

Dry All[®]

Full Range of HVAC&R Line Products



File No. SA33181



**LIQUID LINE FILTER DRIER DCH SERIES
(SOLID CORE TYPE)**

Introduction

The DRY ALL DCH type filter drier plays a crucial role in refrigeration and air conditioning systems by removing moisture and contaminants from the refrigerant, making it an essential component. The DCH filter drier is designed to ensure even distribution of the refrigerant flow, efficient moisture removal and filtration with minimum pressure drop. The choice of using a DCH type filter drier in a refrigeration and air conditioning system depends on the specific requirements and characteristics of the system. Systems which are operating under varied conditions, and different contamination levels may benefit from DCH types of filter driers.

Filter Drier Core

The DCH filter drier core is constructed from a composite of selected desiccant materials, comprising molecular sieves and activated alumina. These desiccants are bonded together with a low-content binder, then molded and baked at a specific temperature to create a robust and porous core structure. One of its notable characteristics is its resilience to attrition, it can withstand wear and tear caused by the flow of refrigerant and other system factors more effectively.

The solid core in DCH series filter drier is consisting of 80% molecular sieve and 20% activated alumina. These materials are engineered to excel in applications requiring high flow rates, efficient moisture removal, and effective acid absorption.

80% Molecular Sieve: Molecular sieves are crystalline materials with uniform pores that selectively adsorb water molecules. In this context, the 80% molecular sieve component is tailored for moisture removal by targeting water molecules.

20% Activated Alumina: Activated alumina, with its extensive porosity, is adept at adsorbing various substances, including acids and moisture. The 20% activated alumina content enhances the material's capacity to absorb acids.

Why Filter Driers are required in HVAC&R Systems

Moisture: A major problem in the system:

Moisture is a common concern in refrigeration systems and can have several detrimental effects on system performance and longevity. Following are detailed explanation of the problems & issues associated with moisture in refrigeration systems:

Corrosion problem: Moisture can lead to corrosion of metallic components within the refrigeration system. This includes the evaporator coils, condenser coils, and various piping and tubing. Corrosion weakens these components over time, potentially leading to refrigerant leaks and reduced system efficiency.

Acid's formation: When moisture is present in a refrigeration system, it can react with refrigerant and lubricating oil, leading to the formation of acids. These acids can be highly corrosive and further accelerate the deterioration of metal components. Acid formation is a significant concern, particularly in systems using chlorine-containing refrigerants, as it can lead to the breakdown of these refrigerants and the release of chlorine, which is harmful to the environment.

Lubricant Degradation: Moisture in the system can also cause the lubricating oil, often polyolester (POE) oil, to degrade. This degradation can produce organic acids, which contribute to the acidity of the system. Acidic lubricating oil can lead to increased corrosion and reduced compressor life.

Reduced Efficiency: Moisture can reduce the efficiency of the refrigeration system. When moisture mixes with the refrigerant, it can change the refrigerant's properties, including its boiling point. This alters the system's cooling capacity and efficiency, potentially leading to inadequate cooling or heating performance.

Contaminants: Metallic particle scale, sludges, wax-like substances and dirt are frequently found in refrigeration systems. All these contaminants can cause decrease in efficiency and sometimes even the failure of compressor, expansion valve, etc.

To mitigate these issues, it's crucial to maintain low moisture levels within the refrigeration system. This is typically achieved through installation of filter driers.

Important Functions of Filter drier in HVAC&R Systems

Filter-driers are an essential component in refrigeration and air conditioning systems, and they serve several important functions:

Moisture Removal: One of the primary functions of a filter-drier is to remove moisture from the refrigerant and the system. Moisture is a common problem in these systems, as it can lead to the formation of acids and corrosion, as mentioned earlier. The filter-drier contains a desiccant material (a molecular sieve or activated alumina) that absorbs moisture as the refrigerant flows through it.

Acid Removal: Filter-driers can neutralize acids that may be present in the system. As mentioned earlier, acids can form due to moisture and lubricant degradation. The desiccant material in the filter drier can react with and neutralize these acids, preventing them from causing corrosion and damage to system components.

