

ADK Filter Drier

Technical Bulletin

ADK is a hermetic filter-drier with internal solid block for use on liquid line.

Features

- Solid block
- Hermetic design.
- Rugged steel shells
- Corrosion resistant epoxy paint
- Cushioned flow for non-turbulent performance
- High water and acid adsorption capacity
- High filtration capacity / efficiency



ADK

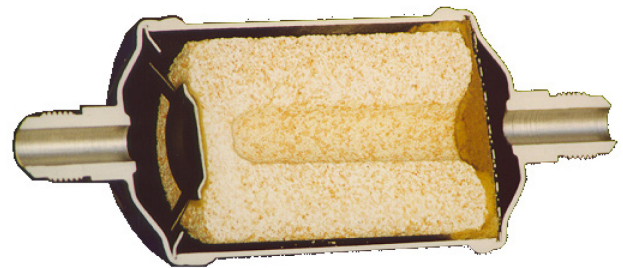
Construction / Function

Liquid line filter-driers are often referred to as system protectors because they remove harmful elements from the circulating refrigerants and lubricants before serious damage results.

No matter how many precautions are taken during assembly and installation or servicing of a system, contaminants can find (generate) their way into the system. These contaminants can be solid, such as metal swarf, flux, dust and dirt. Other equally menacing contaminants are soluble, such as water, acid and wax.




The active drying material is in the form of solid block. The solid block is a mixture of molecular Sieve and activated Alumina for maximum moisture and acid removal capability. These adsorbents are formed into a solid block and are held together by a **Synthetic binding material**.

Springs keep the block centred in the rugged steel shell, providing a cushioned flow with non-turbulent performance.



Technical Data

Max. allowable pressure PS	45 bar
Test pressure PT	47.3 bar
Medium Temperature TS	-45...+65°C
Fluid Group	I + II
List of released refrigerants	
Fluid group II (A1):	R134a, R404A, R407C, R410A, R448A, R449A, R450A, R452A, R507, R513A, R744
Fluid group I (A2L):	R32, R452B, R454B, R454A, R454C, R455A, R1234ze, R1234yf
<u>Note:</u> Fluid group classification according to PED 2014/68/EU.	

Material shell	Steel
Paint	Epoxy Powder paint
Connections	Solder Flare Copper, ODF Burnished, SAE
Protection	500+ Hours salt spray test
Package	Individual packaged
Marking	 (A2L pending)  (acc. PED, V > 1 liter), 

