

Saunders Diaphragms

Diaphragm Design/Performance

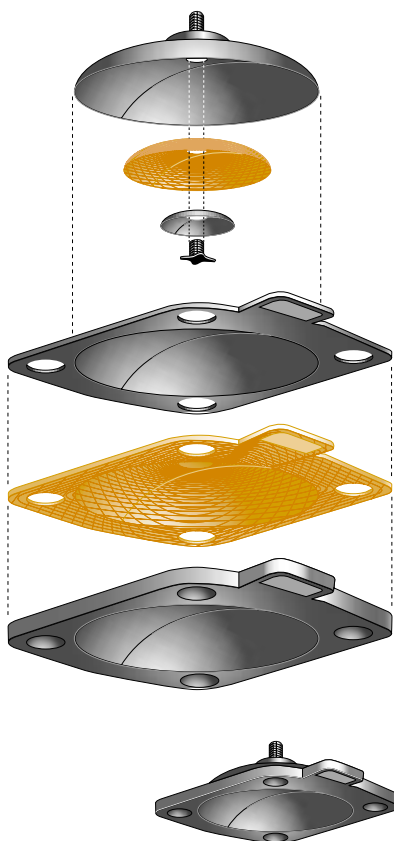
Diaphragm Construction



Rubber diaphragm screw fixing

Rubber Diaphragms

The polymer material is bonded with a high strength woven reinforcement to ensure maximum strength and durability.



PTFE diaphragm bayonet fixing

PTFE Diaphragms

PTFE diaphragms are two piece construction backed with a rubber diaphragm to increase their pressure rating and durability. PTFE faced diaphragms are fitted with a bayonet fitting to ensure reliable installation and maximum life rating.

Grade	Material	Colour	Size Range Lower–Upper	Continuous Temperature Range °C	Hardness IRHD	Tensile Strength Mpa	EV (DA) Approvals		
							FDA	3A Class IV	USP Class V & VI
300	Resin cured butyl rubber (isobutylene/isoprene)	Black	DN8–DN200	-30 to 130	62–68°	12.9	✓	✓	✓
425	Ethylene Propylene, co-polymer peroxide cured	Black	DN8–DN100	-40 to 140	61–67°	12	✓	✓	✓
325	Ethylene propylene (EPDM) diene-modified, peroxide cured	Black	DN8–DN200	-40 to 140	60–65°	12.5	✓	✓	✓
E5	Ethylene propylene (EPDM) diene-modified, peroxide cured, post cured	Black	DN8–DN100	-40 to 140	60–65°	12.5	✓	✓	✓
E3	Ethylene Propylene, co-polymer peroxide cured, post cured	Black	DN8–DN100	-40 to 140	61–67°	12	✓	✓	✓
E4	Ethylene propylene (EPDM) diene-modified, peroxide cured	White	DN8–DN100	-40 to 110	60–66°	11	✓	–	–
214/300	PTFE/Butyl backed	White facing, black backing	DN8–DN200	-20 to 150	–	32	✓	✓	✓
214/425	PTFE/EPM backed	White facing, black backing	DN8–DN200	-20 to 160	–	–	✓	✓	✓
214S/425	PTFE/EPM backed for steam	White facing, black backing	DN8–DN200	-20 to 160	–	–	✓	✓	✓
214/325	PTFE/EPDM backed	White facing, black backing	DN8–DN200	-20 to 160	–	32	✓	✓	✓
500	Silicone DBPH cured	White	DN8–DN200	-40 to 150	67–73°	7.1	✓	✓	–
214S/300	PTFE/Butyl backed for steam	White facing, black backing	DN8–DN200	-20 to 150	–	30	✓	✓	✓
214S/325	PTFE/EPDM backed for steam	White facing, black backing	DN8–DN200	-20 to 160	–	30	✓	✓	✓

Diaphragms

Diaphragm Design/Performance



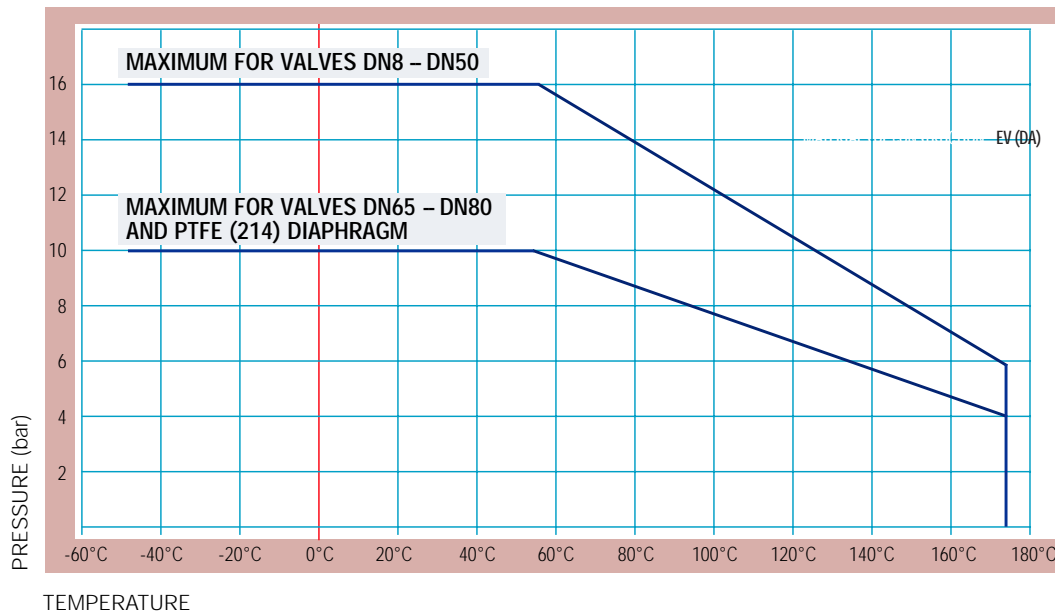
Temperature and pressure are the major limitations of valve operating capability although there can be many other aspects of a process specification that could affect both valve and diaphragm life. It is therefore essential with any valve selection to provide the fullest process and operating details such as operating cycles, speed of temperature fluctuations, sterilising fluids, steam sterilisation temperatures or any other parameter that may be present.

The Saunders aseptic diaphragm range has the following temperature and pressure characteristics: –

- ◆ Moulded and coined to provide optimum flex performance.
- ◆ Reinforcing material to ensure maximum strength in either positive or vacuum pressure duties.
- ◆ Optimum stud anchorage, to provide maximum bond strength and increased life rating of the diaphragm.

Diaphragm Temperature Type AFP (°C)		
-20°	214S/325 & 214/325	160°
-20°	214/425 & 214S/425	160°
-20°	214/300 & 214S/300	150°
-40°	425	140°
-40°	E5	140°
-40°	E3	140°
-40°	E4	110°
-30°	300	130°
-40°	325	140°
-40°	(500) GRADE	150°

Valve Body Temperature/Pressure Relationship



Type AFP – Maximum rated Working Pressure (bar)

	10	10	10	10	10	10	10	10	10
PTFE – (214)	10	10	10	10	10	10	10	10	10
All rubber types	16	16	16	16	16	16	16	10	10