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Technical Datasheet DEPA<sup>®</sup> Closed Surface Diaphragms Series nopped E4<sup>®</sup>

# DEPA®

# DEPA® Closed Surface Diaphragms Series nopped E4®

Building upon the success of the DEPA nopped E4® PTFE Compound Diaphragm, the new **DEPA® CLOSED SURFACE DIAPHRAGM SERIES** is designed and manufactured in-house and offers the following key features and benefits:

## **0** Extended lifetime

The absence of the outer piston reduces wear around the flexing area, increasing diaphragm life.

## **2 E**LIMINATES LEAKS

Integrated insert eliminates a potential leak path within the pump. The pre-defined fixing feature of the outer rim design improves safety for both the customer and environment.

## **B**ASE OF MAINTENANCE

Pump maintenance is simplified and requires only hand tightening of the diaphragm. Modular design ensures all diaphragms are interchangeable with all DEPA® pumps.

# **4 E**ASY TO CLEAN

Clean surface reduces the build-up of impurities, improves flow and increases energy savings.



# **Product Overview**

#### Sizes

The diaphragms (PTFE compound, FKM\*, EPDM, EPDM Grey, NBR, NRS) are available in the sizes 15, 25, 40, 50 and 80.

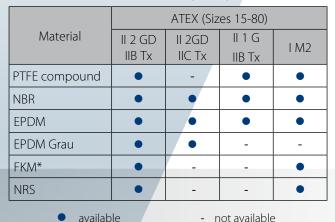
#### **Temperature Range**

| Material      | Temperature Range (°C) |  |  |  |
|---------------|------------------------|--|--|--|
| PTFE compound | -10 to +130            |  |  |  |
| NBR           | -15 to +90             |  |  |  |
| EPDM          | -25 to +105            |  |  |  |
| EPDM Grau     | -25 to +90             |  |  |  |
| FKM*          | -5 to +120             |  |  |  |
| NRS           | -15 to +70             |  |  |  |

\*a diaphragm based on Viton™ fluoroelastomer, Viton™ is a registered trademark of The Chemours Company

# Applied Guidelines in combination with the pumps

- Machinery Directive 2006/42/EC
- Eurasian Conformity
- For the EPDM Grey diaphragm & PTFE Compound diaphragm
  - FDA Conformity
  - 1935/2004/EC & 10/2011/EU
  - Bisphenol-A and Phthalates free
  - BfR Recommendation XXI (category 3)
- The diaphragms are ATEX compliant in accordance with directive 2014/34/EU in combination with the pump





#### **Diaphragm Pump Coding**

| Material      | Closed Surface Diaphragm |  |  |  |  |
|---------------|--------------------------|--|--|--|--|
| PTFE compound | Z                        |  |  |  |  |
| NBR           | 1                        |  |  |  |  |
| EPDM          | 2                        |  |  |  |  |
| EPDM Grau     | 3                        |  |  |  |  |
| FKM*          | 4                        |  |  |  |  |
| NRS           | 5                        |  |  |  |  |



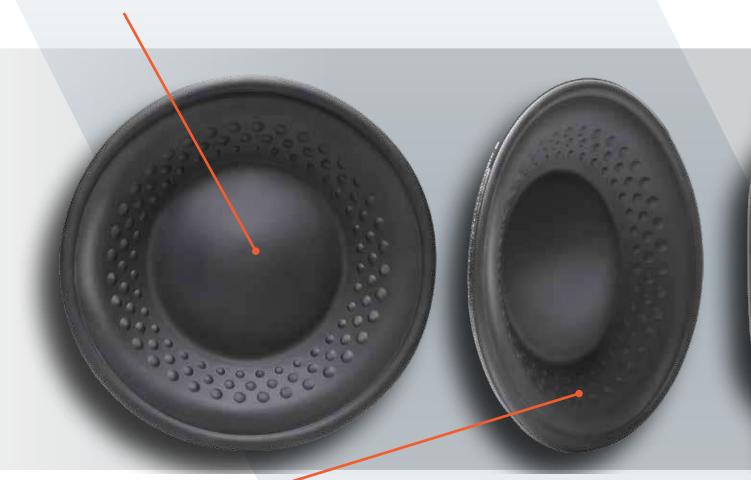
# DEPA

# **Design Features**

#### **Closed Surface**

The closed surface eliminates potential leak path. Due to single piece design surface of the diaphragms, particle entrapment cannot occur, improving significantly the cleanability of the diaphragm.

The absence of the outer piston avoids burr-formation on the wetted side of the diaphragm and subsequently improves lifetime.



#### **Innovative Nopped Design**

The innovative nopped design facilitates stability and increases durability due to lower mechanical stress.





## **Design Features**

#### **Triple Ring Design**

Triple coaxial reinforcement (sizes 25-80) over the entire circumference, strengthens the mechanical stability of the diaphragm.



#### **Integrated Insert**

The combination of elastomer with aluminium insert secures an easy fixation and improves stability of the diaphragm during installation and operation.

#### **Integrated Fixture**

The thread design ensures a consistent, aligned, and centralized assembly in the pump which facilitates an easy installation of the diaphragm without any special tools.

A special Closed Surface Diaphragm installation kit enables a quick assembly for every DEPA® pump model.





# **DEPA nopped E4® PTFE Compound Diaphragms**



medium side

## EPDM

back up

#### DEPA nopped E4® PTFE compound

diaphragms are constructed as a single unit from a combination of PTFE and EDPM, coming into contact with liquid and air respectively.

# The laminated design of the **DEPA nopped E4**<sup>®</sup> **PTFE compound**

diaphragms ensures the diaphragm surface is impermeable. The PTFE layer enables the use of the diaphragm in a wide range of chemical application. The EDPM back-up is electrically conductive, making it suitable for use in ATEXconforming pumps.



# Applications

#### Available Elastomers and chemical properties

|   | Material         | Chemical Properties  | Chemical Resistance <ul> <li>Excellent</li> <li>Good</li> <li>Appropriate</li> <li>Not suitable</li> </ul> |   | FDA | Approved for<br>ATEX-Pumps<br>Zone |   |
|---|------------------|--|--|---|-----|------------------------------------|---|
|   |                  |  | Acids,<br>caustic and<br>alkaline<br>Solutions   | Hydrocarbons<br>(petrol, fuel,<br>oil, fat) |     | 1                                  | 0 |
|   | PTFE<br>compound | highest chemical resistance, free<br>of reaction with chemicals, high<br>temperature range   |  |   | •   | •                                  | • |
|   | NBR              | good chemical resistance against<br>mineral oils, grease, fuels  |  |   | -   | •                                  | • |
| E | EPDM             | multi-purpose diaphragm with         high tensile strength and elasticity,         good chemical resistance, suitable         for alcohols |  |   | _   | •                                  | • |
|   | EPDM Grey        |  |  |   | •   | •                                  | - |
|   | FKM              | good chemical resistance against<br>chemicals, mineral oils, grease,<br>fuels in combination with high<br>temperature range                |  |   | -   | •                                  | - |
|   | NRS              | good wear characteristics against<br>abrasive products   |  | $\bigcirc$                                  | -   | •                                  | - |

• available - not available