ADK Filter Drier

Selection table - A1 Refrigerants / CO₂

Type	Part No.	Connection ODF*/SAE*	Flow capacity (kW) pressure drop 0.07 bar **									
			R134a	R407C	R404A R507	R410A	R448A	R449A	R450A	R513A	R452A	R744
ADK-032	003595	1/4"(6 mm) SAE	6.7	7	4.8	7.2	6.4	6.2	6.1	5.9	4.8	8.1
ADK-032S	003596	1/4" ODF	8.1	8.4	5.7	8.7	7.7	7.5	7.4	7.0	5.8	9.7
ADK-036MMS	003597	6 mm ODF	7.3	7.6	5.2	7.9	7.0	6.8	6.7	6.4	5.3	8.8
ADK-052	003598	1/4"(6 mm) SAE	6.9	7.2	4.9	7.5	6.6	6.5	6.4	6.1	5.0	8.3
ADK-052S	003599	1/4" ODF	9.9	10.3	7	10.7	9.4	9.2	9.1	8.6	7.1	11.9
ADK-056MMS	003600	6 mm ODF	9.2	9.5	6.5	9.9	8.7	8.5	8.4	8.0	6.6	11.0
ADK-053	003601	3/8"(10 mm) SAE	13	13.5	9.2	14	12.3	12.1	11.9	11.3	9.4	15.6
ADK-053S	003602	3/8" ODF	15	15.6	10.7	16.1	14.3	14.0	13.7	13.1	10.8	18.0
ADK-0510MMS	003603	10 mm ODF	15	15.6	10.7	16.1	14.3	14.0	13.7	13.1	10.8	18.0
ADK-082	003604	1/4"(6 mm) SAE	7.1	7.4	5.1	7.7	6.8	6.7	6.5	6.2	5.2	8.6
ADK-082S	003605	1/4" ODF	10.9	11.4	7.8	11.8	10.4	10.2	10.0	9.6	7.9	13.2
ADK-086MMS	003606	6 mm ODF	9.8	10.2	7	10.5	9.3	9.1	9.0	8.5	7.1	11.7
ADK-083	003607	3/8"(10 mm) SAE	15	15.6	10.7	16.2	14.3	14.0	13.8	13.1	10.8	18.1
ADK-083S	003608	3/8" ODF	15	15.7	10.7	16.2	14.3	14.0	13.8	13.1	10.9	18.1
ADK-0810MMS	003609	10 mm ODF	15	15.6	10.7	16.2	14.3	14.0	13.8	13.1	10.8	18.1
ADK-084	003610	1/2"(12 mm) SAE	23.5	24.5	16.7	25.3	22.4	21.9	21.5	20.5	17.0	28.3
ADK-084S	003611	1/2" ODF	24.5	25.6	17.5	26.4	23.3	22.9	22.5	21.4	17.7	29.5
ADK-0812MMS	003612	12 mm ODF	24.1	25.1	17.2	26	22.9	22.5	22.1	21.1	17.4	29.0
ADK-162	003613	1/4"(6 mm) SAE	7.3	7.6	5.2	7.8	6.9	6.8	6.7	6.4	5.3	8.8
ADK-163	003614	3/8"(10 mm) SAE	15.4	16	10.9	16.5	14.6	14.3	14.1	13.4	11.1	18.5
ADK-163S	003615	3/8" ODF	17.2	17.9	12.2	18.5	16.3	16.0	15.7	15.0	12.4	20.6
ADK-1610MMS	003616	10 mm ODF	17.1	17.8	12.2	18.5	16.3	16.0	15.7	15.0	12.4	20.6
ADK-164	003617	1/2"(12 mm) SAE	28.7	29.9	20.4	30.9	27.3	26.7	26.3	25.1	20.7	34.5
ADK-164S	003618	1/2" ODF	33	34.3	23.5	35.5	31.4	30.7	30.2	28.8	23.8	39.6
ADK-1612MMS	003619	12 mm ODF	29.6	30.8	21.1	31.9	28.2	27.6	27.1	25.9	21.4	35.6
ADK-165	003620	5/8"(16 mm) SAE	41.1	42.8	29.2	44.3	39.1	38.3	37.7	35.9	29.7	49.4
ADK-165S	003621	5/8"(16 mm) ODF	45.6	47.4	32.4	49.1	43.3	42.5	41.8	39.8	32.9	54.8
ADK-303	003622	3/8"(10 mm) SAE	16.2	16.9	11.5	17.5	15.4	15.1	14.9	14.2	11.7	19.5
ADK-304	003623	1/2"(12 mm) SAE	28.7	29.9	20.4	30.9	27.3	26.7	26.3	25.1	20.7	34.5
ADK-304S	003624	1/2" ODF	33	34.4	23.5	35.6	31.4	30.8	30.3	28.8	23.8	39.7
ADK-305	003626	5/8"(16 mm) SAE	48.2	50.2	34.3	52	45.9	45.0	44.2	42.1	34.8	58.0
ADK-305S	003627	5/8"(16 mm) ODF	48.4	50.4	34.4	52.1	46.0	45.1	44.3	42.2	34.9	58.1
ADK-307S	003628	7/8"(22 mm) ODF	60.7	63.2	43.2	65.4	57.8	56.6	55.7	53.0	43.9	73.0
ADK-414	003629	1/2"(12 mm) SAE	33.7	35.1	24	36.3	32.1	31.4	30.9	29.4	24.3	40.5
ADK-415	003632	5/8"(16 mm) SAE	53.7	55.9	38.2	57.8	51.1	50.0	49.2	46.9	38.8	64.5
ADK-415S	003633	5/8"(16 mm) ODF	57.7	60.1	41.1	62.2	54.9	53.8	52.9	50.4	41.7	69.4
ADK-417S	003634	7/8"(22 mm) ODF	71.4	74.3	50.8	76.9	67.9	66.6	65.4	62.4	51.5	85.8
ADK-757S	003635	7/8"(22 mm) ODF	96.7	100.7	68.8	104.2	92.0	90.1	88.6	84.4	69.8	116.2
ADK-759S	003636	1-1/8" ODF	107.4	111.8	76.4	115.7	102.1	100.1	98.4	93.8	77.5	129.0

