR	2
15	88900023	MANIFOLD SUCTION, ALUMINUM (FOR NEOPRENE DIAPHRAGM)	1
	88900057	MANIFOLD SUCTION, ALUMINUM (FOR SANTOPRENE DIAPHRAGM)	1
16	88900009	BACK CHAMBER RHS	1
17	88900001	CENTRE CONSOLE	1
18	88900010	BACK CHAMBER LHS	1
19	88900030	STOPPER CAGE	4
20	88900021	CHECK BALL VALVE, NEOPRENE	4
	88900041	CHECK BALL VALVE, SANTOPRENE	4
21	88900034	CHECK VALVE SEAT, S.S	4
	88900050	CHECK VALVE SEAT, PTFE	4
22	26600013	WIPER SEAL	2
23	26600014	ROD SEAL	2
24	26600016	O-RING, SEAL SLEEVE	2
25	26600012	BUSH, SEAL SLEEVE	2
26	26600045	M6X16 SOCKET HEAD CAP SCREW	8
27	26600050	OIL PLUG 1/2" NPT	2
28	26600047	OIL PLUG 3/4" NPT	2
29	26600031	M12X24 HEX HEAD BOLT	4
30	26600023	M12 HEX NUT	36
31	26600025	M12X50 HEX HEAD BOLT	16
32	26600024	O-RING, MANIFOLD	4
	88900049	O-RING, MANIFOLD PTFE	4
33	26600023	M12 HEX NUT	30

Item	PART NO	DESCRIPTION	Qty.
34	26600025	M12X50 HEX HEAD BOLT	16
35	26600042	M16 EYE-BOLT	1
36	26600053	M12 LOCK WASHER, STAINLESS	12
37	26600057	M12X40 HEX HEAD BOLT, STAINLESS (FOR NEOPRENE DIAPHRAGM)	12
	26600048	M12X45 HEX HEAD BOLT, STAINLESS (FOR SANTOPRENE DIAPHRAGM)	12
38	26600044	M20X35 SOCKET HEAD CAP SCREW, STAINLESS	14
39	26600032	O-RING, STOPPER CAGE	4
40	26600046	O-RING, SEAT VALVE (STAINLESS SEAT)	8
41	88900004	CARRIAGE	1
42	88900006	YOKE	1
43	26600005	CERCLIP INTERNAL, YOKE	1
44	88900002	ECENTRIC CRANKSHAFT STD STROKE	1
45	88900005	YOKE PIN	2
46	26600012	BUSH, YOKE	4
47	26600037	M6X20 SET SCREW	2
48	26600011	NEEDLE BEARING	1
49	26600001	TAPPER ROLLER BEARING	2
50	26600049	WENT PLUG 1/2" BSP	2
51	26600006	M6X20 HEX HEAD BOLT BLACKODIZED	6
52	88900003	OIL SEAL CAP	1
53	26600004	CERCLIP INTERNAL IS-3075 NI Ø80	1
54	26600002	OIL SEAL	1
55	26600008	LOCK NUT, OIL SEAL	1
56	26600007	LOCK WASHER, OIL SEAL	1
57	26600003	O-RING, OIL SEAL CAP	1
58		MOTOR (CONTACT IDEX)	1
59		GEARBOX (CONTACT IDEX)	1
60	26600029	JAW, COUPLING 75 (G.B DEPENDENT CONTACT IDEX)	1
	26600028	JAW, COUPLING 55 (G.B DEPENDENT CONTACT IDEX)	1
61	88900040	COUPLING HOUSING Ø300x266 (G.B DEPENDENT CONTACT IDEX)	1
	88900025	COUPLING HOUSING Ø250 (G.B DEPENDENT CONTACT IDEX)	1
	88900026	COUPLING HOUSING Ø300 (G.B DEPENDENT CONTACT IDEX)	1
	88900027	COUPLING HOUSING Ø350 (G.B DEPENDENT CONTACT IDEX)	1
62	26600022	M12X70 HEXHEAD BOLT (FOR NEOPRENE DIAPHRAGM)	20
	26600054	M12X80 HEXHEAD BOLT (FOR SANTOPRENE DIAPHRAGM)	20
63	88900007	COVER PLATE, ALUMINUM	1
64	26600026	GASKET, COVER PLATE	1
65	88900008	SIGHT GLASS, COVER PLATE	1
66	26600018	M10X20 SOCKET HED CAP SCREW	10
67	26600019	M10 SPRING WASHER	10
68	26600027	M6X12 SOCKET HEAD CAP SCREW	8
69	88900035	SIGHT GLASS, COUPLING HOUSING (FOR ITEM 61 Ø350 & Ø300X266)	2
	88900028	SIGHT GLASS, COUPLING HOUSING (FOR ITEM 61 Ø300 & Ø250)	2
70	26600025	M12X50 HEX HEAD BOLT	14

5.4 Cognito EODD SS Pump (2", 3" & 4")

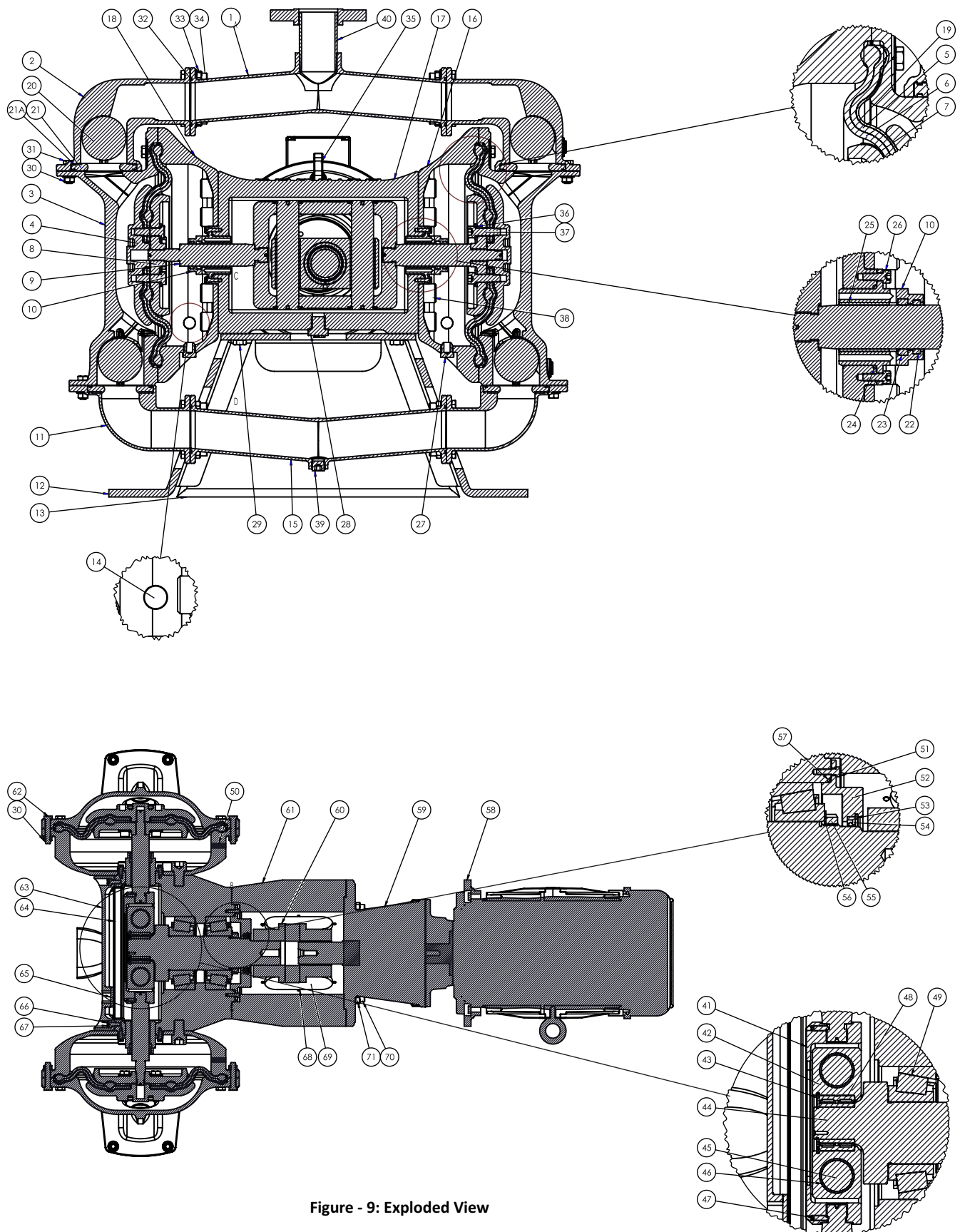


Figure - 9: Exploded View

COGNITO EODD-2", STAINLESS STEEL PARTS

Item	PART NO	DESCRIPTION	Qty.
1	88940031	MANIFOLD DISCHARGE, STAINLESS	1
2	88940032	ELBOW DISCHARGE, STAINLESS	2
3	88940028	WET-CHAMBER, STAINLESS	2
4	88940029	DIAPHRAGM PLATE, STAINLESS	2
5	88940044	OVERLAY DIAPHRAGM, SANTOPRENE	2
6	88940045	BACKUP DIAPHRAGM, SANTOPRENE	2
7	88940040	SOFT WASHER, PTFE	2
8	88940030	PISTON PLATE, STAINLESS	2
9	88940019	DIAPHRAGM ROD	2
10	88940015	SEAL SLEEVE, STAINLESS STEEL	2
11	88940034	ELBOW SUCTION, STAINLESS	2
12	88940013	PUMP BASE	1
13	88940014	GEARBOX SUPPORT 5HP INLINE (AS35)	1
	88940014	GEARBOX SUPPORT 3HP INLINE (AS30)	1
	88940035	GEARBOX SUPPORT 5HP VERTICAL	1
	88940036	GEARBOX SUPPORT 3HP VERTICAL	1
14	26640028	CONDUCTIVE SENSOR	2
15	88940033	MANIFOLD SUCTION, STAINLESS	1
16	88940011	BACK CHAMBER RHS	1
17	88940001	CENTRE CONSOLE	1
18	88940012	BACK CHAMBER LHS	1
19	88940039	OVERLAY DIAPHRAGM, PTFE	2
20	88940041	CHECK BALL VALVE, SANTOPRENE (WITH SANTOPRENE DIAPHRAGM)	4
	88940042	CHECK BALL VALVE, PTFE	4
21	88940022	CHECK VALVE SEAT, METALLIC (WITH SANTOPRENE DIAPHRAGM)	4
	88940043	CHECK VALVE SEAT, PTFE	4
21A	26640032	O-RING, SEAT VALVE (WITH PART NO #88940022)	8
22	26640016	WIPER SEAL	2
23	26640017	ROD SEAL	2
24	26640018	O-RING, SEAL SLEEVE	2
25	26640019	BUSH, SEAL SLEEVE	2
26	26600045	M6X16 SOCKET HEAD CAP SCREW	8
	26640015	M6 SPRING WASHER BLACKODIZED (WITH SCREW)	8
27	26600050	OIL PLUG 1/2" NPT	1
28	26620002	OIL PLUG 3/8" NPT	2
29	26640013	M10X25 HEX HEAD BOLT	4
30	26640043	M8 HEX NUT HOT-DEEP GLV	36
31	26640042	M8X30 HEX BOLT HOT-DEEP GLV	16
32	26640033	O-RING, MANIFOLD (WITH SANTOPRENE DIAPHRAGM)	4
	26640024	O-RING, MANIFOLD, PTFE	4

Item	PART NO	DESCRIPTION	Qty.
33	26640043	M8 HEX NUT HOT-DEEP GLV	30
34	26640042	M8X30 HEX BOLT HOT-DEEP GLV	16
35	26640006	M10 EYE-BOLT	1
36	26640023	M10 LOCK WASHER, STAINLESS	12
37	26640031	M10X40 HEX HEAD BOLT, STAINLESS	12
38	26640014	M12X24 SOCKET HEAD CAP SCREW, STAINLESS	14
39	26620002	DRAIN PLUG, 3/8" NPT (OPTIONAL)	5
40	88930017	2" FLANGES SPOOL, STAINLESS	1
41	88940005	CARRIAGE	1
42	88940006	YOKE	1
43	26640003	CERCLIP INTERNAL, YOKE	1
44	88940002	ECENTRIC CRANKSHAFT STD STROKE	1
45	88940006	YOKE PIN	2
46	26640011	BUSH, YOKE	4
47	26640010	M4X20 SET SCREW	2
48	26640009	NEEDLE BEARING	1
49	26640034	TAPPER ROLLER BEARING	2
50	26640012	WENT PLUG 1/4" BSP	2
51	26600006	M6X20 HEX HEAD BOLT BLACKODIZED	6
52	88940004	OIL SEAL CAP	1
53	26640003	CERCLIP INTERNAL IS-3075 NI Ø80	1
54	26640001	OIL SEAL NBR 50 X 72 X 8MM	1
55	26640004	LOCK NUT, OIL SEAL	1
56	26640005	LOCK WASHER, OIL SEAL	1
57	26600003	O-RING, OIL SEAL CAP	1
58		MOTOR (CONTACT IDEX)	1
59		GERBOX (CONTACT IDEX)	1
60	26640026	JAW, COUPLING 42 (G.B DEPENDENT CONTACT IDEX)	1
61	88940025	COUPLING HOUSING Ø250 X 180 (G.B DEPENDENT CONTACT IDEX)	1
62	26640041	M8X40 HEX BOLT HOT-DEEP GLV	20
63	88940008	COVER PLATE, ALUMINUM	1
64	88940009	GASKET, COVER PLATE	1
65	88940010	SIGHT GLASS, COVER PLATE	1
66	26600015	M6X16 SOCKET HED CAP SCREW	10
67	26640015	M6 SPRING WASHER	10
68	26600027	M6X12 SOCKET HEAD CAP SCREW	8
69	88940026	SIGHT GLASS, COUPLING HOUSING	2
70	26620014	M10x35 HEX HEAD BOLT	4

COGNITO EODD-3", STAINLESS STEEL PARTS

Item	PART NO	DESCRIPTION	Qty.
1	88920034	MANIFOLD DISCHARGE, STAINLESS	1
2	88920035	ELBOW DISCHARGE, STAINLESS	2
3	88920033	WET-CHAMBER, STAINLESS	2
4	88920037	DIAPHRAGM PLATE, STAINLESS	2
5	88920045	OVERLAY DIAPHRAGM, SANTOPRENE	2
6	88920044	BACKUP DIAPHRAGM, SANTOPRENE	2
7	88920043	SOFT WASHER, PTFE	2
8	88920038	PISTON PLATE, STAINLESS	2
9	88920055	DIAPHRAGM ROD	2
10	88920017	SEAL SLEEVE, STAINLESS STEEL	2
11	88920036	ELBOW SUCTION, STAINLESS	2
12	88920012	PUMP BASE	1
13	88920013	GEARBOX SUPPORT 7.5HP VERTICAL (BK50)	1
	88920014	GEARBOX SUPPORT 5HP VERTICAL	1
	88920015	GEARBOX SUPPORT 7.5HP INLINE (AS45)	1
14	15600026	CONDUCTIVE SENSOR	2
15	88920056	MANIFOLD SUCTION, STAINLESS	1
16	88920010	BACK CHAMBER RHS	1
17	88920001	CENTRE CONSOLE	1
18	88920011	BACK CHAMBER LHS	1
19	88920042	OVERLAY DIAPHRAGM, PTFE	2
20	88920039	CHECK BALL VALVE, PTFE	4
	88920032	CHECK BALL VALVE, SANTOPRENE (WITH SANTOPRENE DIAPHRAGM)	4
21	88920030	CHECK VALVE SEAT, METALLIC (WITH SANTOPRENE DIAPHRAGM)	4
21A	88920039	CHECK VALVE SEAT, PTFE	4
21B	26620022	O-RING, SEAT VALVE (WITH PART NO #88920030)	8
22	26620006	WIPER SEAL	2
23	26620007	ROD SEAL	2
24	26620008	O-RING, SEAL SLEEVE	2
25	26620005	BUSH, SEAL SLEEVE	2
26	26600045	M6X16 SOCKET HEAD CAP SCREW	8
27	26600050	OIL PLUG 1/2" NPT	3
28	26620002	OIL PLUG 3/8" NPT	1
29	26600031	M12X24 HEX HEAD BOLT	4
30	26620028	M10 HEX NUT, HOT DEEP	36
31	26620027	M10x30 HEX HEAD BOLT, HOT DEEP	16
32	88920040	O-RING, MANIFOLD, PTFE	4
	26620019	O-RING, MANIFOLD (WITH SANTOPRENE DIAPHRAGM)	4
33	26620028	M10 HEX NUT, HOT DEEP	30
34	26620027	M10x30 HEX HEAD BOLT, HOT DEEP	16
35	26600042	M16 EYE-BOLT	1

