

SEALED FILTER DRIERS

The function of a filter drier is to remove system contaminants, acid and moisture.

Applications

Sealed Filter Driers are designed to protect refrigeration and air-conditioning systems by removing moisture, acids and solid particles. Sealed Filter Driers are for use in the liquid line of the system. The range is suitable for use with HCFC, HFC and CO₂ refrigerants (see core data).

Main features

- Available with solid copper solder connections or steel flare connections
- Solid core for drying/acid removal
- Filter pad and mesh to remove solid particles
- Suitable for HCFC, HFC and CO₂ refrigerants

Cores

'M' Core

- 100% Molecular Sieve
- High drying capacity
- Suitable for HCFC, HFC and CO₂ refrigerants.

'A' Core

- 80% Molecular Sieve and 20% Activated Alumina
- Absorbs moisture and acid in the system
- Not suitable for oils containing additives.
- Suitable for HCFC, HFC and CO₂ refrigerants

Materials of Construction

The shell is constructed from carbon steel and powder coated for corrosion resistance. Connections are available as either copper ODS or steel flare type. Each core is constructed from a moulded composite of desiccant materials bonded to provide very high mechanical strength, micronic filtration and high moisture absorption. The 'A' core also provides acid removal.



Technical Specification

Allowable operating temperature = -40°C to +100°C

Allowable operating pressure = 0 to 45 barg

Selection Guidelines

The user should select the appropriate core based on refrigerant and oil types (see note). The model should then be selected based on the required drying and liquid capacities.

Note: Cores with Activated Alumina (type 'A') are not recommended for use with oils containing additives.

Installation – Main Issues

1. Install the filter drier upstream of the liquid line controls to give maximum protection. Locate upstream of moisture indicator so that drying effectiveness can be measured.
2. Ensure the indicated flow direction is complied with.

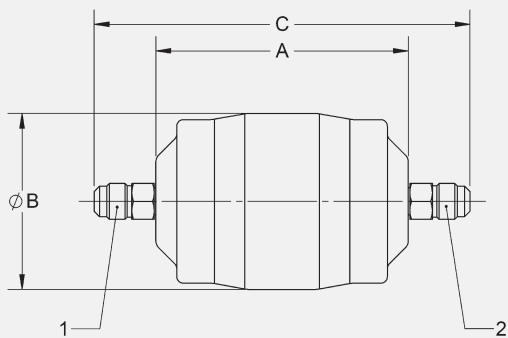


SAE FLARE MODELS

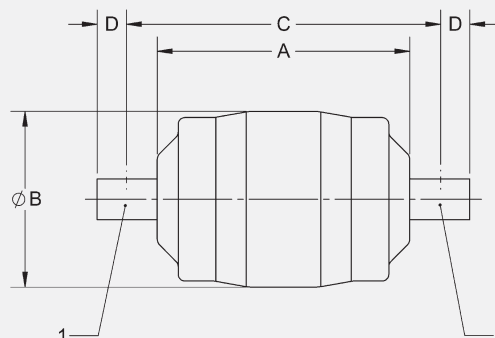
Part No	Conn Size (inch)	Shell Diameter (mm)	A (mm)	ØB (mm)	C (mm)	Weight (kg)	CE Cat
SDM/SDA-032	1/4	46	63	46	110	0.26	SEP
SDM/SDA-033	3/8	46	63	46	120	0.31	SEP
SDM/SDA-052	1/4	65	72	65	119	0.40	SEP
SDM/SDA-053	3/8	65	72	65	129	0.44	SEP
SDM/SDA-082	1/4	65	98	65	145	0.52	SEP
SDM/SDA-083	3/8	65	98	65	155	0.55	SEP
SDM/SDA-084	1/2	65	98	65	163	0.58	SEP
SDM/SDA-162	1/4	78	112	78	159	0.75	SEP
SDM/SDA-163	3/8	78	112	78	169	0.79	SEP
SDM/SDA-164	1/2	78	112	78	177	0.83	SEP
SDM/SDA-165	5/8	78	112	78	185	0.90	SEP
SDM/SDA-303	3/8	78	185	78	242	1.24	SEP
SDM/SDA-304	1/2	78	185	78	250	1.29	SEP
SDM/SDA-305	5/8	78	185	78	258	1.35	SEP
SDM/SDA-306	3/4	78	185	78	264	1.37	SEP
SDM/SDA-413	3/8	92	192	92	249	1.87	Cat I
SDM/SDA-414	1/2	92	192	92	257	1.89	Cat I
SDM/SDA-415	5/8	92	192	92	265	1.94	Cat I
SDM/SDA-416	3/4	92	192	92	271	1.97	Cat I