Note 1: Flow capacities are in accordance with ARI710-86 and DIN8949. R744 is not specified by standard.

Note 2: *) SAE = Flare. ODF = Brazing female

Note 3: **) 0.14 bar pressure drop, multiply values by 1.4

Note 4: Product label update is pending!

Nominal Flow Capacities bases on following operating conditions:

Refrigerant	Evaporating temperature	Liquid temperature	Flow rate kg/kW/sec.	Refrigerant	Evaporating temperature	Liquid temperature	Flow rate kg/kW/sec.
R134a	-15°C	+30°C	0.0068	R448A	-15°C	+30°C	0.0061
R407C			0.0063	R449A			0.0061
R404A/R50			0.0088	R450A			0.0074
R410A			0.0059	R452A			0.0086
R744	-40°C	-10°C	0.0039	R513A			0.0079

Note: For other operating conditions use the "Controls Navigator 4.1" selection tool.

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Selection table - A2L Refrigerants

Type	Part No.	Connection ODF*/SAE*	Flow capacity (kW) pressure drop 0.07 bar **							
			R32	R452B	R454B	R454A	R454C	R455A	R1234ze	R1234yf
ADK-032	003595	1/4"(6 mm) SAE	10.4	8.1	8.1	6.2	5.4	5.7	5.9	4.8
ADK-032S	003596	1/4" ODF	12.4	9.7	9.8	7.4	6.5	6.9	7.1	5.8
ADK-036MMS	003597	6 mm ODF	11.3	8.9	8.9	6.8	5.9	6.3	6.4	5.3
ADK-052	003598	1/4"(6 mm) SAE	10.7	8.4	8.4	6.4	5.6	5.9	6.1	5.0
ADK-052S	003599	1/4" ODF	15.3	12.0	12.0	9.1	8.0	8.5	8.7	7.1
ADK-056MMS	003600	6 mm ODF	14.2	11.1	11.1	8.5	7.4	7.8	8.0	6.6
ADK-053	003601	3/8"(10 mm) SAE	20.1	15.7	15.8	12.0	10.5	11.1	11.4	9.3
ADK-053S	003602	3/8" ODF	23.2	18.1	18.2	13.8	12.1	12.8	13.1	10.8
ADK-0510MMS	003603	10 mm ODF	23.2	18.1	18.2	13.8	12.1	12.8	13.1	10.8
ADK-082	003604	1/4"(6 mm) SAE	11.0	8.6	8.7	6.6	5.8	6.1	6.2	5.1
ADK-082S	003605	1/4" ODF	16.9	13.2	13.3	10.1	8.8	9.4	9.6	7.9
ADK-086MMS	003606	6 mm ODF	15.1	11.8	11.9	9.0	7.9	8.4	8.6	7.0
ADK-083	003607	3/8"(10 mm) SAE	23.2	18.2	18.3	13.9	12.1	12.8	13.2	10.8
ADK-083S	003608	3/8" ODF	23.2	18.2	18.3	13.9	12.1	12.9	13.2	10.8
ADK-0810MMS	003609	10 mm ODF	23.2	18.2	18.3	13.9	12.1	12.8	13.2	10.8
ADK-084	003610	1/2"(12 mm) SAE	36.3	28.4	28.6	21.7	19.0	20.1	20.6	16.9
ADK-084S	003611	1/2" ODF	37.9	29.7	29.9	22.6	19.8	21.0	21.5	17.7
ADK-0812MMS	003612	12 mm ODF	37.3	29.2	29.3	22.3	19.5	20.6	21.1	17.4