Item	PART NO	DESCRIPTION	Qty.
36	26600053	M12 LOCK WASHER, STAINLESS	12
37	26600048	M12X50 HEX HEAD BOLT, STAINLESS	12
38	26620010	M20X30 SOCKET HEAD CAP SCREW, STAINLESS	14
39	26600050	DRAIN PLUG, 1/2" NPT (OPTIONAL)	5
40	88930017	2" FLANGES SPOOL, STAINLESS	1
41	88920051	CARRIAGE	1
42	88920052	YOKE	1
43	26600005	CERCLIP INTERNAL, YOKE	1
44	88920053	ECENTRIC CRANKSHAFT STD STROKE	1
45	88920006	YOKE PIN	2
46	26620005	BUSH, YOKE	4
47	26600037	M6X20 SET SCREW	2
48	26600011	NEEDLE BEARING	1
49	26600001	TAPPER ROLLER BEARING	2
50	26600049	WENT PLUG 1/2" BSP	2
51	26600006	M6X20 HEX HEAD BOLT BLACKODIZED	6
52	88900003	OIL SEAL CAP	1
53	26600004	CERCLIP INTERNAL IS-3075 NI Ø80	1
54	26600002	OIL SEAL NBR 60 X 80 X 8MM	1
55	26600008	LOCK NUT, OIL SEAL	1
56	26600007	LOCK WASHER, OIL SEAL	1
57	26600003	O-RING, OIL SEAL CAP	1
58		MOTOR (CONTACT IDEX)	1
59		GERBOX (CONTACT IDEX)	1
60	26600028	JAW, COUPLING 55 (G.B DEPENDENT CONTACT IDEX)	1
61	88900040	COUPLING HOUSING Ø300x266 (G.B DEPENDENT CONTACT IDEX)	1
	88900025	COUPLING HOUSING Ø250 (G.B DEPENDENT CONTACT IDEX)	1
	88900026	COUPLING HOUSING Ø300 (G.B DEPENDENT CONTACT IDEX)	1
	88900027	COUPLING HOUSING Ø350 (G.B DEPENDENT CONTACT IDEX)	1
62	26620026	M10X55 HEX BOLT HOT-DEEP GLV	20
63	88920008	COVER PLATE, ALUMINUM	1
64	26620020	GASKET, COVER PLATE	1
65	88920009	SIGHT GLASS, COVER PLATE	1
66	26620011	M8X16 SOCKET HED CAP SCREW	10
67	26620012	M8 SPRING WASHER	10
68	26600027	M6X12 SOCKET HEAD CAP SCREW	8
69	88900035	SIGHT GLASS, COUPLING HOUSING (FOR ITEM 61 Ø350 & Ø300X266)	2
	88900028	SIGHT GLASS, COUPLING HOUSING (FOR ITEM 61 Ø300 & Ø250)	2
70	26600025	M12X50 HEX HEAD BOLT	14

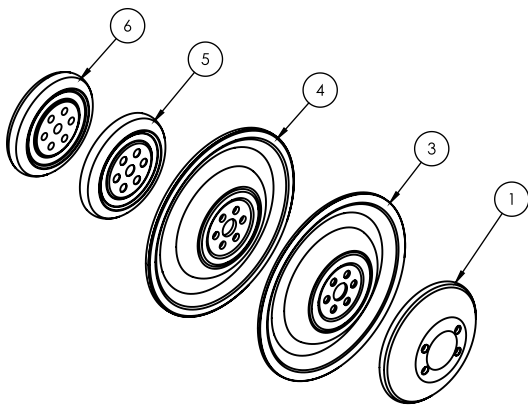
COGNITO EODD-4", STAINLESS STEEL PARTS

Item	PART NO	DESCRIPTION	Qty.
1	88900043	MANIFOLD DISCHARGE, STAINLESS	1
2	88900044	ELBOW DISCHARGE, STAINLESS	2
3	88900042	WET-CHAMBER, STAINLESS	2
4	88900046	DIAPHRAGM PLATE, STAINLESS	2
5	88900054	OVERLAY DIAPHRAGM, SANTOPRENE	2
6	88900053	BACKUP DIAPHRAGM, SANTOPRENE	2
7	88900052	SOFT WASHER, PTFE	2
8	88900047	PISTON PLATE, STAINLESS	2
9	88900018	DIAPHRAGM ROD	2
10	88900036	SEAL SLEEVE, STAINLESS STEEL	2
11	88900045	ELBOW SUCTION, STAINLESS	2
12	88900012	PUMP BASE, HORIZONTAL (FOR HORIZONTAL MOUNT GB)	1
	88900011	PUMP BASE, VERTICAL (FOR VERTICAL MOUNT GB)	1
13	88900012-1	GERBOX SUPPORT, HORIZONTAL (FOR HORIZONTAL MOUNT GB)	1
	88900011-1	GERBOX SUPPORT, VERTICAL (FOR VERTICAL MOUNT GB)	1
14	15600026	CONDUCTIVE SENSOR	2
15	88900059	MANIFOLD SUCTION, STAINLESS	1
16	88900009	BACK CHAMBER RHS	1
17	88900001	CENTRE CONSOLE	1
18	88900010	BACK CHAMBER LHS	1
19	88900051	OVERLAY DIAPHRAGM, PTFE	2
20	88900048	CHECK BALL VALVE, PTFE	4
	88900041	CHECK BALL VALVE, SANTOPRENE (WITH SANTOPRENE DIAPHRAGM)	4
21	88900034	CHECK VALVE SEAT, METALLIC (WITH SANTOPRENE DIAPHRAGM)	4
	88900050	CHECK VALVE SEAT, PTFE	4
21A	26600046	O-RING, SEAT VALVE (WITH PART NO #88900034)	8
22	26600013	WIPER SEAL	2
23	26600014	ROD SEAL	2
24	26600016	O-RING, SEAL SLEEVE	2
25	26600012	BUSH, SEAL SLEEVE	2
26	26600045	M6X16 SOCKET HEAD CAP SCREW	8
27	26600050	OIL PLUG 1/2" NPT	2
28	26600047	OIL PLUG 3/4" NPT	2
29	26600031	M12X24 HEX HEAD BOLT	4
30	26600059	M12 HEX NUT, HOT-DEEP GLV	36
31	26600060	M12X45 HEX HEAD BOLT, HOT-DEEP GLV	16
32	88900049	O-RING, MANIFOLD, PTFE	4
	26600024	O-RING, MANIFOLD (WITH SANTOPRENE DIAPHRAGM)	4
33	26600059	M12 HEX NUT, HOT-DEEP GLV	30
34	26600060	M12X45 HEX HEAD BOLT, HOT-DEEP GLV	16

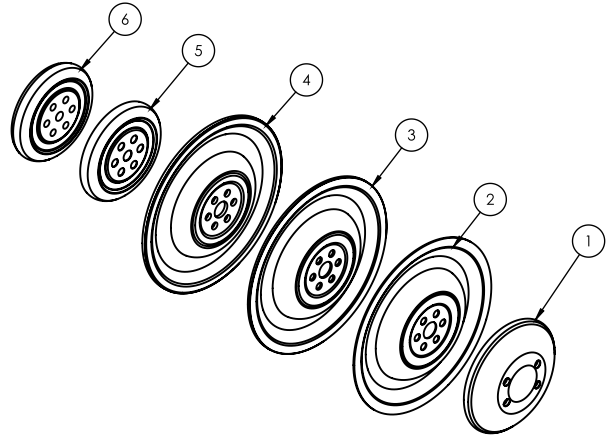
Item	PART NO	DESCRIPTION	Qty.
35	26600042	M16 EYE-BOLT	1
36	26600053	M12 LOCK WASHER, STAINLESS	12
37	26600048	M12X50 HEX HEAD BOLT, STAINLESS	12
38	26600044	M20X35 SOCKET HEAD CAP SCREW, STAINLESS	14
39	26600050	DRAIN PLUG, 1/2" NPT (OPTIONAL)	5
40	88910023	3" FLANGES SPOOL, STAINLESS	1
41	88900004	CARRIAGE	1
42	88900006	YOKE	1
43	26600005	CERCLIP INTERNAL, YOKE	1
44	88900002	ECENTRIC CRANKSHAFT STD STROKE	1
45	88900005	YOKE PIN	2
46	26600012	BUSH, YOKE	4
47	26600037	M6X20 SET SCREW	2
48	26600011	NEEDLE BEARING	1
49	26600001	TAPPER ROLLER BEARING	2
50	26600049	WENT PLUG 1/2" BSP	2
51	26600006	M6X20 HEX HEAD BOLT BLACKODIZED	6
51	26600006	M6X20 HEX HEAD BOLT BLACKODIZED	6
52	88900003	OIL SEAL CAP	1
53	26600004	CERCLIP INTERNAL IS-3075 NI Ø80	1
54	26600002	SHAFT SEAL	1
55	26600008	LOCK NUT, OIL SEAL	1
56	26600007	LOCK WASHER, OIL SEAL	1
57	26600003	O-RING, OIL SEAL CAP	1
58		MOTOR (CONTACT IDEX)	1
59		GERBOX (CONTACT IDEX)	1
60	26600029	JAW, COUPLING 75 (G.B DEPENDENT CONTACT IDEX)	1
	26600028	JAW, COUPLING 55 (G.B DEPENDENT CONTACT IDEX)	1
61	88900040	COUPLING HOUSING Ø300x266 (G.B DEPENDENT CONTACT IDEX)	1
	88900025	COUPLING HOUSING Ø250 (G.B DEPENDENT CONTACT IDEX)	1
	88900026	COUPLING HOUSING Ø300 (G.B DEPENDENT CONTACT IDEX)	1
	88900027	COUPLING HOUSING Ø350 (G.B DEPENDENT CONTACT IDEX)	1
62	26600058	M12X70 HEX BOLT HOT-DEEP GLV	20
63	88900007	COVER PLATE, ALUMINUM	1
64	26600026	GASKET, COVER PLATE	1
65	88900008	SIGHT GLASS, COVER PLATE	1
66	26600018	M10X20 SOCKET HED CAP SCREW	10
67	26600019	M10 SPRING WASHER	10
68	26600027	M6X12 SOCKET HEAD CAP SCREW	8
69	88900035	SIGHT GLASS, COUPLING HOUSING (FOR ITEM 61 Ø350 & Ø300X266)	2
	88900028	SIGHT GLASS, COUPLING HOUSING (FOR ITEM 61 Ø300 & Ø250)	2
70	26600025	M12X50 HEX HEAD BOLT	14

5.5 Exploded View of Diaphragm Assembly

(a) SANTOPRENE Diaphragm Assembly



(b) SANTOPRENE + PTFE Diaphragm Assembly



(c) NEOPRENE Diaphragm Assembly

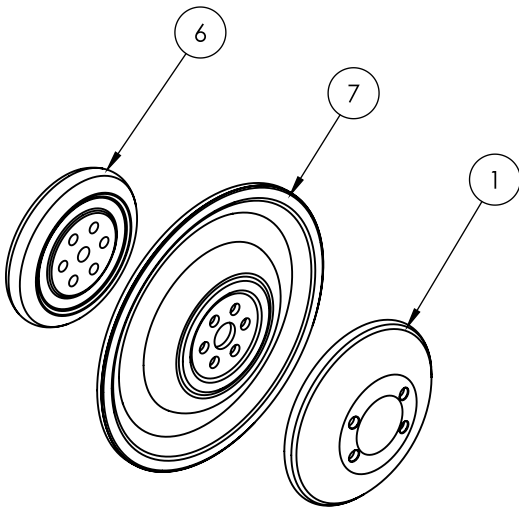


TABLE NO	ITEM
1	Diaphragm Plate
2	PTFE Overlay Diaphragm
3	Santoprene Overlay Diaphragm
4	Santoprene Backup Diaphragm
5	PTFE Soft Washer
6	Piston Plate
7	Neoprene Diaphragm

COLOR CODE	
Material	Diaphragm Color
Neoprene	Black
Santoprene	Red
PTFE	White

6.0 CONTROL PANEL

Control Panel is used to control the pump operation. It integrates with the pump to control its flow by increasing or decreasing the speed of the motor through variable frequency drive (VFD) as per the requirement/application of the user.

It receives signals from the leak sensor installed on the pump and trips the motor in case of diaphragm rupture.

6.1 Control Panel Components – Safe Area Application

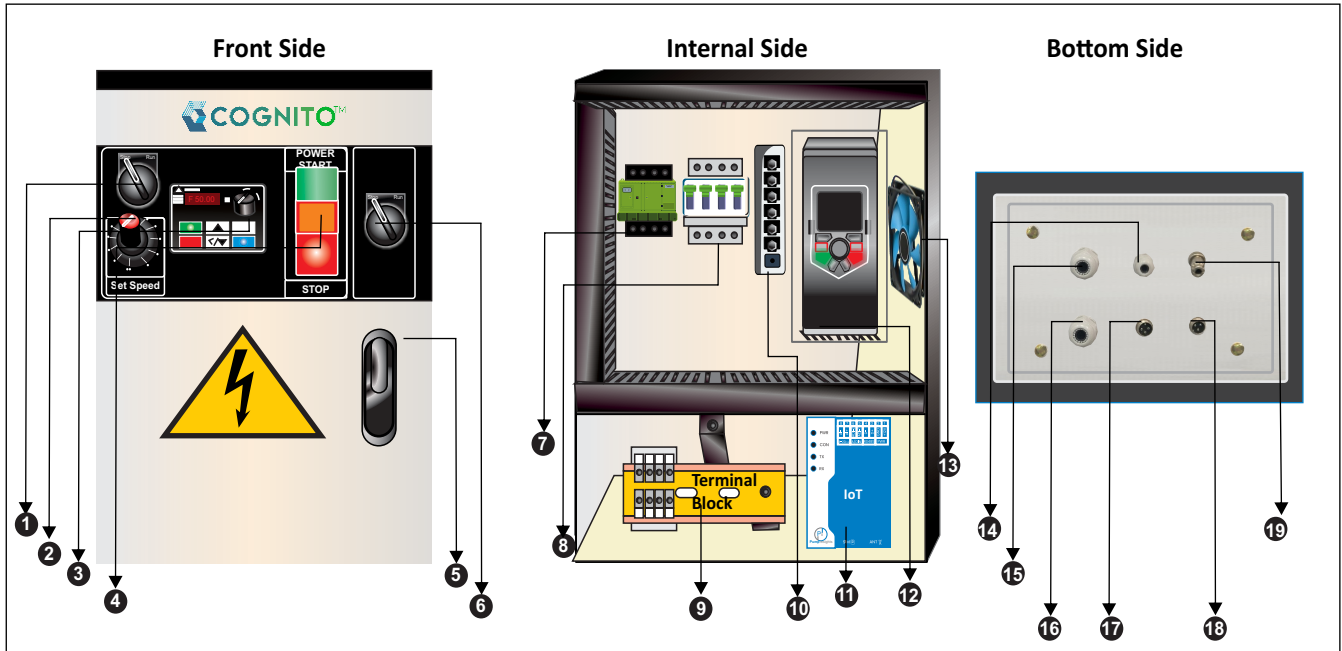


Figure - 10(a): Control Panel Components

CONTROL PANEL COMPONENTS

1	Pump Stop/Start Switch	6	Auto/Manual Switch	11	Smart IoT Gateway	16	3 Phase O/P Power to Motor
2	Speed Controller	7	Incoming Power MCB	12	VFD	17	Left Diaphragm Leak Sensor Connector
3	VFD Local Display	8	Contactor	13	Cooling Fan	18	Right Diaphragm Leak Sensor Connector
4	VFD Power ON/OFF Pushbutton	9	Terminal Block	14	Antenna Cable Entry	19	Future Use
5	Door Lock	10	SMPS	15	3 Phase I/P Power Supply to Control Panel		