ODS MODELS

Part No	Conn Size (inch)	Shell Diameter (mm)	A (mm)	ØB (mm)	C (mm)	D (mm)	Weight (kg)	CE Cat
SDM/SDA-032S	1/4	46	63	46	81	13	0.23	SEP
SDM/SDA-033S	3/8	46	63	46	85	13	0.26	SEP
SDM/SDA-052S	1/4	65	72	65	90	13	0.36	SEP
SDM/SDA-053S	3/8	65	72	65	94	13	0.38	SEP
SDM/SDA-082S	1/4	65	98	65	116	13	0.48	SEP
SDM/SDA-083S	3/8	65	98	65	120	13	0.49	SEP
SDM/SDA-084S	1/2	65	98	65	122	13	0.50	SEP
SDM/SDA-162S	1/4	78	112	78	130	13	0.76	SEP
SDM/SDA-163S	3/8	78	112	78	134	13	0.81	SEP
SDM/SDA-164S	1/2	78	112	78	136	13	0.82	SEP
SDM/SDA-165S	5/8	78	112	78	134	13	0.90	SEP
SDM/SDA-303S	3/8	78	185	78	207	13	1.21	SEP
SDM/SDA-304S	1/2	78	185	78	209	13	1.25	SEP
SDM/SDA-305S	5/8	78	185	78	220	13	1.27	SEP
SDM/SDA-306S	3/4	78	185	78	209	15	1.29	SEP
SDM/SDA-413S	3/8	92	192	92	214	13	1.81	Cat I
SDM/SDA-414S	1/2	92	192	92	216	13	1.82	Cat I
SDM/SDA-415S	5/8	92	192	92	214	13	1.83	Cat I
SDM/SDA-416S	3/4	92	192	92	216	15	1.84	Cat I



Flare Model



ODS Model

- 1 Inlet
- 2 Outlet

DRYING AND LIQUID CAPACITY TABLE - 'M' CORE

Model Details		Drying Capacity (kg of refrigerant)								Liquid Capacity (kW)					
Part No	Conn Size (inch)	R22		R134a		R404A/R507		R407C/R410A		R-22	R-134a	R-404A	R-407C	R-410A	CO ₂
		24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C						
SDM-032/S	1/4	4.9	4.6	5.3	5	7.8	4.8	5.3	4.6	6.1	5.8	3.2	6.1	6.5	8.9
SDM-033/S	3/8	4.9	4.6	5.3	5	7.8	4.8	5.3	4.6	20.8	17.7	10.3	20.8	22.1	27.1
SDM-052/S	1/4	9.8	9.1	10.6	10.1	15.6	9.6	10.6	9.1	7.7	6.4	3.5	7.7	8.2	9.8
SDM-053/S	3/8	9.8	9.1	10.6	10.1	15.6	9.6	10.6	9.1	19	17.2	10.2	19	20.2	26.3
SDM-082/S	1/4	15.8	14.6	16.9	16.1	24.9	15.4	17	14.6	7.9	6.6	3.6	7.9	8.5	10.1
SDM-083/S	3/8	15.8	14.6	16.9	16.1	24.9	15.4	17	14.6	21.7	18.7	10.5	21.7	23.1	28.7
SDM-084/S	1/2	15.8	14.6	16.9	16.1	24.9	15.4	17	14.6	31.1	26.7	15.6	31.1	33.2	40.8
SDM-162/S	1/4	24.6	22.8	26.4	25.2	38.9	24.1	26.6	22.8	8.6	7.2	3.9	8.6	9.2	11
SDM-163/S	3/8	24.6	22.8	26.4	25.2	38.9	24.1	26.6	22.8	23	20.1	11.1	23	24.5	30.8
SDM-164/S	1/2	24.6	22.8	26.4	25.2	38.9	24.1	26.6	22.8	34.9	30.3	16.9	34.9	37.3	46.4
SDM-165/S	5/8	24.6	22.8	26.4	25.2	38.9	24.1	26.6	22.8	34.4	30.1	16	34.4	36.7	46.1
SDM-303/S	3/8	51.2	47.4	55	52.3	81	50	55.3	47.4	23.2	20.2	11	23.2	24.7	31
SDM-304/S	1/2	51.2	47.4	55	52.3	81	50	55.3	47.4	35.7	31.1	16.8	35.7	38.1	47.6
SDM-305/S	5/8	51.2	47.4	55	52.3	81	50	55.3	47.4	43.5	38.2	21.3	43.5	46.4	58.4
SDM-306/S	3/4	51.2	47.4	55	52.3	81	50	55.3	47.4	64.3	56	30.9	64.3	68.5	85.6
SDM-413/S	3/8	76.8	71.2	82.4	78.5	121.4	75	82.9	71.1	26.3	23.2	12.7	26.3	28	35.5
SDM-414/S	1/2	76.8	71.2	82.4	78.5	121.4	75	82.9	71.1	41.6	36.4	19.9	41.6	44.4	55.6
SDM-415/S	5/8	76.8	71.2	82.4	78.5	121.4	75	82.9	71.1	58.3	50.9	27.1	58.3	62.2	77.9
SDM-416/S	3/4	76.8	71.2	82.4	78.5	121.4	75	82.9	71.1	67.7	59.1	31.4	67.7	72.2	90.4