ADK-162	003613	1/4"(6 mm) SAE	11.3	8.8	8.9	6.7	5.9	6.2	6.4	5.2
ADK-163	003614	3/8"(10 mm) SAE	23.7	18.6	18.7	14.2	12.4	13.1	13.4	11.0
ADK-163S	003615	3/8" ODF	26.5	20.7	20.9	15.8	13.8	14.7	15.0	12.3
ADK-1610MMS	003616	10 mm ODF	26.5	20.7	20.8	15.8	13.8	14.7	15.0	12.3
ADK-164	003617	1/2"(12 mm) SAE	44.4	34.7	34.9	26.5	23.2	24.5	25.1	20.6
ADK-164S	003618	1/2" ODF	51.0	39.9	40.1	30.4	26.6	28.2	28.9	23.7
ADK-1612MMS	003619	12 mm ODF	45.8	35.8	36.0	27.3	23.9	25.3	25.9	21.3
ADK-165	003620	5/8"(16 mm) SAE	63.5	49.7	50.0	37.9	33.2	35.1	36.0	29.6
ADK-165S	003621	5/8"(16 mm) ODF	70.4	55.1	55.4	42.0	36.8	39.0	39.9	32.8
ADK-303	003622	3/8"(10 mm) SAE	25.0	19.6	19.7	15.0	13.1	13.9	14.2	11.7
ADK-304	003623	1/2"(12 mm) SAE	44.4	34.7	34.9	26.5	23.2	24.5	25.1	20.6
ADK-304S	003624	1/2" ODF	51.0	39.9	40.1	30.5	26.7	28.2	28.9	23.7
ADK-305	003626	5/8"(16 mm) SAE	74.5	58.3	58.7	44.5	38.9	41.2	42.2	34.7
ADK-305S	003627	5/8"(16 mm) ODF	74.8	58.5	58.8	44.6	39.0	41.4	42.4	34.8
ADK-307S	003628	7/8"(22 mm) ODF	93.9	73.4	73.9	56.0	49.0	51.9	53.2	43.7
ADK-414	003629	1/2"(12 mm) SAE	52.1	40.8	41.0	31.1	27.2	28.8	29.5	24.3
ADK-415	003632	5/8"(16 mm) SAE	83.0	64.9	65.3	49.5	43.3	45.9	47.0	38.6
ADK-415S	003633	5/8"(16 mm) ODF	89.2	69.8	70.2	53.3	46.6	49.4	50.5	41.5
ADK-417S	003634	7/8"(22 mm) ODF	110.4	86.3	86.8	65.9	57.6	61.1	62.5	51.4
ADK-757S	003635	7/8"(22 mm) ODF	149.4	116.9	117.6	89.2	78.1	82.7	84.7	69.5
ADK-759S	003636	1-1/8" ODF	166.0	129.8	130.6	99.1	86.7	91.8	94.0	77.2

Note 1: Flow capacities are in accordance with ARI710-86 and DIN8949.

Note 2: *) SAE = Flare. ODF = Brazing female

Note 3: **) 0.14 bar pressure drop, multiply values by 1.4

Note 4: Product label update is pending!

Nominal Flow Capacities bases on following operating conditions:

Refrigerant	Evaporating temperature	Liquid temperature	Flow rate kg/kW/sec.	Refrigerant	Evaporating temperature	Liquid temperature	Flow rate kg/kW/sec.
R32	-15°C	+30°C	0.0039	R454C	-15°C	+30°C	0.0058
R452B			0.0043	R455A			0.0072
R454B			0.0047	R1234ze			0.0076
R454A			0.0061	R1234yf			0.0089

Note: For other operating conditions use the "Controls Navigator 4.1" selection tool.