6.2 Control Panel Components – Hazardous Area Application

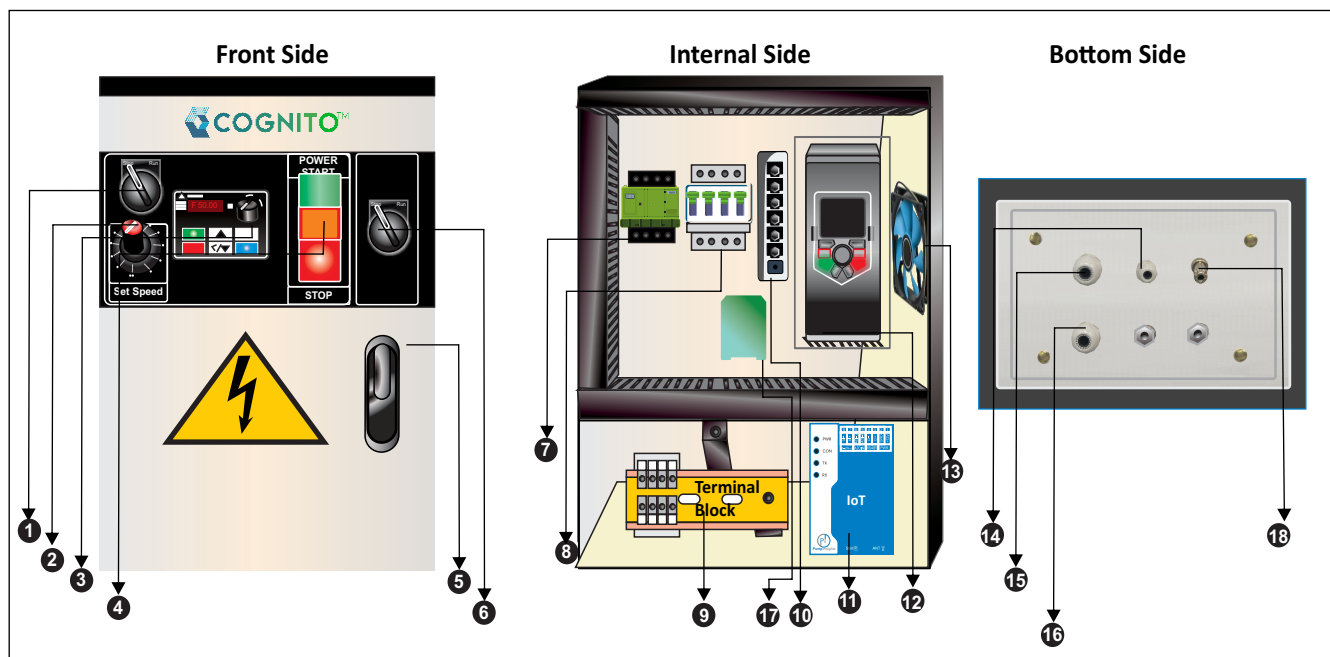


Figure - 10(b): Control Panel Components

CONTROL PANEL COMPONENTS							
1	Pump Stop/Start Switch	6	Auto/Manual Switch	11	Smart IoT Gateway	16	3 Phase O/P Power to Motor
2	Speed Controller	7	Incoming Power MCB	12	VFD	17	Switch Amplifier
3	VFD Local Display	8	Contactor	13	Cooling Fan	18	2 Pair 1mm ² FRLS Cable Entry
4	VFD Power ON/OFF Pushbutton	9	Terminal Block	14	Antenna Cable Entry		
5	Door Lock	10	SMPS	15	3 Phase I/P Power Supply to Control Panel		

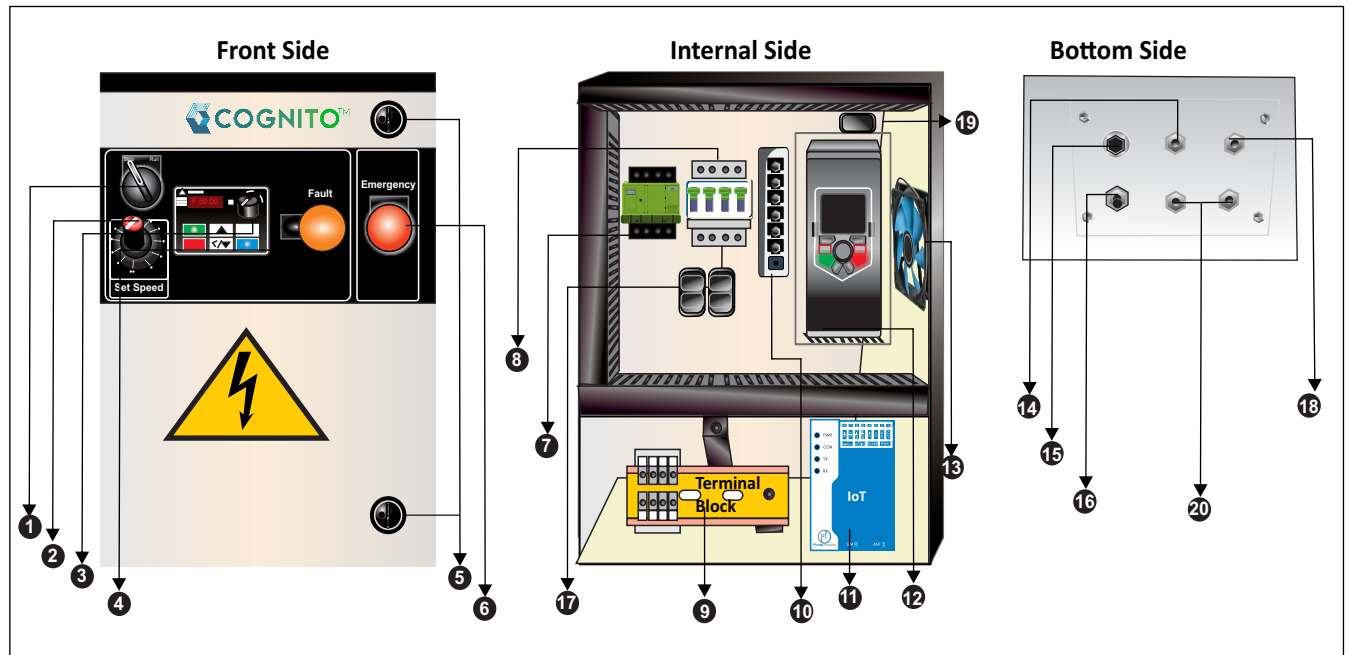


Figure - 10(c) : Control Panel Components

CONTROL PANEL COMPONENTS

1	Pump Stop/Start Switch	6	Emergency Stop	11	Smart IoT Gateway	16	3 Phase O/P Power to Motor
2	Speed Controller	7	Incoming Power MCB	12	VFD	17	Sensor Relays
3	VFD Local Display	8	Contactor	13	Cooling Fan	18	Future Use
4	Fault Lamp	9	Terminal Block	14	Antenna Cable Entry	19	Door Safety Switch
5	Door Lock	10	SMPS	15	3 Phase I/P Power Supply to Control Panel	20	Sensor cable entries

Name Plate Details

CONTROL PANEL

Model No.

Sr. No.

T_{Ambiant} Rated Power.

MF. Year. Made In INDIA

Electrical Input.

Voltage. Phase.

Frequency. Wire.

Max. Current. Dr. No.

IDEX India Pvt. Ltd.
Survey No. 256, G.I.D.C Manjusar,
Savli, Vadodara, Gujarat, India 391770

7.0 VARIABLE FREQUENCY DRIVE (VFD)

Variable Frequency Drive is mounted inside the Control Panel. It is pre-configured with all the standard configurations required to start the pump before shipment.

Refer below the standard configuration chart for settings present in the pre-configured VFD.

Parameter	Parameter Description	Set Value	Operation
00-02	Parameter Reset	9	Reset All Parameter to 50Hz
00-20	Frequency Command	2	External Analog Reference
00-21	Operation Command	1	External Terminals
01-12	Acceleration Time	120	Modified Setting (120)
01-13	Deacceleration Time	10	Modified Setting (10)
02-00	Operation Control	2	M1-Run & MI3-Stop (Modified Setting-1)
02-04	Multifunction IP (MI4) Command	18	Force to Stop
02-05	Multifunction IP (MI5) Command	40	Force to Stop
02-12	Multifunction IP Selection	0	24 For NC Contact Mi4 & 5 (Modified Setting-0)
02-13	Multifunction OP 1	1	Indication During Run
02-35	External Operation Control Selection After Reset & Reboot	1	Drive Run If the Run Command Remain After Reset or Reboot
06-06	Over Torque Detection Selection	4	Stop After Over Torque Detection
06-07	Over Torque Detection Level	90	For 6 Bar=90%
06-08	Over Torque Detection Time	0.1	0.1 - 60.0 Secs
07-20	Emergency Stop Selection	5	System Deceleration
09-00	Communication Address	1	Device Address
09-01	Comn. Transmission Speed	9.6	9600 kbps
09-04	Comn. Protocol	12	8, N, 1 RTU

Note :

1. VFD Parameters are pre-configured at IDEX Factory. For any changes, customization or validation, please contact IDEX.
2. Above parameters are applicable for VFD part numbers as mentioned below:

PART NUMBER	VFD PARAMETERS
15600048	3hp EODD CONTROL PANEL IOT
15600022	5hp EODD CONTROL PANEL IOT
15600023	7.5hp EODD CONTROL PANEL IOT
15600024	10hp EODD CONTROL PANEL IOT

8.0 WIRING DIAGRAM

8.1 Control Panel

8.1.1 Control Panel - Safe Area Application

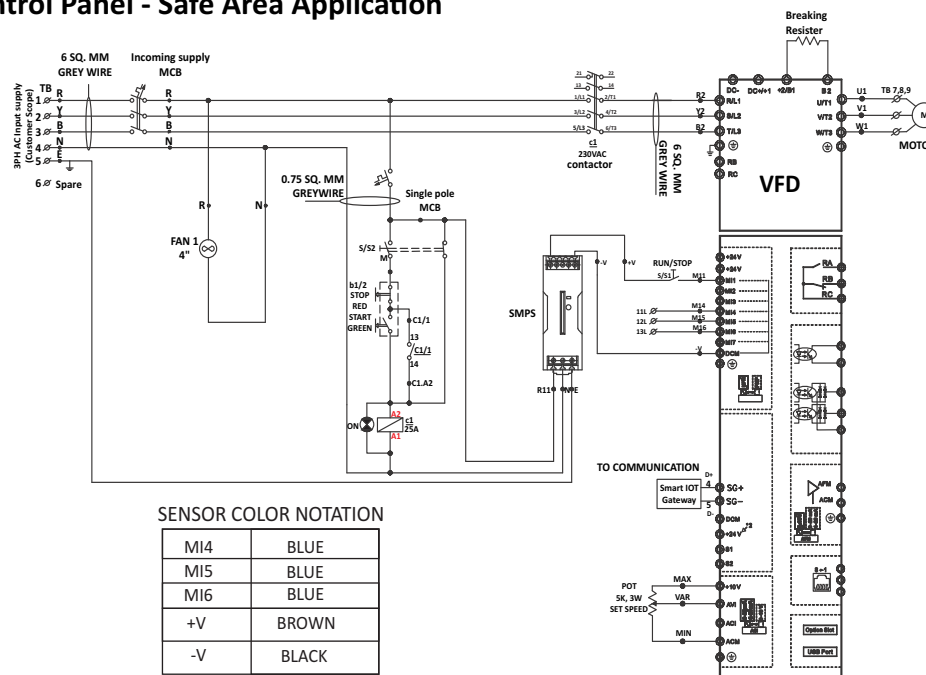


Figure - 11(a): Control Panel Wiring Diagram

Cable Termination Details

Control Panel incoming Power Supply, Input from leak detection sensors, Drive control Output and Modbus communication (2 wire, RS-485) are terminated in the Control Panel, as shown in Figure - 12

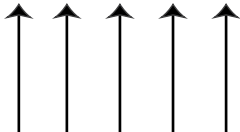
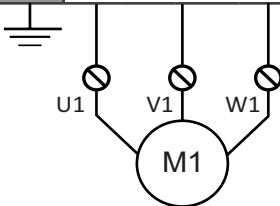
TERMINAL DETAIL							TRIPLE TERMINAL									
TB COLOUR	R	Y	B	BK	GR	GY	R	Y	B	GR	MI4	MI5	MI6			
TB NUMBER	1	2	3	4	5	6	7	8	9	10	-V	-V	-V	14	15	
FERRULE	R	Y	B	N	E		U1	V1	W1	E	+V	+V	+V	D+	D-	
DESCRIPTION	415V AC, 3PH					SPARE	TO MOTOR M1				11	12	13	SMART IoT GATEWAY		
									LEFT DIAPHRAGM LEAK SENSOR CONNECTOR		RIGHT DIAPHRAGM LEAK SENSOR CONNECTOR		FUTURE USE		FOR RS 485 COMM.	

Figure - 12(a): Cable Termination Detail

Control Panel Incoming Power Supply

Terminal 1 to 4 : 3 - phase Input Power Supply to the Control Panel Terminal 5 : Earthing

Drive Control Output

Terminal 7 to 10 : 3 - phase VFD Control Output to the motor (to drive the pump)

8.1.2 Control Panel - Hazardous Area Application

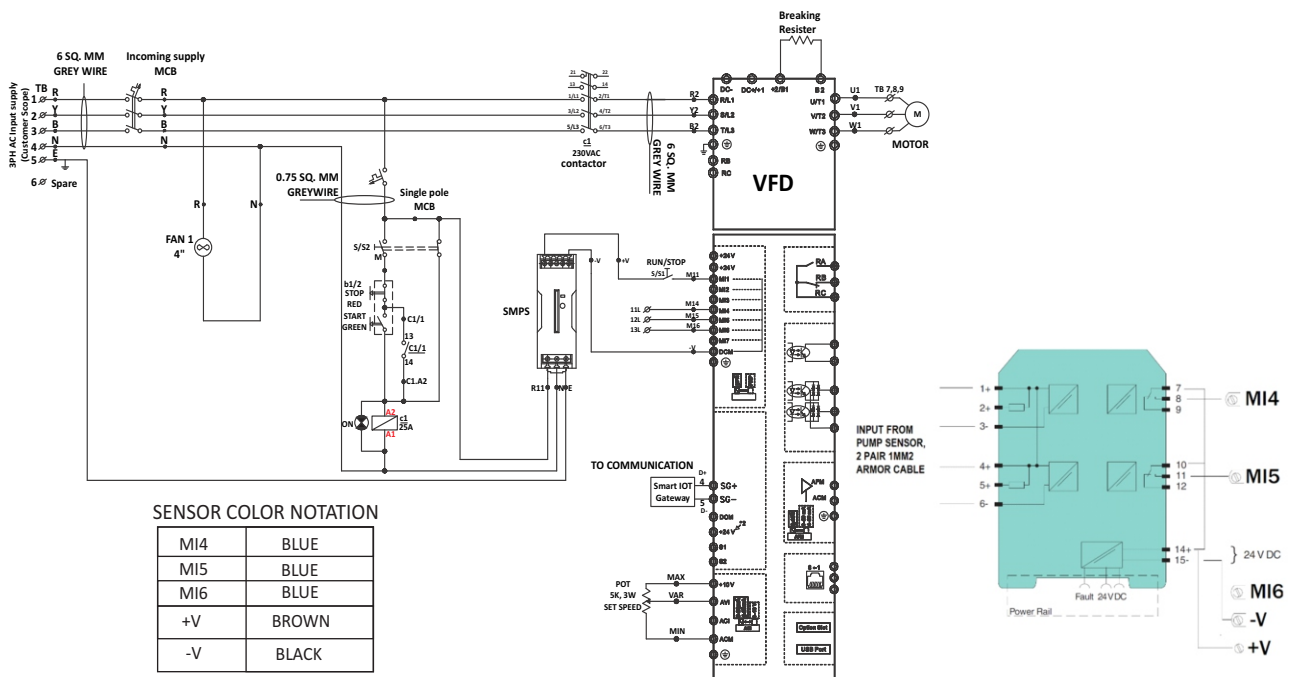


Figure - 11(b): Control Panel Wiring Diagram

Cable Termination Details

Control Panel incoming Power Supply, Input from leak detection sensors, Drive control Output and Modbus communication (2 wire, RS-485) are terminated in the Control Panel, as shown in Figure - 12

TERMINAL DETAIL							TRIPLE TERMINAL													
TB COLOUR	R	Y	B	BK	GR	GY	R	Y	B	GR	MI4	MI5	MI6							
TB NUMBER	1	2	3	4	5	6	7	8	9	10	-V	-V	-V	-V	14	15				
FERRULE	R	Y	B	N	E	SPARE	U1	V1	W1	E	+V	+V	+V	+V	D+	D-				
DESCRIPTION	415V AC, 3PH						TO MOTOR M1					11	12	13	SMART IoT GATEWAY					
415V AC, 3 PH INPUT SUPPLY <td colspan="7"> U1V1W1 M1 MOTOR HP, 3PH <td colspan="7"> LEFT DIAPHRAGM LEAK SENSOR CONNECTOR RIGHT DIAPHRAGM LEAK SENSOR CONNECTOR SWITCH AMPLIFIER DOUBLE DECAR 2-TB FOR RS 485 COMIN. </td></td>							U1V1W1 M1 MOTOR HP, 3PH <td colspan="7"> LEFT DIAPHRAGM LEAK SENSOR CONNECTOR RIGHT DIAPHRAGM LEAK SENSOR CONNECTOR SWITCH AMPLIFIER DOUBLE DECAR 2-TB FOR RS 485 COMIN. </td>							LEFT DIAPHRAGM LEAK SENSOR CONNECTOR RIGHT DIAPHRAGM LEAK SENSOR CONNECTOR SWITCH AMPLIFIER DOUBLE DECAR 2-TB FOR RS 485 COMIN.						

