

DEPA[®]

brands you trust.



Technical Datasheet
DEPA[®] Closed Surface Diaphragms
Series nopped E4[®]

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:

1 EXTENDED LIFETIME

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

2 ELIMINATES 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.

3 EASE 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 EASY 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

Material	ATEX (Sizes 15-80)			
	II 2 GD IIB Tx	II 2GD IIC Tx	II 1 G IIB Tx	I M2
PTFE compound	●	-	●	●
NBR	●	●	●	●
EPDM	●	●	●	●
EPDM Grau	●	●	-	-
FKM*	●	-	-	●
NRS	●	-	-	●

● available

- not available



Diaphragm Pump Coding

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



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.



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



PTFE
medium side

EPDM
back up

DEPA nopped E4® PTFE compound diaphragms are constructed as a single unit from a combination of PTFE and EPDM, coming into contact with liquid and air respectively.

The laminated design of the **DEPA nopped E4® 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 EPDM back-up is electrically conductive, making it suitable for use in ATEX-conforming pumps.

Available Elastomers and chemical properties

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

● available - not available