DRYING AND LIQUID CAPACITY TABLE - 'A' CORE

Model Details		Drying Capacity (kg of refrigerant)								Liquid Capacity (kW)					
Part No	Conn Size (inch)	R22		R134a		R404A/R507		R407C/R410A		R-22	R-134a	R-404A	R-407C	R-410A	CO ₂
		24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C						
SDA-032/S	1/4	4.3	4	4.6	4.4	7.4	4	4.5	3.9	6.1	5.8	3.2	6.1	6.5	8.9
SDA-033/S	3/8	4.3	4	4.6	4.4	7.4	4	4.5	3.9	20.8	17.7	10.3	20.8	22.1	27.1
SDA-052/S	1/4	8.6	8	9.2	8.8	14.8	8	9.1	7.7	7.7	6.4	3.5	7.7	8.2	9.8
SDA-053/S	3/8	8.6	8	9.2	8.8	14.8	8	9.1	7.7	19	17.2	10.2	19	20.2	26.3
SDA-082/S	1/4	13.8	12.8	14.8	14.1	23.7	12.8	14.5	12.4	7.9	6.6	3.6	7.9	8.5	10.1
SDA-083/S	3/8	13.8	12.8	14.8	14.1	23.7	12.8	14.5	12.4	21.7	18.7	10.5	21.7	23.1	28.7
SDA-084/S	1/2	13.8	12.8	14.8	14.1	23.7	12.8	14.5	12.4	31.1	26.7	15.6	31.1	33.2	40.8
SDA-162/S	1/4	21.5	19.9	23.1	22	37	19.9	22.6	19.3	8.6	7.2	3.9	8.6	9.2	11
SDA-163/S	3/8	21.5	19.9	23.1	22	37	19.9	22.6	19.3	23	20.1	11.1	23	24.5	30.8
SDA-164/S	1/2	21.5	19.9	23.1	22	37	19.9	22.6	19.3	34.9	30.3	16.9	34.9	37.3	46.4
SDA-165/S	5/8	21.5	19.9	23.1	22	37	19.9	22.6	19.3	34.4	30.1	16	34.4	36.7	46.1
SDA-303/S	3/8	44.8	41.5	48.1	45.7	77	41.5	47.1	40.2	23.2	20.2	11	23.2	24.7	31
SDA-304/S	1/2	44.8	41.5	48.1	45.7	77	41.5	47.1	40.2	35.7	31.1	16.8	35.7	38.1	47.6
SDA-305/S	5/8	44.8	41.5	48.1	45.7	77	41.5	47.1	40.2	43.5	38.2	21.3	43.5	46.4	58.4
SDA-306/S	3/4	44.8	41.5	48.1	45.7	77	41.5	47.1	40.2	64.3	56	30.9	64.3	68.5	85.6
SDA-413/S	3/8	67.1	62.2	72.1	68.6	115.5	62.2	70.6	60.2	26.3	23.2	12.7	26.3	28	35.5
SDA-414/S	1/2	67.1	62.2	72.1	68.6	115.5	62.2	70.6	60.2	41.6	36.4	19.9	41.6	44.4	55.6
SDA-415/S	5/8	67.1	62.2	72.1	68.6	115.5	62.2	70.6	60.2	58.3	50.9	27.1	58.3	62.2	77.9
SDA-416/S	3/4	67.1	62.2	72.1	68.6	115.5	62.2	70.6	60.2	67.7	59.1	31.4	67.7	72.2	90.4