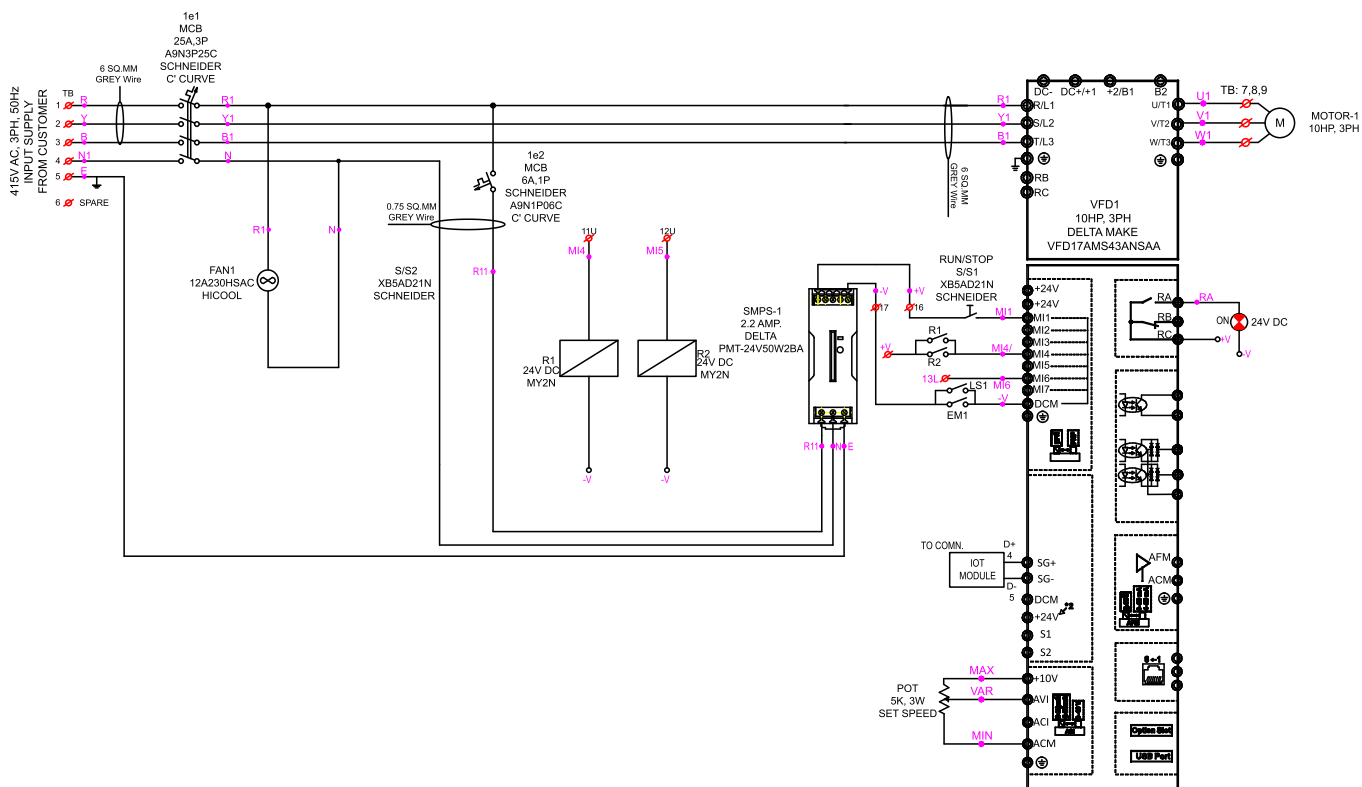
Figure - 12(b): Cable Termination Detail

Control Panel Incoming Power Supply

Terminal 1 to 4 : 3 - phase Input Power Supply to the Control Panel Terminal 5 : Earthing

Drive Control Output

Terminal 7 to 10 : 3 - phase VFD Control Output to the motor (to drive the pump)



Cable Termination Details

Control Panel incoming Power Supply, Input from leak detection sensors, Drive control Output and Modbus communication (2 wire, RS-485) are terminated in the Control Panel, as shown in Figure - 12

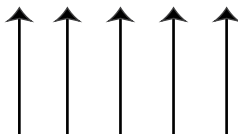
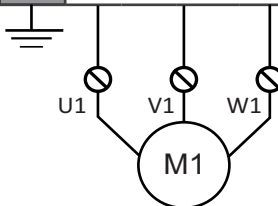
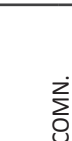
TERMINAL DETAIL							TRIPLE TERMINAL									
TB COLOUR	R	Y	B	BK	GR	GY	R	Y	B	GR	MI4	MI5	MI6			
TB NUMBER	1	2	3	4	5	6	7	8	9	10	-V	-V	-V	-V	14	15
FERRULE	R	Y	B	N	E	SPARE	U1	V1	W1	E	+V	+V	+V	+V	D+	D-
DESCRIPTION	415V AC, 3PH						TO MOTOR M1					11	12	13	SMART IoT GATEWAY	
 415V AC, 3 PH INPUT SUPPLY						 MOTOR HP, 3PH	 LEFT DIAPHRAGM LEAK SENSOR CONNECTOR		 RIGHT DIAPHRAGM LEAK SENSOR CONNECTOR		 SWITCH AMPLIFIER DOUBLE DECAR 2-TB		 FOR RS 485 COMM.			

Figure - 12(b): Cable Termination Detail

Control Panel Incoming Power Supply

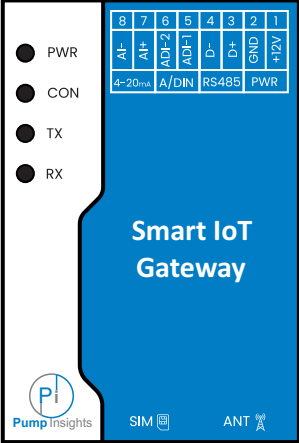
Terminal 1 to 4 : 3 - phase Input Power Supply to the Control Panel Terminal 5 : Earthing

Drive Control Output

Terminal 7 to 10 : 3 - phase VFD Control Output to the motor (to drive the pump)

8.2 Smart IoT Gateway

1. When installed with Cognito EODD Pump, enables remote monitoring & alert system to optimize your pump performance to achieve Operational Excellence. It keeps you up to date on maintenance needs. There will be seamless integration between Cognito EODD pump and Pump INSIGHTS Web based application through Smart IoT Gateway to get real-time updates (via sms & email)
2. Smart IoT Gateway is pre-configured at our factory before shipment.
3. Pin - 1 & Pin - 2 as shown in Figure - 14 is used to power up the Smart IoT Gateway. Pin - 1 connects to +ve and Pin - 2 connects to -ve terminal of the power supply.
4. Pin - 3 & Pin - 4 is for Modbus communication, which is connected to VFD to read the data.
5. Pin - 3 connects to D+ and pin - 4 connects to D- on the terminal block of the Control Panel
6. Screw antenna which is supplied along with the Control Panel is to be mounted on the threaded connection marked as "ANT" on the Smart IoT Gateway. Antenna should be mounted outside the panel for better network strength.
7. To check / insert the SIM card, Press yellow button "Marked as SIM" on the bottom side of the Smart IoT Gateway which will eject the SIM card tray.



LED	NAME	DESCRIPTION	
GREEN ●	POWER	Light when Power on the device	
		LED Status	Connection State
		Flashing (ON for 100ms & OFF for 100ms)	SIM Card not found
		Flashing (ON for 500ms & OFF for 500ms)	Searching for GSM Network
RED ●	GSM	Flashing (ON for 0.1s & OFF for 2.9s) Once at every 3 sec	GSM Network Registered
		Flashing twice at every 3 sec	GPRS IP Connected
		Flashing 5 times	GPRS IP Sending data
		LED OFF	GSM Fault
GREEN ●	COM TX	Blink on data transmission in RS485 port	
YELLOW ●	COM RX	Blink on data reception in RS485 port	

SMART IoT GATEWAY PIN CONNECTIONS

PIN 1	+12V	Power Supply
PIN 2	GND	
PIN 3	D+	RS485
PIN 4	D-	
PIN 5	ADI-1	A/DIN
PIN 6	ADI-2	
PIN 7	AI+	4-20mA
PIN 8	AI-	

Figure - 14

8.3 Modbus Communication Diagram to connect Multiple Control Panel (VFD)

1. Control Panels from multiple pumps can be connected to a single Smart IoT Gateway for communication. You can connect Modbus output from 5 different control panels to a single Smart IoT Gateway.
2. The total communication wire cable length between Smart IoT Gateway and the last Control Panel (VFD) should be less than 500m.
3. Refer Figure - 15 to connect Modbus output from multiple Control Panels (VFD) to a single Smart IoT Gateway.

Note: D+ & D- are the terminal blocks for making the connection

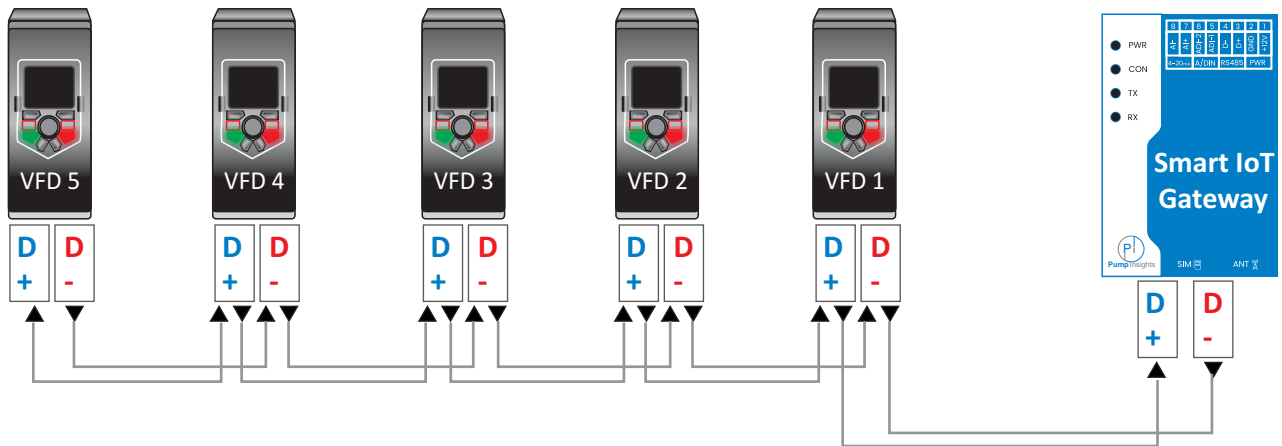


Figure - 15: Modbus Communication Diagram for multiple Control Panels

8.4 Leak Detection Sensor Assembly

8.4.1 Leak Detection Sensor Assembly: Safe Area Application

1. There are 2 leak detectors (one for left diaphragm and another for right diaphragm) which come with 5 meters of cable
2. Leak detection sensors are supplied with the female connectors which will be then connected to the male connectors provided on the gland plate of the Control Panel
3. Refer Figure - 13 for connecting leak sensors to the panel

Note: Internal wiring between leak detection sensors and the terminal block are pre-wired at the factory before shipment. Leak detection sensors -1 and sensor-2 are connected to the terminal 11 and 12 respectively as shown in Figure – 12

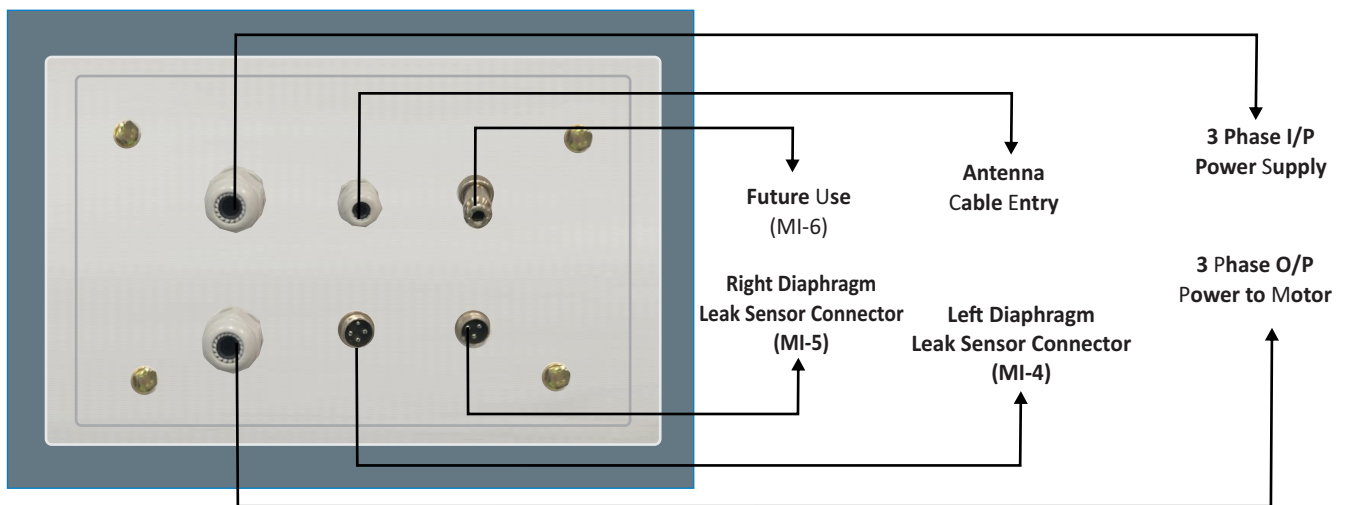
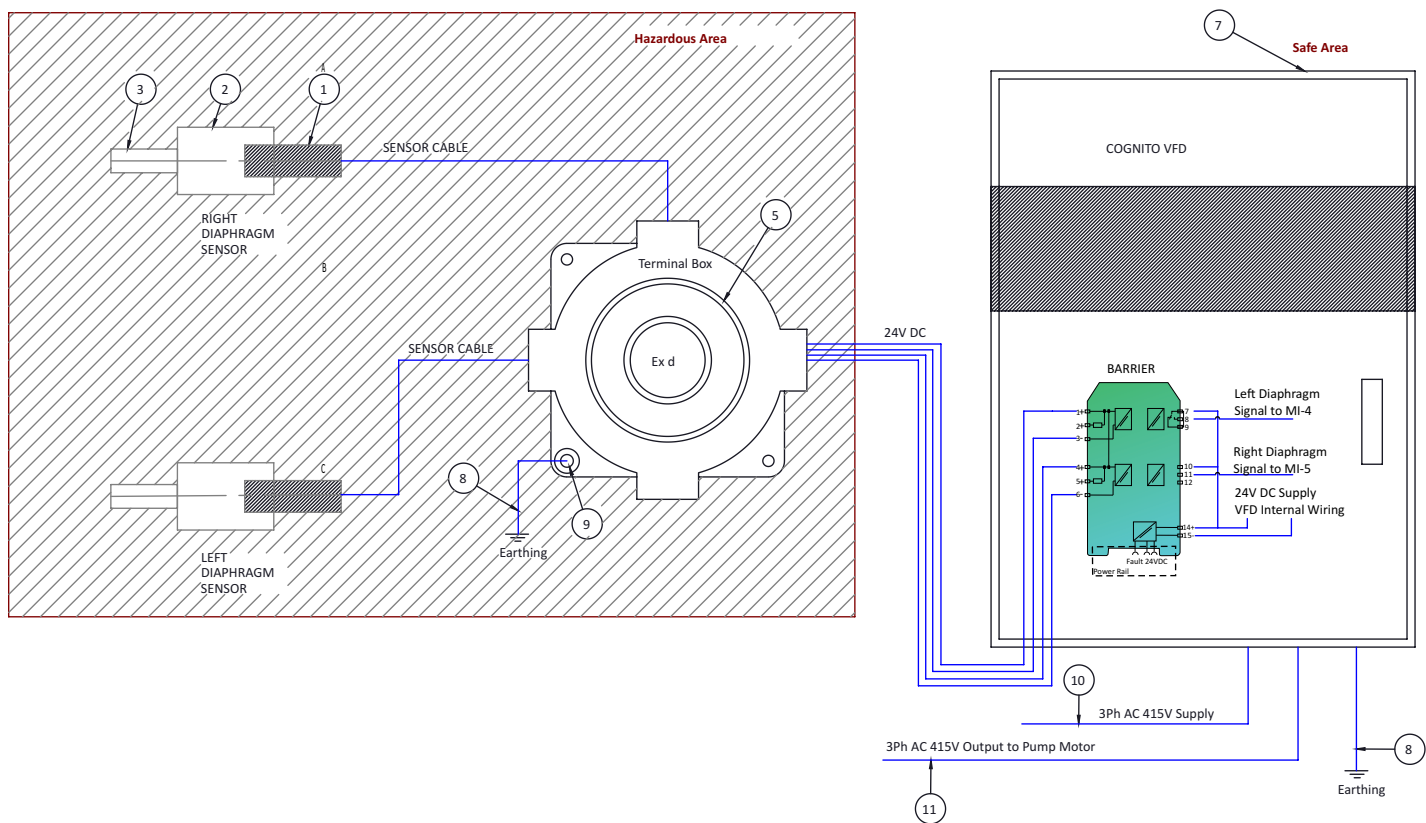