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Water and Acid Adsorption Capacity

A1 Refrigerants / CO₂

Type / Size	Water adsorption capacity (gram)										Acid Adsorption Capacity (gram)
	Liquid Temperature 24°C					Liquid Temperature 52°C					
	R134a	R404A R507	R407C	R410A	R744	R134a	R404A/ R507	R407C	R410A	R744*	
ADK-03	4.9	4.9	3.4	2.8	4.6	4.4	4.6	2.9	2.4	4.2	0.8 g
ADK-05	11.8	11.8	8.2	6.8	8.7	10.6	10.9	7	5.8	7.9	2.3 g
ADK-08	17.9	18	12.4	10.3	13.2	16.2	16.6	10.7	8.8	12.0	3.3 g
ADK-16	23	23.1	16	13.2	17.0	20.8	21.3	13.8	11.4	15.4	4.5 g
ADK-30	51.8	53.5	36.9	30.6	41.0	47.4	49.3	31.8	26.3	38.1	11.3 g
ADK-41	81.7	84.3	58.2	48.3	54.3	74.8	77.8	50.2	41.4	50.5	16.8 g
ADK-75	143.5	148.1	102.1	84.8	96.3	131.4	136.6	88.1	72.8	89.5	29.9 g

Type / Size	Water adsorption capacity (gram)										Acid Adsorption Capacity (gram)
	Liquid Temperature 24°C					Liquid Temperature 52°C					
	R448A	R449A	R450A	R452A	R513A	R448A	R449A	R450A	R452A	R513A	
ADK-03	4.7	4.7	6.0	3.4	6.0	4.3	4.3	5.5	2.7	5.4	0.8 g
ADK-05	9.0	9.0	11.4	6.5	11.3	8.2	8.2	10.3	5.0	10.3	2.3 g
ADK-08	13.7	13.7	17.3	9.8	17.2	12.4	12.4	15.7	7.7	15.7	3.3 g
ADK-16	17.5	17.5	22.2	12.6	22.1	16.0	16.0	20.2	9.9	20.1	4.5 g
ADK-30	39.9	39.9	52.0	32.8	51.7	37.5	36.3	46.1	25.6	45.9	11.3 g
ADK-41	52.8	52.8	68.8	43.4	68.4	49.7	48.1	61.0	33.9	60.7	16.8 g
ADK-75	93.8	93.8	122.1	77.1	121.4	88.2	85.3	108.4	60.1	107.8	29.9 g

Note: *) Liquid temperature -10 °C

A2L Refrigerants

Type / Size	Water adsorption capacity (gram)										Acid Adsorption Capacity (gram)
	Liquid Temperature 24°C					Liquid Temperature 52°C					
	R32	R452B	R454A R454B R454C	R455A	R1234ze R1234yf	R32	R452B	R454A R454B R454C	R455A	R1234ze R1234yf	
ADK-03	3.4	3.4	3.4	3.4	6.0	2.7	2.7	2.7	2.7	5.5	0.8 g
ADK-05	6.5	6.5	6.5	6.5	11.4	5.2	5.0	5.0	5.0	10.3	2.3 g
ADK-08	9.8	9.8	9.8	9.8	17.3	7.8	7.7	7.7	7.7	15.7	3.3 g
ADK-16	12.6	12.6	12.6	12.6	22.2	10.1	9.9	9.9	9.9	20.2	4.5 g
ADK-30	32.8	32.8	32.8	32.8	57.6	26.2	25.6	25.6	25.6	52.5	11.3 g
ADK-41	43.4	43.4	43.4	43.4	76.2	34.6	33.9	33.9	33.9	69.4	16.8 g
ADK-75	77.1	77.1	77.1	77.1	135.4	61.5	60.1	60.1	60.1	123.3	29.9 g