Drying Capacity is based on the following moisture content before and after drying:

- R22:** From 1050 ppm W to 60 ppw W in accordance with ARI 710-86
- R134a:** From 1050 ppm W to 75 ppm W. If refrigerant is to be dried to 50 ppm W, reduce the stated capacities by 15%
- R404A, R407C, R507:** From 1020 ppm W to 30 ppm W
- R410A:** From 1050 ppm W to 60 ppm W

Liquid Capacity is based on:

- Evaporating temperature of $t_e = -15^\circ\text{C}$ (-30°C for CO_2)
- Condensing temperature of $t_c = +30^\circ\text{C}$ (-5°C for CO_2)
- Pressure drop across filter drier of $\Delta p = 0.07$ bar

SEALED FILTER DRIERS

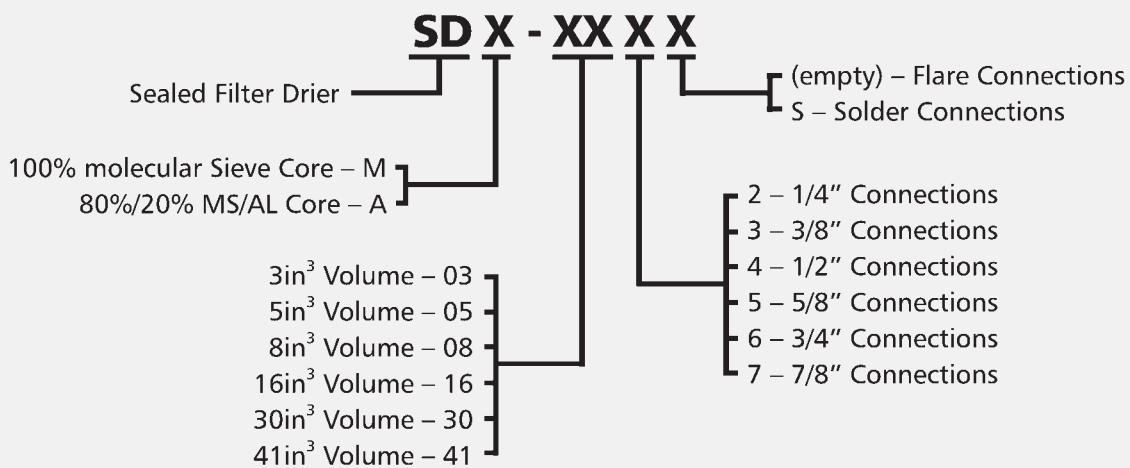
SURFACE AND VOLUME INFORMATION

Model	Core surface area	Core Volume	Shell Volume
	cm ²	cm ³	ltr
SDM/SDA-03	64	43	0.1
SDM/SDA-05	127	90	0.2
SDM/SDA-08	180	146	0.3
SDM/SDA-16	290	219	0.5
SDM/SDA-30	442	451	0.9
SDM/SDA-41	551	649	1.3

ACID CAPACITY INFORMATION

Model	Acid Capacity*
	g
SDA-03	0.8
SDA-05	1.6
SDA-08	2.6
SDA-16	4
SDA-30	8.3
SDA-41	12.5

*Absorption capacity of oleic acid at 0.05 TAN (Total Acid Number)



Example Code: SDM-082S