Figure - 13

8.4.2 Leak Detection Sensor Assembly - Hazardous Area Application

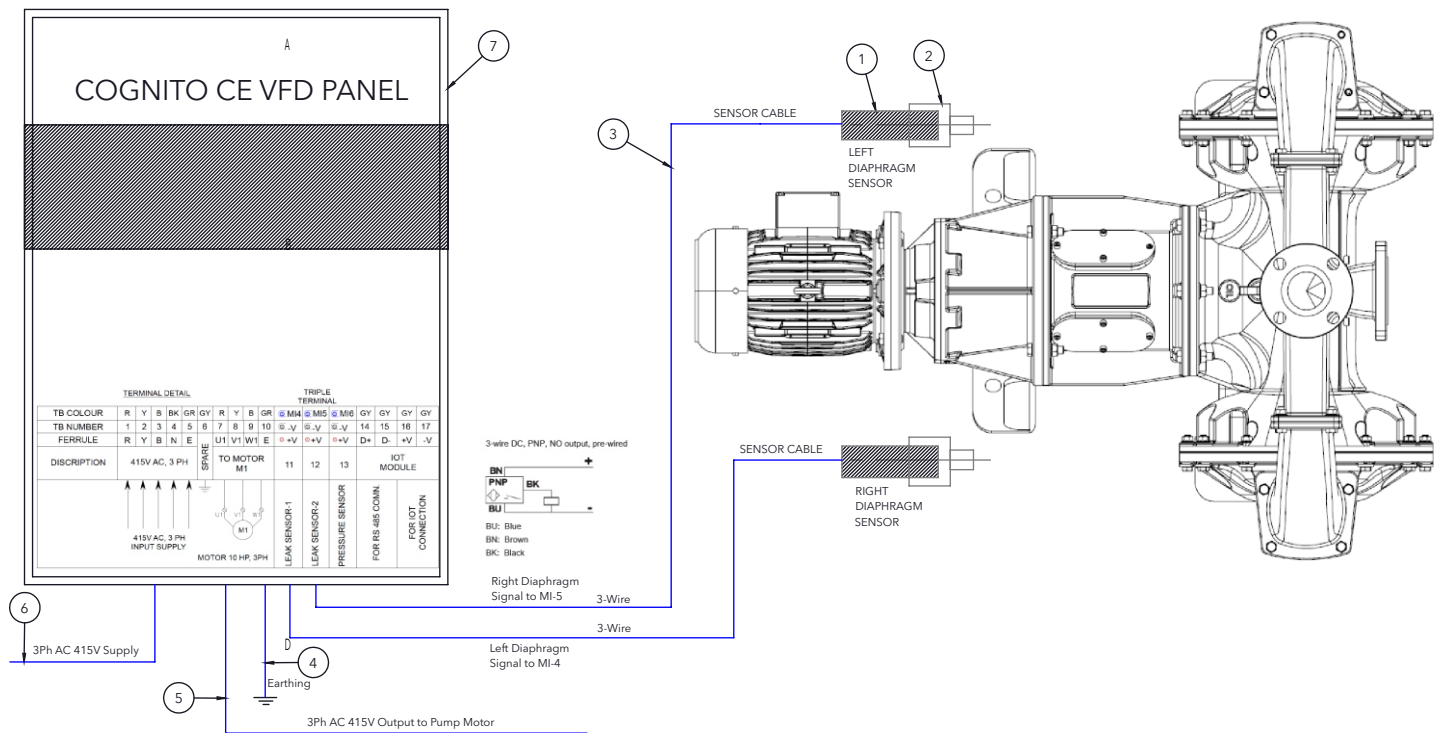
1. There are 2 leak detection sensors that are used per pump which come with hermetically Sealed specified cable length.
2. Both Leak detection sensors need to connect with Hazardous area specified Terminal box
3. Terminal box connected with Barrer Switch Amplifier which is fitted in VFD Panel which is Placed in Safe Area through Armour cable.
4. All connections Should be wired as shown by the schematic below by a qualified and certified electrician according to any local and national electric codes.



BOM			
Baloon No.	Description	Size & MOC	Qty.
1	Capacitive Sensor ATEX CJ4-12GK-N	M12X1	2
2	Delrin Adaptor	1/2" BSP TO M12X1	2
3	Pipe Nipple Male	1/2" BSP, M.S	2
4	24V DC Cable	Actual	-
5	Ex D Terminal Box		1-KIT
6	Barrier Switch Amplifier	KFD2-SR2-Ex2.W	1
7	Cognito VFD Panel	10hp, 7.5hp, 5hp, 3hp	1
8	Earthing Cable, with Lug	Actual	-
9	Cable Lug	Aluminum	15
10	Ex Armed Cable Supply	Actual	-
11	Ex Armed Cable Output	Actual	-

8.4.3 Leak Detection Sensor Assembly - CE Certified

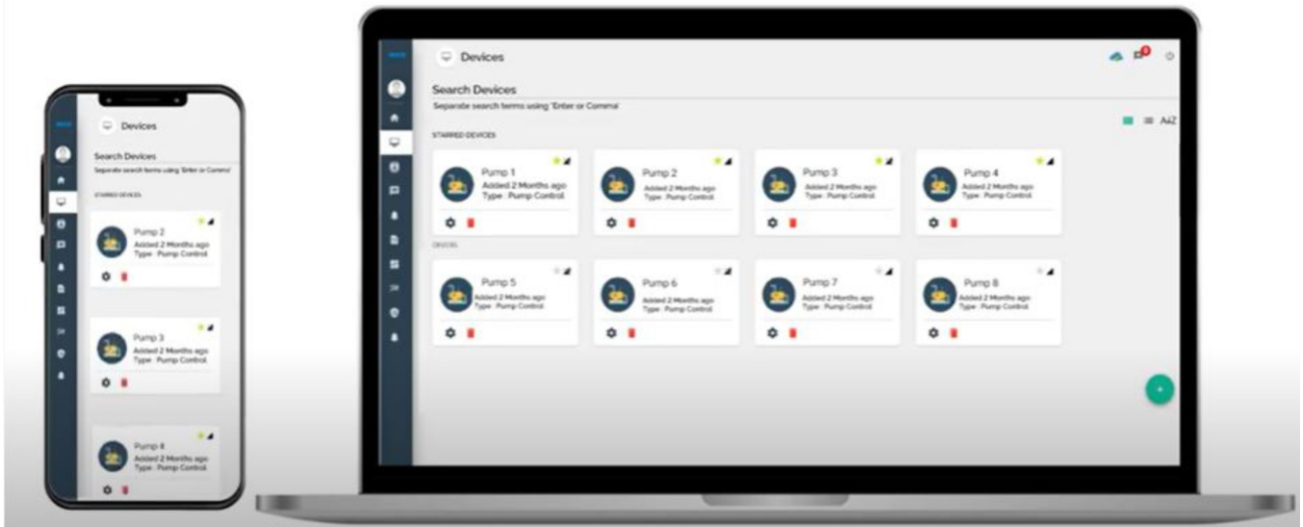
1. There are 2 leak detection sensors that are used per pump which come with Sealed type specified cable length.
2. Both Leak detection sensors need to connect with in VFD Panel MI4 MI5 3-wire terminal.
3. All connections Should be wired as shown by the schematic below by a qualified and certified electrician according to any local and national electric codes.



BOM

BALOON NO.	DESCRIPTION	SIZE & MOC	QTY.
1	CAPACITIVE SENSOR CE	M12 X 1	2
2	CONNECTOR	1/2" BSP TO M12 X 1 / 1/4" BSP TO M12 X 1	2
3	SENSOR CABLE (SEALED)	3-WIRE, 24V DC	-
4	EARTHING CABLE, WITH LUG	1-CORE 4-MM2, 1100V	-
5	PANEL OUTPUT CABLE	4-CORE 4MM2, 1100V ARMoured CABLE	-
6	POWER SUPPLY CABLE	4-CORE 4MM2, 1100V ARMoured CABLE	-
7	COGNITO VFD PANEL	10HP, 7.5HP, 5HP, 3HP,2HP, 1.5HP	1

PUMP INSIGHTS, a web based application, is developed for monitoring of all IDEX INDIA pump solutions and is a



Pump Insights helps you to connect, monitor and analyse your pump remotely and enables you to make better and faster decision to optimize your pump performance and improve overall process efficiency. It provides real-time updates for all your installed pumps helping you remotely monitor critical application.

It can be accessed from anywhere at <http://pi.cognitosmartinsights.ai>

Pump Insights kit include,

- **Smart IoT Gateway**
- **Indian Operator SIM card (Installed in Smart Gateway)**
- **Subscription to **Pump** Insights application**

For enabling **Pump** Insights application, contact IDEX India Pvt. Ltd.

10.1 Pump Components

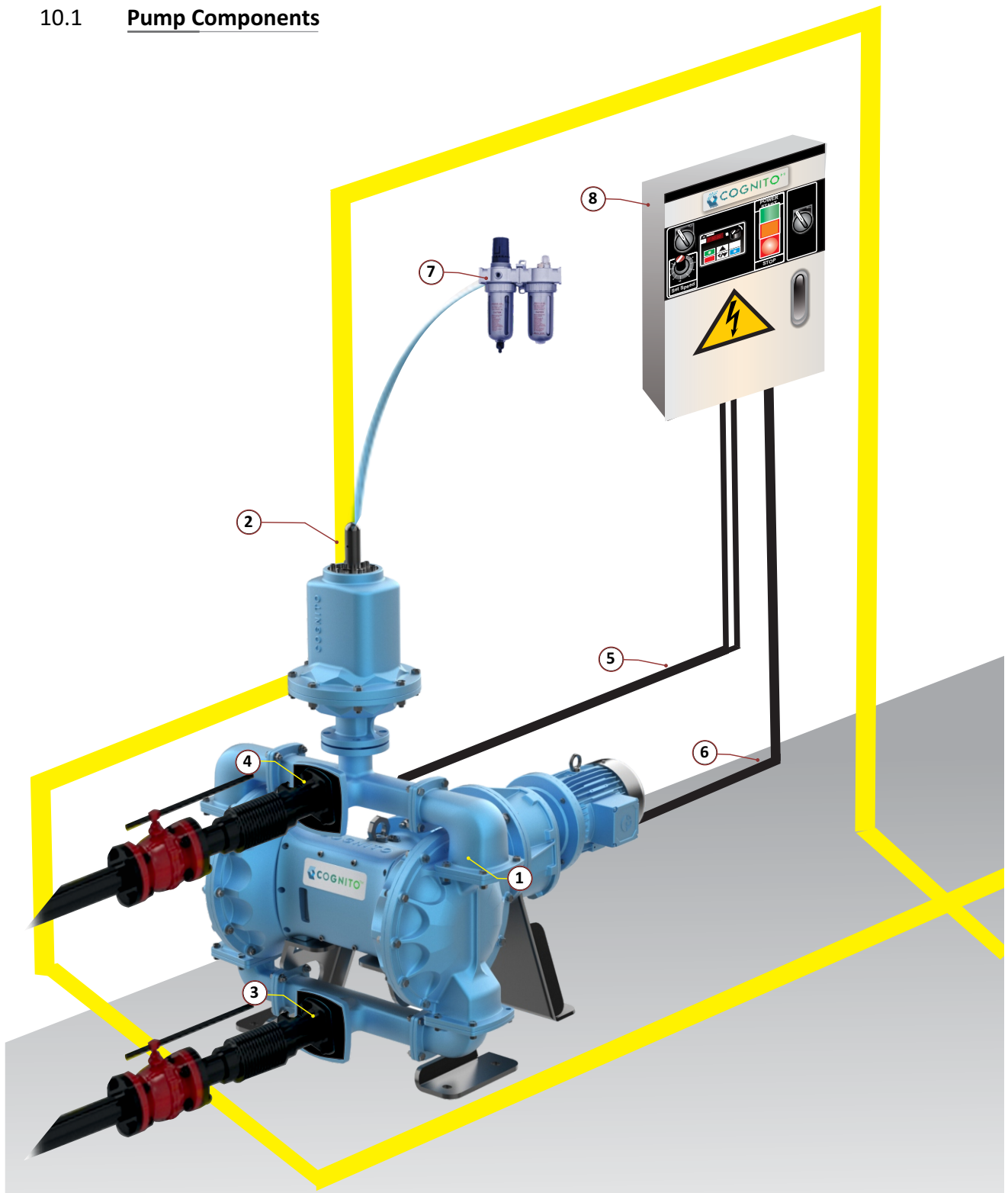


Figure - 16: Pump Components

SERIAL	DETAILS	SERIAL	DETAILS
01	Pump	05	Leak Detection Sensor Cable
02	Dampener (optional)	06	Motor Wire
03	Suction Flange	07	Filter and Regulator
04	Discharge Flange	08	Control Panel

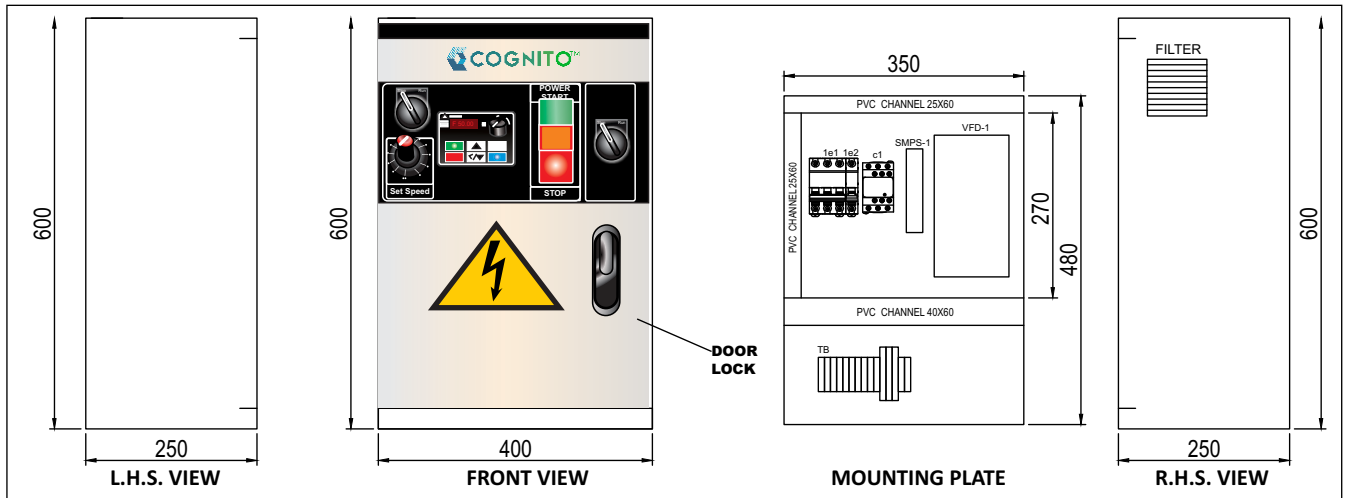
10.2 Installation Guidelines

10.2(a) Cognito EODD Pump

1. Locate the pump as close as to the product being pumped if possible.
2. Make sure to have levelled foundation floor.
3. Drill the holes for Anchor fasteners.
4. Clean & install the anchor fastener bolts on the previously drilled holes.
5. Position the pump and align the holes on pump to the holes made on the floor.
6. Fasten the anchor fastener nuts and secure the pump.
7. Connect the suction port (Inlet) & discharge port (Outlet) with the expansion rubber bellows
8. Fix the Control Panel on the wall as per Control Panel installation guideline
9. Avoid any tight bends or drastic reduction in the pipeline
10. Connect the sensor wires from the pump to the corresponding port on the Control Panel.
(Refer Figure - 12, Cable Termination details of Control Panel)
11. Connect the motor wire to the Control Panel, as per wiring diagram. (Refer Figure - 12, Cable Termination details of Control Panel.
12. Connect Pneumatic Air Supply to Filter & Regulator unit of Dampener.
13. Connect the main Power Supply to the Control Panel. Do not start pump, yet ! Go through the Pre-start Procedure and check list mentioned in the manual, before starting the pump.
14. Inspect for any sign of leakages, If found, tighten the fittings and fasteners as per the recommended torque. If leakage still persists, contact IDEX. Torque details are mentioned after startup procedure.
15. It is recommended to install a pressure gauge and pressure relief valve

10.2(b) Control Panel Mounting Guideline

Consider the dimension of EODD control panel 400W x 600H x 250D as a reference to mount the control panel either on the wall or on the supporting structure.