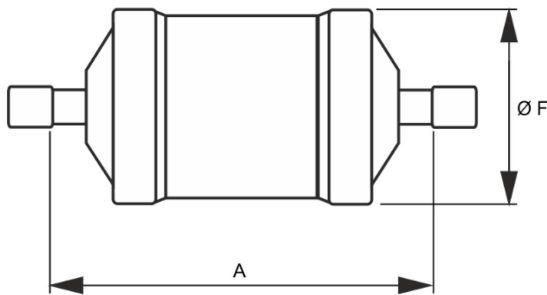
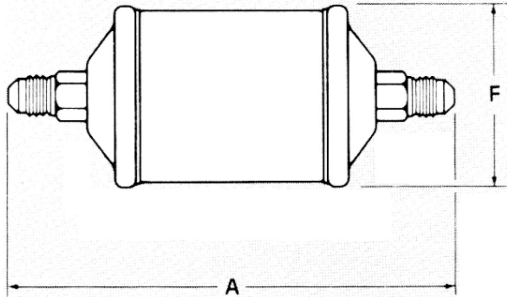
The water capacities are according to ARI-Standard 710 and DIN 8948. (except R744)

Refrigerant	EPD	Refrigerant	EPD	Refrigerant	EPD	Refrigerant	EPD
R134a	50 ppm	R448A	60 ppm	R32	50 ppm	R454A	60 ppm
R407C	50 ppm	R449A	60 ppm	R452B	60 ppm	R454C	60 ppm
R404A/R507	50 ppm	R450A	60 ppm	R454B	60 ppm	R455A	60 ppm
R410A	50 ppm	R452A	60 ppm			R1234ze	50 ppm
R744	50 ppm	R513A	60 ppm			R1234yf	50 ppm

Note: EPD = End Point Dryness

ADK Filter Drier

Dimensions (mm)



Type	Part No.	A (mm)	B (mm)	F (mm)	Connection			
					Brazing/ ODF (mm)	(Inch)	Flare/ SAE (mm)	(Inch)
ADK-032	003595	111	-	44	-	-	6	1/4"
ADK-032S	003596	-	70	44	-	1/4"	-	-
ADK-036MMS	003597	-	70	44	6	-	-	-
ADK-052	003598	122	-	64	-	-	6	1/4"
ADK-052S	003590	-	82	64	-	1/4"	-	-
ADK-056MMS	003600	-	82	64	6	-	-	-
ADK-053	003601	130	-	64	-	-	10	3/8"
ADK-053S	003602	-	82	64	-	3/8"	-	-
ADK-0510MMS	003603	-	82	64	10	-	-	-
ADK-082	003604	143	-	64	-	-	6	1/4"
ADK-082S	003605	-	103	64	-	1/4"	-	-
ADK-086MMS	003606	-	103	64	6	-	-	-
ADK-083	003607	151	-	64	-	-	10	3/8"
ADK-083S	003608	-	102	64	-	3/8"	-	-
ADK-0810MMS	003609	-	102	64	10	-	-	-
ADK-084	003610	156	-	64	-	-	12	1/2"
ADK-084S	003611	-	103	64	-	1/2"	-	-
ADK-0812MMS	003612	-	103	64	12	-	-	-
ADK-162	003613	167	-	64	-	-	6	1/4"
ADK-163	003614	175	-	64	-	-	10	3/8"
ADK-163S	003615	-	127	64	-	3/8"	-	-
ADK-1610MMS	003616	-	127	64	10	-	-	-
ADK-164	003617	181	-	64	-	-	12	1/2"
ADK-164S	003618	-	127	64	-	1/2"	-	-
ADK-1612MMS	003619	-	127	64	12	-	-	-
ADK-165	003620	192	-	64	-	-	16	5/8"
ADK-165S	003621	-	128	64	-	5/8"	-	-
ADK-303	003622	242	-	76	-	-	10	3/8"
ADK-304	003623	247	-	76	-	-	12	1/2"
ADK-304S	003624	-	194	76	-	1/2"	-	-
ADK-305	003626	263	-	76	-	-	16	5/8"
ADK-305S	003627	-	194	76	-	5/8"	-	-
ADK-307S	003628	-	194	76	22	7/8"	-	-
ADK-414	003629	253	-	89	-	-	12	1/2"
ADK-415	003632	264	-	89	-	-	16	5/8"
ADK-415S	003633	-	200	89	-	5/8"	-	-
ADK-417S	003634	-	199	89	22	7/8"	-	-
ADK-757S	003635	-	337	91	22	7/8"	-	-
ADK-759S	003636	-	351	91	-	1-1/8"	-	-

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