1. Use 10 mm holes available on the back side of the panel to mount either on the wall or on the supporting structure. Mounting clamps will be provided to fix the panel.
2. Weight of the Control Panel is approx. 25 kg. So, ensure to choose wall or supporting structure to hold the weight of the Control Panel while mounting
3. Wall or supporting structure should be free from the vibrations and ensure proper ventilation for the panel.
4. It is advised to install panel at 1.5 m above the surface for easy maintenance.
5. Drill 10 mm hole either on the wall or on the supporting structure to install the panel. Use 10mm bolt with stud to fix the panel and ensure proper alignment.
6. While carrying above steps, ensure power is switched-off and no live electrical cable passes nearby the wall or supporting structure.
7. Once panel is mounted, ensure proper clearance, and make sure it is aligned properly & sturdily.

10.2(c) Smart IoT Gateway

Smart IoT Gateway is installed inside the Control Panel. Real time pump data is sent to the Pump Insights Application through this Smart IoT Gateway.

10.3 Pre-Requisite before Starting Pump Operation

1. Ensure 3-phase Power Supply provided to the Control Panel is from reliable source and it matches voltage and frequency of VFD drive and motor
2. All cables inside the Control Panel should be connected with proper lugging. Ensure all cables are gently fastened and cable glands are firmly tightened
3. Ensure all foundation bolts are firmly tightened
4. Ensure Panel is fixed properly using support and verify connections as per wiring diagram before starting the pump (refer Figure - 12, Cable Termination details of Control Panel.)
5. Ensure proper grounding of the motor
6. Check & ensure if the speed control knob is in the minimum position
7. Rotary switch in Control Panel is available to RUN the pump either in AUTO / MANUAL mode. If switch is in the MANUAL mode, manual START is required to start the Pump. If switch is in AUTO mode, as soon as the control panel power is switched on, Pump starts. So, ensure switch should be in MANUAL mode before starting the pump operation
8. Ensure pump suction valve and discharge valve is fully open before starting the pump and required air is lined up to the dampener

10.4 Pump Operation using Control Panel (Startup Procedure)

1. Ensure pre-requisite to be fulfilled before starting the pump
2. Switch ON MCB located inside the Control Panel (refer Figure - 10, Control Panel Components)
3. Power on the VFD by pressing Green button (refer Figure - 10, Control Panel Components)
4. After turning ON VFD, rotary switch rotates from STOP to RUN for starting the pump
5. Set the desired frequency in the Control Panel using speed control knob as per application requirement
6. Ensure Pump Discharge Pressure must be less than rated pressure
7. After getting the START command from the Control Panel, pump starts operating based on the frequency threshold set from speed control knob and acceleration time

Note:

1. Motor is protected with basic safety interlock like over voltage , over torque, over current etc.
2. Tripping error code is displayed on VFD local display for easy understanding.
For detail troubleshooting, please contact IDEX
3. Above recommendation on Installation & operation is applicable for Cognito EODD Pump including Control Panel & other components supplied by IDEX. For non standard pump configuration, contact IDEX

10.5 Torque Details for Metallic Pump

COGNITO EODD-1"

RESPECTIVE PART BOLTS	SIZE	TORQUE	UNIT
Back-chamber Bolt	M10	30	NM
Diaphragm Rod With Carriage	M16	BUTT	—
BUNA Diaphragm Assembly	M8	25	NM
Santoprene Diaphragm Assembly	M8	25	NM
Santoprene+PTFE Diaphragm Assembly	M8	30	NM
Diaphragm Assly. With Diaphragm Rod	M16	BUTT	—
Wet-chamber Outer Bolts	M8	25	NM
Manifold & Elbow Outer Bolts	M8	25	NM

COGNITO EODD-2"

RESPECTIVE PART BOLTS	SIZE	TORQUE	UNIT
Back-chamber Bolt	M12	40	NM
Diaphragm Rod With Carriage	M20	BUTT	—
Santoprene Diaphragm Assembly	M10	30	NM
Santoprene+PTFE Diaphragm Assembly	M10	30	NM
Diaphragm Assly. With Diaphragm Rod	M16	BUTT	—
Wet-chamber Outer Bolts	M8	30	NM
Manifold & Elbow Outer Bolts	M8	30	NM

COGNITO EODD-3"

RESPECTIVE PART BOLTS	SIZE	TORQUE	UNIT
Back-chamber Bolt	M20	50	NM
Diaphragm Rod With Carriage	M24	BUTT	—
Neoprene Diaphragm Assembly	M12	40	NM
Santoprene Diaphragm Assembly	M12	40	NM
Santoprene+PTFE Diaphragm Assembly	M12	40	NM
Diaphragm Assly. With Diaphragm Rod	M20	BUTT	—
Wet-chamber Outer Bolts	M10	40	NM
Manifold & Elbow Outer Bolts	M10	40	NM

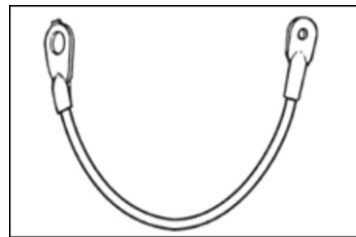
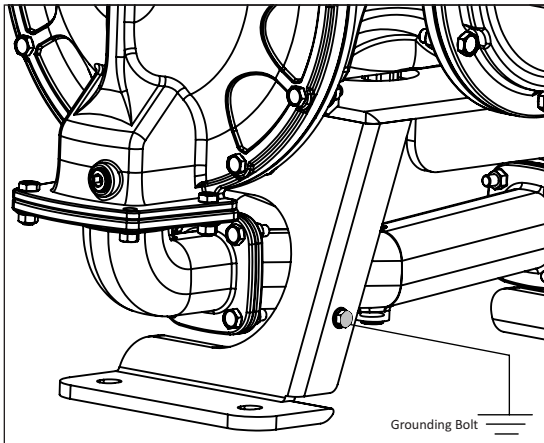
COGNITO EODD-4"

RESPECTIVE PART BOLTS	SIZE	TORQUE	UNIT
Back-chamber Bolt	M20	50	NM
Diaphragm Rod With Carriage	M30	BUTT	—
Neoprene Diaphragm Assembly	M12	40	NM
Santoprene Diaphragm Assembly	M12	50	NM
Santoprene+PTFE Diaphragm Assembly	M12	50	NM
Diaphragm Assly. With Diaphragm Rod	M24	BUTT	—
Wet-chamber Outer Bolts	M12	50	NM
Manifold & Elbow Outer Bolts	M12	50	NM

10.6 Grounding & Pump Earthing

10.6.1 Pump Earthing

1. All pumps have a ground screw installed in pump support bracket.
2. Protective paint is applied to prevent rust
3. Size of grounding screw is M8
4. Connect one end of the grounding wire to ground screw and other end of the grounding wire to suitable earth ground.
5. Keep grounding wire connection distance as short as possible
6. The cross section of grounding wire must be at least 4 mm²
7. Make sure earthing cable connection should be properly tightened with cable lug
8. Check the local electrical code for detailed grounding instruction & the type of equipment required.



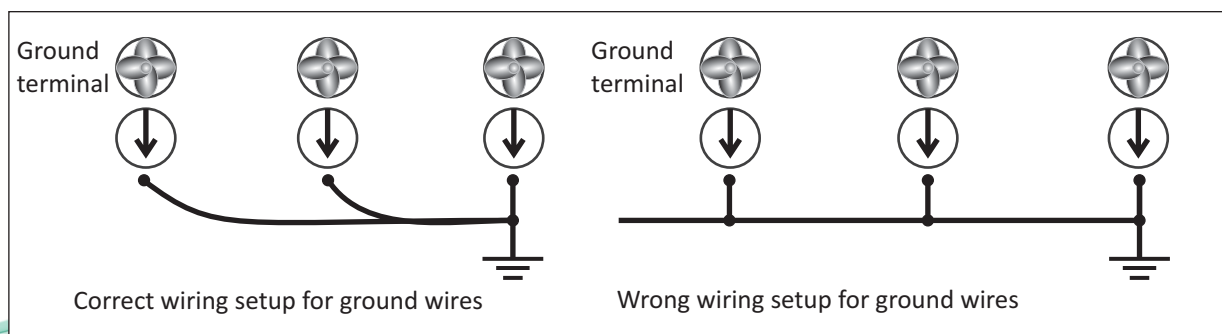
10.6.2. Motor Grounding

⚠ WARNING

1. It is compulsory to earth the motor. Earthing must be performed in accordance with current regulations (protection of workers).
2. Motors have a ground screw inside the terminal box. Use it to ground the motor
3. The cross section of grounding wire must be at least 2.5 mm²

10.6.3. VFD Grounding

1. Ground the variable frequency drive through a proper connection to a power source.
2. The diameter of the grounding cables must comply with the local safety regulations
3. Use a dedicated ground wire for input power, motor power, and control wiring.
4. Connect shielded cable to the motor drive's ground to meet safety regulations.
5. Minimum cable cross-section for the ground wires: 10 mm² (7 AWG).
6. Follow the motor manufacturer wiring requirement
7. When installing multiple drives, connect each drive to ground. Below images show correct way & wrong way of connections



11.0 TROUBLESHOOTING

11.1 Pump Troubleshooting Guide

Trouble	Possible Cause	Remedy
Pump not starting	No power	Check & Correct Input power in all phases
	Disconnected wires	Check the wiring as per wiring schematic
	Diaphragm rupture	Check for error light of diaphragm failure, replace diaphragm
	Motor failure	Check the display for error code
Low flow	Incorrect rpm	Check and correct the rpm
	Incorrect opening of suction & discharge valve	Check & open valve as per our recommended opening
	Pump jammed with media	Clean & flush all pumping media path
	Stuck ball valves	Clean & flush valve
	Improper input power	Check for input power as per specs (Hz & voltage)
	Abnormal slurry or very high viscosity	Check viscosity
High flow	Incorrect rpm	Check and correct the rpm
	Improper input power	Check for input power as per specs (Hz & voltage)
	Low viscosity of pumping media	Check viscosity
No flow	No power	Check power supply in all phase & correct it
	Valve closed	Check the valves
	No pumping media in sump	Check & fill sump
	Stuck ball valves	Clean & flush valve
	Diaphragm rupture	Check for error light of diaphragm failure, replace diaphragm
	Broken spider coupling	Check and replace spider coupling
	Motor failure	Check the display for error code
	Pump jammed with media	Clean & flush all pumping media path
Tripping	Incorrect line voltage	Check and correct line voltage
	Diaphragm rupture	Check for error light of diaphragm failure, replace diaphragm
	Overheating of motor	Check rated duty of motor cycle
		Check cooling fan damage
		Check incorrect line voltage
		Check stuck gearbox
Noise	Inadequate Air pressure	Check for dampener setting
	Loose bolts	Check for loose bolt and tighten them
	Coupling wear	Check for spider wear
	Incorrect line voltage	Check for line voltage
Panel not starting	No power	Check power supply in all phase & correct it
	Disconnected wires	Check the wiring as per wiring schematic
VFD not starting	Diaphragm rupture	Check for error light of diaphragm failure, replace diaphragm
	Motor failure	Check the display for error code

11.2 VFD Troubleshooting Guide

Below are some of the common troubleshooting codes for VFD's.
For detailed troubleshooting please contact IDEX.

Display code on	Warning name	Cause	Corrective action
PHL	Input phase loss warning	Phase loss of the input power	Verify the wiring of the main circuit.
		The power voltage has changed	If the power of main circuit works well, check if the main circuit is not broken. Cycle the power after verifying the power is normal. If PHL still occurs, return to the factory for repair.
		Loose wiring terminal of input power	Tighten the terminal screws.
		Check if the input cable of three-phase power is broken	Make sure the wiring is correct. Replace the broken part of the cable
		Unbalanced three-phase of the input power	Check the status of three-phase power.
OVS	Over voltage at stop	Power voltage is too high	Check if the input voltage is within the rated AC motor drive input voltage range, and check for possible voltage spikes
		Incorrect wiring of brake resistor or brake unit	Check the wiring of the brake resistor or braking unit.
		Malfunction caused by interference	Verify the wiring of the control circuit and the wiring/grounding of the main circuit to prevent interference
		Motor ground fault	The ground short circuit current charges the capacitor in the main circuit through the power. Check if there is ground fault on the motor cable, wiring box and its internal terminals. Troubleshoot the ground fault.
UG	Under current	Broken motor cable	Exclude the connection issue of the motor and its load.
		Low load	Check the loading status. Make sure the loading matches the motor capacity
		Improper setting for the low current protection	Set the proper current setting
ot1 or ot2	Over torque-1 & 2 warning	Incorrect parameter setting	Parameter setting done properly
		The load is too large	Decrease the loading. Replace with motor with larger capacity.
		Accel./ Decel. time and working cycle is too short	Increase/decrease acceleration & deceleration based on the application requirement.
		The motor capacity is too small	Replace with a motor with larger capacity.
		Overload during low-speed operation	Decrease the loading during low-speed operation. Increase the motor capacity.
		The torque compensation is too large	Adjust the torque compensation value until the output current decreases & the motor does not stall.

VFD Troubleshooting Guide (Cont.)

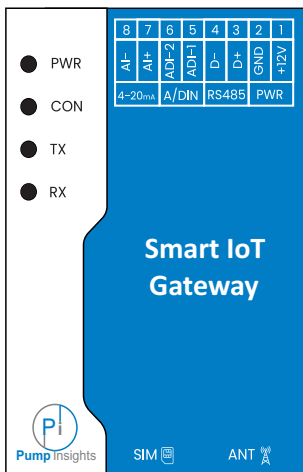
Display code on	Warning name	Cause	Corrective action
PLDA	Data error during PLC operation	During PLC operation, the external Modbus has written/read incorrect data to internal PLC program	Check if the upper unit transmit the correct command
OCS	Over-current at stop	Malfunction caused by interference	Verify the wiring of the control circuit and the wiring/grounding of the main circuit to prevent interference
		Hardware failure	Check if other error codes such as cd1–cd3 occur after cycling the power. If yes, return to the factory for repair
OVA	Over-voltage during acceleration	Acceleration is too slow (e.g. when lifting load decreases acceleration time)	Decrease the acceleration time Use a braking unit or DC bus Replace the drive with a larger capacity model.
		The setting for stall prevention level is smaller than no-load current	The setting for the stall prevention level should be larger than no-load current
		Power voltage is too high	Check if the input voltage is within the rated AC motor drive input voltage range, and check for possible voltage spikes.
		ON/OFF switch action of phase-in capacitor in the same power system	If the phase-in capacitor or active power supply unit acts in the same power system, the input voltage may surge abnormally in a short time. In this case, install an AC reactor.
		Regenerative voltage of motor inertia	Use over-voltage stall prevention function Use auto-acceleration and auto-deceleration setting, Use a braking unit or DC bus
		Acceleration time is too short	Check if the over-voltage warning occurs after acceleration stops. When the warning occurs, do the following: 1. Increase the acceleration time 2. Set over-voltage stall prevention 3. Increase the setting value for S-curve acceleration arrival time 2
		Motor ground fault	The ground short circuit current charges the capacitor in the main circuit through the power. Check if there is ground fault on the motor cable, wiring box and its internal terminals. Troubleshoot the ground fault.
		Incorrect wiring of brake resistor or brake unit	Check the wiring of the brake resistor and braking unit.
		Malfunction caused by interference	Verify the wiring of the control circuit and the wiring/grounding of the main circuit to prevent interference.

Display code on	Warning name	Cause	Corrective action
OVD	Over-voltage during deceleration	Deceleration time is too short, causing too large regenerative energy of the load	1. Increase the setting value (deceleration time)
			2. Connect the brake resistor, braking unit or DC bus on the drive.
			3. Reduce the brake frequency.
			4. Replace the drive with a larger capacity model.
			5. Use S-curve acceleration/ deceleration.
			6. Use over-voltage stall prevention.
			7. Use auto-acceleration and auto-deceleration.
			8. Adjust the braking level.
		The setting for stall prevention level is smaller than no-load current	The setting for the stall prevention level should be larger than no-load current
		Power voltage is too high	Check if the input voltage is within the rated AC motor drive input voltage range, and check for possible voltage spikes
		ON/OFF switch action of phase-in capacitor in the same power system	If the phase-in capacitor or active power supply unit acts in the same power system, the input voltage may surge abnormally in a short time. In this case, install an AC reactor
		Motor ground fault	The ground short circuit current charges the capacitor in the main circuit through the power. Check if there is ground fault on the motor cable, wiring box and its internal terminals. Troubleshoot the ground fault.
		Incorrect wiring of brake resistor or brake unit	Check the wiring of the brake resistor or braking unit.
		Malfunction caused by interference	Verify the wiring of the control circuit and the wiring/grounding of the main circuit to prevent interference.
OL	Overload	The load is too large	Reduce the load
		Accel./Decel. time or the working cycle are too short	Increase the setting value
		The capacity of the drive is too small	Replace the drive with a larger capacity model.
		Overload during low-speed operation	Reduce the load during low-speed operation. Increase the drive capacity. Decrease the carrier frequency
		Torque compensation is too large	Adjust the torque compensation until the output current reduces and the motor does not stall.
		Check if the setting for stall prevention is correct.	Set the stall prevention to the proper value.
		Output phase loss	Check the status of three-phase motor. Check if the cable is broken or the screws are loose
		Improper parameter settings for the speed tracking function (including restart after momentary power loss and restart after fault)	Correct the parameter settings for speed tracking. 1. Start the speed tracking function. 2. Adjust the maximum current for speed tracking.

11.3 Control Panel Troubleshooting Guide

Trouble	Possible Cause	Remedy
Control panel not power ON	Check incoming supply	Check the incoming source using multimeter and its voltage as per ratings
	MCB inside control panel in off condition or faulty	Incoming MCB make ON or if tripped repeatedly then replaced the MCB
	Incorrect wiring	Check wiring as per drawing
	Disconnected wires	Ensure no one cable is in disconnected condition from panel as well as incoming source.
	TB faulty	Replaced the TB
	Incoming 3 phase connection	Check 3 phase supply connection inside control panel.
VFD not working	Check error code on display	Based on error code take corrective action
	Drive faulty	Replace the drive
	Drive ratings not proper	Check drive ratings wrt. Incoming power supply
Data not updated on IOT platform	Improper input power	Check for input power as per specs (Hz & voltage)
	Gateway in off condition	Check gateway power supply and its power LED indication
	Gateway CON LED indication not proper	Gateway CON LED is on and flashing twice at every 3 sec frequency
	SIM card not available on SIM slot	SIM card should be available on SIM slot with valid subscription
	Gateway configuration not proper	Gateway configuration wrt to VFD drive address
	Program not available on VFD	Contact IDEX for detail troubleshooting
Faulty leak indication	Communication cable termination not proper	Cable should terminate in D+ and D- as mention termination diagram
	Termination not proper	Check terminals are properly attached with control panel and inside connector cable should be intact properly, ensure corrosion not available on terminal
	Leak sensor faulty	Replace the sensor
	Sensor malfunction	Replace the sensor
Tripping	Water ingress inside terminal joint	Verify the channel using simulator.
	Drive internal component failure	Contact IDEX for detail troubleshooting
	Tripping on safety interlock	Check on VFD local display error code and act accordingly.
	Leak sensor malfunction	Replace the sensor
No speed control	High control panel temperature	Check VFD cooling fan damage
	Faulty knob	Check knob movement not free
		Wiring cable detached from speed control knob.
		Check for burning marks on knob
	Channel faulty	Verify the channel using simulator.

11.4 Smart IoT Gateway Troubleshooting Guide



Smart IoT Gateway

Pin Header: 8 7 6 5 4 3 2 1
 AI+ AI- ADI-2 ADI-1 D+ D- GND +12V
 4-20mA A/DIN RS485 PWR

Status LEDs: PWR, CON, TX, RX

Logos: Pump insights, SIM, ANT

LED	NAME	DESCRIPTION	
GREEN ●	POWER	Light when Power on the device	
		LED Status	Connection State
		Flashing (ON for 100ms & OFF for 100ms)	SIM Card not found
		Flashing (ON for 500ms & OFF for 500ms)	Searching for GSM Network
RED ●	GSM	Flashing (ON for 0.1s & OFF for 2.9s) Once at every 3 sec	GSM Network Registered
		Flashing twice at every 3 sec	GPRS IP Connected
		Flashing 5 times	GPRS IP Sending data
		LED OFF	GSM Fault
GREEN ●	COM TX	Blink on data transmission in RS485 port	
YELLOW ●	COM RX	Blink on data reception in RS485 port	

12.0 PREVENTIVE MAINTENANCE GUIDELINES

Sr.no	Maintenance Item	Frequency	Indication
1	Diaphragms	As needed	Pump will be shut down by the VFD due to fluid detection by leak detection sensors installed in each of the Diaphragm.
2	Balls	As needed	behavior, excessive pulsation, reduction in flow; visual inspection
3	Seats	As needed	Visual inspection
4	Oil change - Pump mechanism	3 months	Scheduled / visual inspection monitor oil level through sight glass fitted in pump
5	Oil change - Gearbox	As per the manufacturer's recommendation	Scheduled / visual inspection, as per the manufacturer's recommendation
6	Rod seals & Wiper seals	Once in 2 years / As needed	Scheduled / leakage / any failure
7	Rotary shaft seals	Once in 3 years / As needed	Scheduled / leakage from coupling housing
8	Bolt torque checks of outer chambers	3 months / As needed	Scheduled / visual inspection
9	Control panel Air filter dusting	3 month / As needed	Scheduled / visual inspection

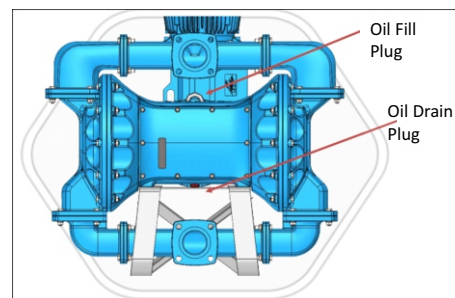
COGNITO EODD Pumps are factory filled with long-life Synthetic lubricant, ISO VG 320 Synthetic. There is need for periodically lubricant change according to loading condition

COGNITO PUMP & GEARBOX LUBRICATION CHANGE FREQUENCY																		
Loading Details		*Running Hours	Discoloration Code															
High Load & High Speed Pressure : =>4.5bar, RPM => 80RPM	1000		0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0
Medium Load & Medium Speed Pressure: 3-4bar, RPM: 60 - 80 RPM	2500																	
Low Load & Low to Med Speed Pressure : <3bar, RPM : 50 - 80	3500																	

* Lubrication change frequency depending on loading condition, which ever comes earlier either number of hours or lubricant is turning blackish colour spectrum after 6.0 according to ASTM D1500 COLOUR SCALE

Oil Replacement Procedure :

1. Unscrew the top Oil fill plug to avoid vacuuming during drain
2. Now open the cover plate and clean it thoroughly
3. Assemble the cover plate applying the grease on the gasket area
4. Close the drain plug and refill the oil with recommended Oil grade & quantity
5. Do not mix different grades of oil
6. Do not exceed the recommended maximum level



Recommended Oil Level & Oil Grade:

PUMP		
COGNITO Pump Size (Metallic & Non Metallic)	Oil Qty. (Ltr.)	Oil Grade
4" Metallic & 3" Non Metallic	2.6	ISO-VG 320 Synthetic
3" Metallic & 2" Non Metallic	1.8	
2" Metallic & 1.5" Non Metallic	1.3	
1"/1.5" Metallic & 1" Non Metallic	0.6	

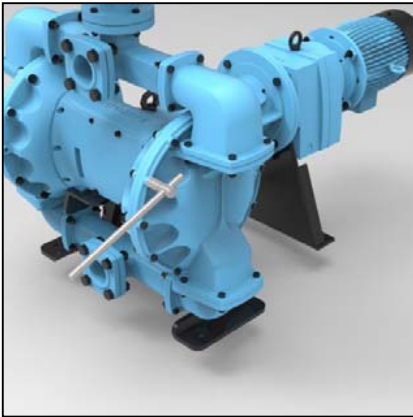
Dusting of The Pump Under Explosive Dust Environment:

1. Dust Layers should not form on the outer surfaces or inner parts of the pump
2. Dusting or Cleaning of the pump's outer surfaces must be done on regular basis or as per local Plant guidelines.
3. Dust should not accumulate or trap between moving parts insider the pump, as O-rings & seal rings are protecting against the entry. Clean the dust in case if you find traces inside the *Dry Parts
4. Dust Layers should not form on the outer surfaces parts of the coupling, end user has to clean in regulator intervals
5. Dust Layers should not form on the outer surfaces parts of the Electric Motor & Gearbox user has to clean in regulator intervals

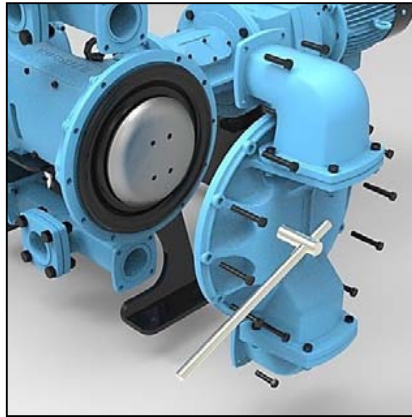
*Dry Parts : Dry parts are those parts which are not coming in process fluid contact.....such as :
Coupling Housing, Back Chamber, Pump Support Structure.

13.0 MAINTENANCE GUIDELINES

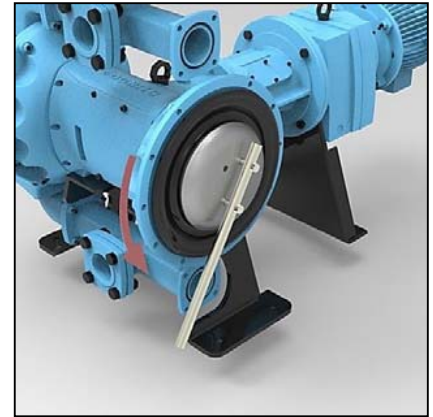
13.1 Diaphragm Replacement



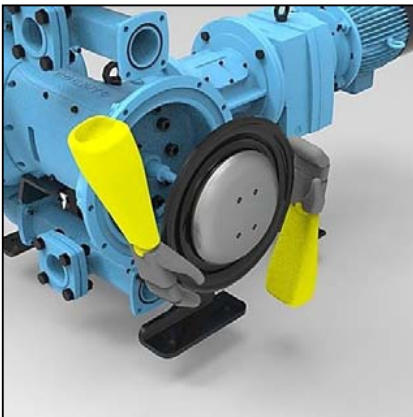
Step 1 - Isolate the pump from pumping fluid and electrical connection, also have necessary tools and spares in hand.



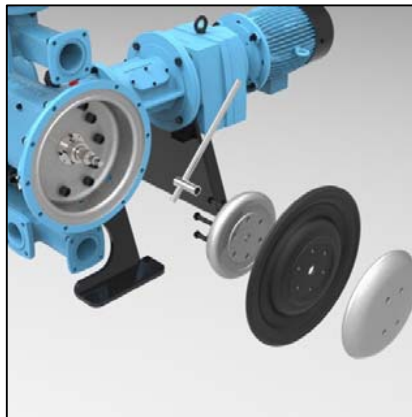
Step 2 - Unfasten the bolts and pull the wet chamber, this might also be the right time to check O-Rings on suction and discharge flange



Step 3 - Clean the holes and use the supplied tool "F-KEY" and turn the diaphragm anticlockwise to unfasten it.



Step 4 - Carefully pull the diaphragm assembly out, and keep the rear housing and shaft.



Step 5 - The diaphragm is held between two bolted plates, these bolts are accessible from the rear plate. Clean the chamber completely.



Step 6 - Replace the diaphragm and repeat steps in reserve order to assemble the pump, use star pattern to tighten the diaphragm assembly and wet chamber

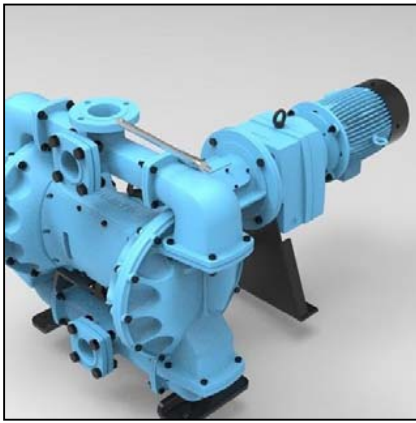
Notes:

1. If the diaphragm is not in the discharge position, take it in discharge position by rotating the motor fan manually.
2. Different Torque values are required for different Diaphragm type. Refer below table for Torque details

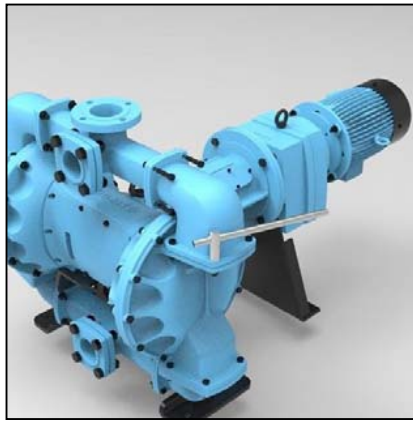
TORQUE VALUES FOR DIFFERENT DIAPHRAGM

PUMP SIZE	NEOPRENE & NITRILE	SANTOPRENE	SANTOPRENE + PTFE
1"/1.5"	25NM	25NM	30NM
2"	-	30NM	30NM
3"	40NM	40NM	40NM
4"	40NM	50NM	50NM

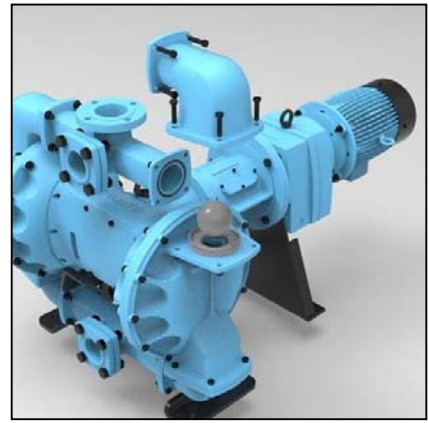
13.2 Ball & Seat Cage Replacement



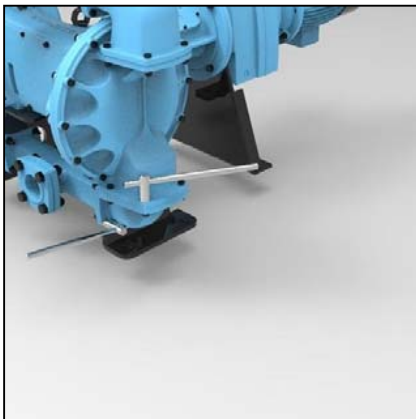
Step 1 - Unfasten the upper bolts of the discharge elbow with necessary tools.



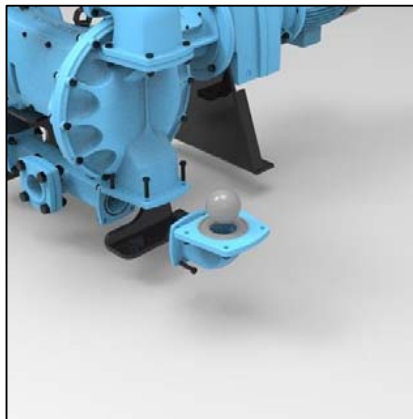
Step 2 - Unfasten the lower bolts of the discharge elbow with the necessary tools.



Step 3 - Pull out the discharge elbow, check the valve and seat then replace it.



Step 4 - Unfasten the upper and lower bolts of the suction elbow with the necessary tools.



Step 5 - Pull out the suction elbow, check the valve and seat then replace it.

13.3 Seal Replacement In Centre Mechanism

1. To replace the seals, disassemble the wet-chamber, elbow, diaphragm assembly in sequence.
2. Now open seal housing, in which first slot is for Wiper seal & back slot is for rod seal.
3. After replacing it, place this seal sleeve in the back chamber of the pump.
4. Remove the worn out seals and replace with the new one using appropriate tool.
5. Please check the direction of the seals, V section opening should be on the oil side.

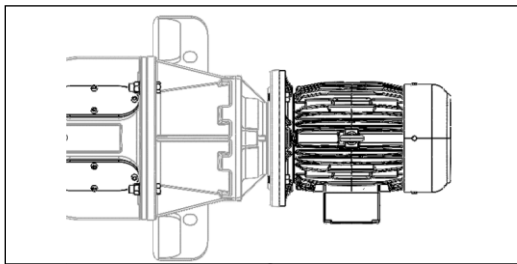
13.4. Seal Replacement for Dampener

1. Remove the dust cap and disassemble stopping pin by unscrewing the top bolt.
2. Take out seal housing by unscrewing 6 bolts.
3. Remove the damaged seals using appropriate tool.
4. Place new seals in the proper sequence.
5. There are two parts of seal – O-ring and SUPPORT RING. First Need to position O-ring in grooves and then add SUPPORT ring using appropriate tool.

13.5 Diaphragm Replacement for Dampener

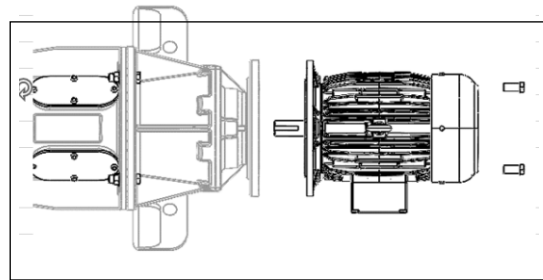
1. Remove dampener from pump. Disassemble dampener by opening bolts of two halves.
2. Remove the dust cap and disassemble the stopping pin by unscrewing the top bolt.
3. Takeout diaphragm assembly. Unscrew the outer plate using grip and holding space provided on shaft.
4. Replace damaged diaphragms. Note that air side should face up.
5. Fix the outer plate with appropriate tool and using specified torque according to size.
6. Reassemble diaphragm rod assembly through the sleeve by applying grease to avoid frictional damage of seals & screw the stopper pin.
7. Assemble the two dampener's halves sandwiching the diaphragm using appropriate torque.

13.6 Motor Assembly & Disassembly



STEP 1:

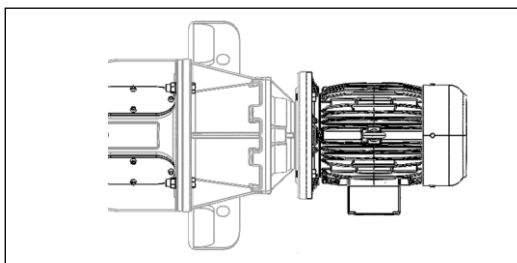
- Remove all the cable connection from motor



STEP 2:

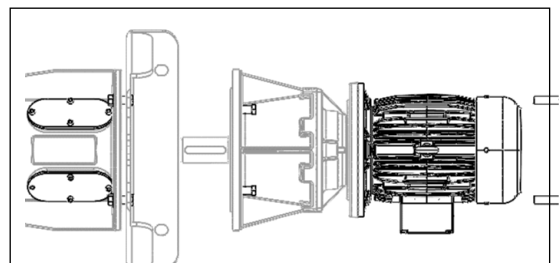
- Remove 4-bolts from motor flange
- Pull the motor out & replace with the new one by using proper lifting tools
- Push the motor in and tighten the bolts to re-assemble the motor

13.7 Gearbox Assembly & Disassembly



STEP 1:

- Remove all the cable connection from gearbox



STEP 2:

- Remove 4-bolts from gearbox flange
- Pull the gearbox out & replace with new one by using proper lifting tools
- Push the motor in and tighten the bolts to re-assemble the motor

13.8 Maintenance of IoT Gateway

Control Panel is used for controlling the pump operation. It integrates with the pump for controlling the motor speed through variable frequency drive as per application need of an user. VFD and IoT Gateway are critical components of control panel and supplied preconfigured from the factory. Ensure panel is power off condition before any pump maintenance.

Remove any dust accumulated inside the Control Panel for proper operation of electronics in it. Ensure panel cooling fan is working. In case of pump operational issues, check wiring as per drawing, connection tightness, desired voltage availability at the respective terminals. For tripping error codes displayed on PLC display, refer troubleshooting section in IOM manual.

In case of pump data not accessible on Pump Insights application, check –

1. Gateway power LED is ON (communication video)
2. Gateway CON LED is showing healthy communication (communication healthy and faulty video)
3. SIM Healthiness (Describe SIM replacement video)
4. Communication wiring between VFD and IoT Gateway (video reference from point 1 video)
5. Antenna is connected to IoT Gateway
6. PLC mode on VFD local display is PLC1 (VFD display image)
7. Parameter 4-50 on VFD display shows 8XXX in case of pump stop condition (VFD display image)
8. Pump Insights subscription due for renewal

13.9 Disposal after Expiration of the Expected Lifetime

The metallic components like aluminum, stainless steel and carbon steel can be recycled. Plastic parts are not recyclable and must be disposed of as residual waste. The pump must be disposed of properly, according to local regulations. It should be noted that potentially dangerous fluid residues may remain in the pump and can create a hazard to the operator or the environment, therefore the pump must be thoroughly cleaned before disposal.

13.10 Residual Risks

Even with proper application and observance of all points listed in this operating manual, there is still an estimable and unexpected residual risk when using the pumps. It may leak, fail due to wear, application-related causes or system-related circumstances.

13.11 Actions in Emergency

In case of a leakage of an unknown fluid, respiratory protection should be worn and contact with the fluid should be avoided. During firefighting, no special hazards are to be expected from the pump itself. In addition, the currently handled fluid and the corresponding safety data sheet must be considered. When fluid leakage occurs, the air supply must be closed, and the pressure released. During the spillage of an aggressive liquid, local and national safety rules must be followed.

13.12 Improving Pump's Longevity

1. Continuous operation at the top-rated speed of the motor or more will cause premature wear. We recommend running the pump at 20% less than the rated frequency (50 Hz or 60 Hz).
2. Post Shutdown, the particulate matter in pumping media may get deposited inside the pump chamber. Hence the pump should be emptied off any remaining media. Failure to do so, may rupture the diaphragm and other wearable part after consecutive start-up.
3. While operating the pump, do not exceed nominal working temperatures stated by the gear-motor manufacturer.
4. Maintain proper lubrication at all times.



NOTICE
Follow the instruction, prior starting the equipment

- Check the oil level
- Clean the vent filter
- Open Inlet & outlet valves connected
- Follow the safety protocol's



NOTICE
CLEAN THE MACHINE !

- Machine may JAM or contaminate the process upon subsequent use.



WARNING
This Machine Starts
AUTOMATICALLY

14.0 CERTIFICATION

14.1 Certification Standards & Markings

CE Machinery Directives	2006/42/EC on Machinery, Annex VII	EN 60204-1:2018 EN ISO 12100:2010 EN 809: 1998+A1:2009/AC :2010	
ATEX Directive	2014/34/EU	IEC TS 60079-46:2017 EN ISO 80079-36:2016 EN ISO 80079-37:2016 EN IEC 60079-0:2018 EN 60079-11:2012	

Hazardous Location Marking (Bare Pump)

The non-electrical Ex h protection type used for the pump system is constructional safety type 'c'.

ATEX Marking	 II 2 G D	Ex h ia IIC T6-T3 Gb (Pump with sensor) Ex h IIC T6-T3 Gb (Pump without sensor) Ex h ia IIIC T85°C-T150°C Db (Pump with sensor) Ex h IIIC T85°C-T150°C Db (Pump without sensor)	DNV 23 ATEX 33382X
IECEx Marking		Ex h ia IIC T6-T3 Gb (Pump with sensor) Ex h IIC T6-T3 Gb (Pump without sensor) Ex h ia IIIC T85°C-T150°C Db (Pump with sensor) Ex h IIIC T85°C-T150°C Db (Pump without sensor)	IECEx DNV 23.0077X
UKCA Marking	 II 2 G D	Ex h ia IIC T6-T3 Gb (Pump with sensor) Ex h IIC T6-T3 Gb (Pump without sensor) Ex h ia IIIC T85°C-T150°C Db (Pump with sensor) Ex h IIIC T85°C-T150°C Db (Pump without sensor)	DNV 24 UKEX 33383X

Hazardous Location Marking (Pump Assembly)

ATEX Marking	 II 2 G D	IIB/IIC T4-T3 Gb IIIC T135°C -T150°C Db	DNV 24 ATEX 25511X
IECEx Marking		Ex 60079-46 IIB/IIC T4-T3 Gb Ex 60079-46 IIIC T135°C-T150°C Db	IECEx DNV 24.0107X
UKCA Marking	 II 2 G D	IIB/IIC T4-T3 Gb IIIC T135°C-T150°C Db	DNV 24 UKEX 25514X

14.2 Specific Condition of Use

14.2.1 Bare Pump Specific Condition

1. Prevent electrostatic charges in potentially explosive areas – do not polish/rub nonconductive surfaces with a dry cloth. Warning – Potential Electrostatic charging hazard- see instructions.
2. Avoid direct impact or friction in the equipment parts containing light metals to eliminate thermite sparks.
3. When EODD pump considered as bare pump it must be used with Ex Certified dampener to reduce the pulsation and vibration during the pump operation thus ensuring continuous and precise non pulsed flow rate.
4. When EODD pump considered as bare pump it must be connected with the Ex certified leakage detection sensor for any leakage detection during intended use of the pump.
5. Instruction manual must be followed during installing, operating, and maintaining the pump unit.
6. Equipment temperature class depends upon the various ambient temperature specified in this certificate.

14.2.2 Pump Assembly Specific Condition of Use (ATEX)

1. Certified Entry devices shall be used for Motors, Pumps.
2. EODD Bare Pump Dampener:
 - Prevent electrostatic charges in potentially explosive areas – do not polish/rub nonconductive surfaces with a dry cloth.
 - Avoid direct impact or friction in the equipment parts containing light metals to eliminate thermite sparks.
 - Recommended air inlet pressure of dampener shall be 1 bar higher from the discharge pressure.
 - Do not run the dampener without air supply.
3. Terminal Box and Control station: R. Stahl Schaltgeräte GmbH
 - The dimensions of the flameproof joints are in parts other than the relevant minimum or maximum values of EN 60079-1:2014.
4. Enclosure: Pepperl+Fuchs SE
 - The width of the flameproof joints is superior to those specified in tables of EN 60079-1 standard: contact the original manufacturer for any repairs of the flameproof joints
5. Motor: CGL
 - For replacement purposes, the end shield and terminal box fasteners are to be of minimum grade 8.8 steel for socket head screws, grade 4.6 steel for hexagon head screws and grade 4 for hexagon nuts.
6. Motor: WEG
 - The flame path gaps are less than those permitted by IEC60079-1 for gas group IIC and shall not be enlarged in service.
 - The maximum surface temperature was determined without a dust layer. The end user shall prevent a dust layer forming on the motors.
 - After de-energizing a delay 60 minutes is required before opening.
 - When fitted with the separated terminal box a suitably Ex equipment certified cable entry device may be provided by the manufacturer and installed with cable in compliance with IEC 60079-14.
7. Metallic coupling: ROTEX COUPLING
 - When using the couplings in potentially explosive dust atmospheres, the users must make sure that no dust in dangerous quantities accumulates between cover and couplings. The coupling must not run in a dust accumulation refer clause 12.0 “Dusting of the pump under Explosive Dust Environment”

14.2.3 Pump Assembly Specific Condition of Use (IECEX)

1. Suitably IECEx Ex d certified and IP66 rated entry devices shall be used for Motor and Terminal Box.
2. EODD Bare Pump, Dampener:
 - Prevent electrostatic charges in potentially explosive areas – do not polish/rub nonconductive surfaces with a dry cloth.
 - Avoid direct impact or friction in the equipment parts containing light metals to eliminate thermite sparks.
 - Recommended air inlet pressure of dampener shall be 1bar higher from the discharge pressure.
 - Do not run the dampener without air supply.
3. Enclosure: R. Stahl Schaltgeräte GmbH
 - The dimensions of the flameproof joints are in parts other than the relevant minimum or maximum. Values of IEC 60079-1:2014.
4. Enclosure: Pepperl+Fuchs SE
 - The width of the flameproof joints is superior to those specified in tables of IEC 60079-1 standard contact the original manufacturer for any repairs of the flameproof joints.
5. Motor: CGL
 - For replacement purposes, the end shield and terminal box fasteners are to be of minimum grade 8.8 steel for socket head screws, grade 4.6 steel for hexagon head screws and grade 4 for hexagon nuts.
6. Motor: ABB
 - The manufacturer has maintained more stringent gap and larger flame path length than required by the standard. User must refer to manufacturer before carrying out any repairs or refurbishment to the motor.
 - When motors are supplied by a converter (VFD), the motors will be fitted with thermal protection (PTC) thermistors, into the stator winding and shall be connected into a control circuit such that the motor is de-energized from the supply in the event of the winding reaching a temperature of 150°C.
 - The fastening screws shall be of high tensile carbon steel socket head cap screws of property class 8.8 with yield strength of 640 N/mm² or A4-80 grade stainless steel screws with yield strength of 600 N/mm².
7. Motor: WEG
 - The flame path gaps are less than those permitted by IEC60079-1 for gas group IIC and shall not be enlarged in service.
 - The maximum surface temperature was determined without a dust layer. The end user shall prevent a dust layer forming on the motors. refer clause 12.0 “Dusting of the pump under Explosive Dust Environment”
 - After de-energizing a delay 60 minutes is required before opening.
 - When fitted with the separated terminal box a suitably IECEx Ex equipment certified

14.2.4 Pump Assembly Specific Condition of Use (UKCa)

1. Certified Entry devices shall be used for Motors, Pumps.
2. EODD Bare Pump, Dampener:
 - Prevent electrostatic charges in potentially explosive areas – do not polish/rub nonconductive surfaces with a dry cloth.
 - Avoid direct impact or friction in the equipment parts containing light metals to eliminate thermite sparks.
 - Recommended air inlet pressure of dampener shall be 1bar higher from the discharge pressure.
 - Do not run the dampener without air supply.
3. Enclosure: Pepperl+Fuchs SE
 - The width of the flameproof joints is superior to those specified in tables of IEC 60079-1 standard: contact the original manufacturer for any repairs of the flameproof joints.

15.0 WARRANTY DECLARATION

Cognito warrants that its products will be free from defects in material and workmanship for a period of 12 months following date of purchase from Cognito. Cognito products which fail within the warranty period due to defects in material or workmanship will be repaired or replaced at Cognito's option, when returned freight prepaid to: IDEX India Pvt. Ltd. Survey No. 256, Manjusar, GIDC, Near Bombardier Circle, Vadodara - 391770, Gujarat, India.

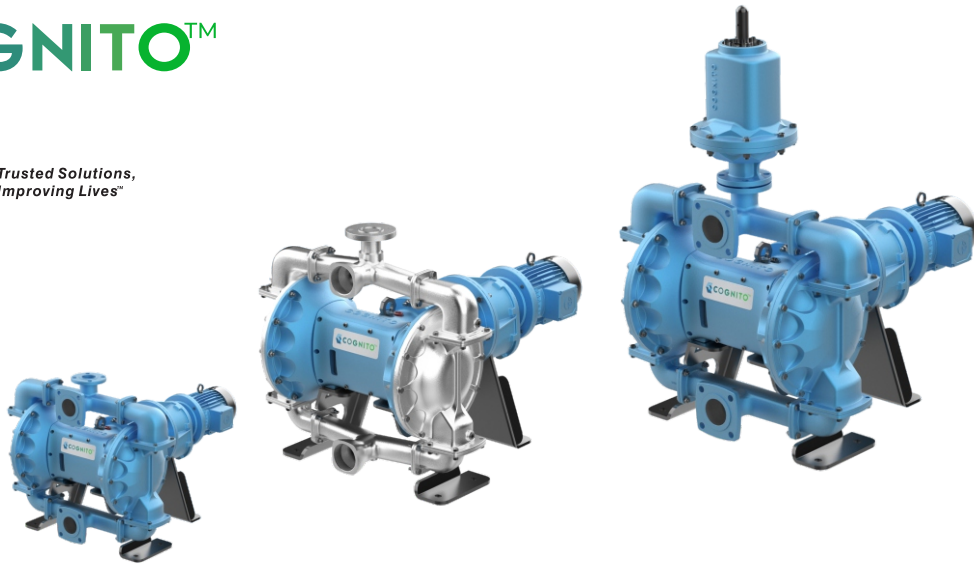
Parts subject to wear or misuse, such as Diaphragm, check balls, valve seats, stopper cage, oil seals and other parts showing signs of misuse are not covered by this limited warranty. Also, equipment, parts and accessories not manufactured by Cognito but furnished with Cognito products are not covered by this limited warranty and purchaser must look to the original manufacturer's warranty, if any. This limited warranty is void if the Cognito product has been altered or repaired without the consent of Cognito.

All implied warranties, including any implied warranty of merchantability or fitness for a particular purpose, are expressly negated to the extent permitted by law and shall in no event extend beyond the expressed warranty period. Cognito disclaims any liability for consequential damages due to breach of any written or implied warranty on Cognito products.

Information reacquired while you contact Factory

Before you contact the factory, note the model number and serial number of your pump. The serial number directs us to a file containing all information on material specification and test data applying to your specific pump. When ordering parts, Cognito Service Manual or Instruction Book should be consulted for the proper Part Numbers.

ALWAYS INCLUDE THE MODEL NUMBER AND SERIAL NUMBER WHEN ORDERING SPARE PARTS



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