Particle Filtration: Filter-driers act as filters, trapping and removing particles and debris that could clog or damage system components such as expansion valves and capillary tubes. This helps maintain the efficiency of the system and prevents blockages.

Contaminant Removal: In addition to moisture, filter-driers also help remove contaminants from the refrigerant. Contaminants can include dirt, debris, oil, and acids. These impurities can negatively impact the performance and efficiency of the system and may lead to compressor damage if not removed.

Protection for the Compressor: One of the critical components in a refrigeration or air conditioning system is the compressor. Filter-driers play a crucial role in protecting the compressor by removing contaminants, moisture, and acids from the refrigerant before it enters the compressor. This extends the life of the compressor and helps maintain system efficiency. System Performance: By maintaining clean and dry refrigerant, filter-driers help ensure that the system operates at its designed capacity and efficiency. This is essential for achieving proper cooling or heating in refrigeration and air conditioning applications.

Product Conformity/Testing

The Dry All ensures the filter drier functions by doing filtration efficiency test, acid removal test and water drying test in Dry All laboratory. The DCH type filter drier provides the filtration up to 20µ particle size with greater than 98% efficiency, absorb acids and moisture. Testing helps in ensuring that these components are functioning well.

Standard Ratings

Liquid-line filter driers shall be rated by their water capacity in drops and refrigerant flow capacity at 1.0 psi pressure drop. DRY ALL follow to technical standards for testing and rating to filter driers. The filter driers are tested for water capacity and flow capacity at Dry All research center as per standard ASHRAE 63.1 “Methods of Testing Liquid Line Refrigerant Driers, and rated for water and flow capacity as per AHRI 710 standards.

Water Capacity

The mass of water a drier will collect and hold in equilibrium with a specified refrigerant at a given temperature and a specified equilibrium dewpoint dryness. Dry All filter drier water holding capacity is expressed in drops of water. 20drops equals to 1 grams.

$$\text{Drop of Water} = \frac{\text{Kg of refrigerant (Initial PPM-Final PPM)}}{50}$$

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All ratings are in accordance with ANSI/AHRI Standard 710-2009 Water Capacities are based on following standard rating conditions:

Water in refrigerant at EPD for:

Initial PPM: R134a: 1050, R404A, R507/ R407C: 1020, R32: 990, R404A, R410A/ R22: 1050.

Final PPM: R-134a/R-407C/R-410A/R-404A/R-507A is 50 PPM, R-22 is 60 PPM.

Initial PPM: R-32: 990 PPM, R134a, R410A, R22: 1050

Initial PPM: R404A, R507, R407C: 1020

Refrigerant Flow Capacity

The maximum flow of liquid refrigerant (in tons) that a drier will pass at a 1 psi/0.07 bar pressure drop is the refrigerant flow capacity. The "ton" ratings are based on 86°F/30°C liquid temperature and refrigerant flow rate per Ton of Refrigeration at 86°F Liquid & 5.0°F Saturated Vapor for:

R-134a is 3.1 lb/min/ton,

R-407C is 3.0 lb/min/ton,

R-410A is 2.8 lb/min/ton,

R-404A is 4.1 lb/min/ton,

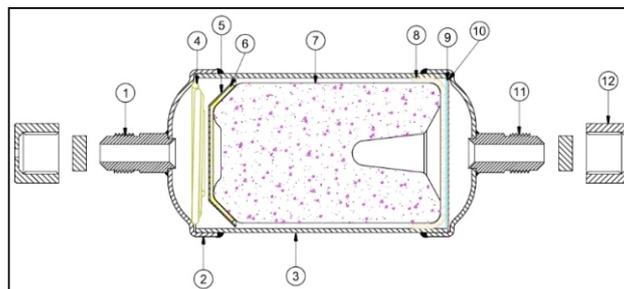
R-507A is 4.2 lb/min/ton,

R-22 is 3.0 lb/min/ton.

Safety

Dry All filter drier tested for burst pressure to comply with the safety Dry All manufacturing standard under AHRI Standard 710 meet the requirements of Underwriters' Laboratories, Inc., Standard 207 (UL), "Refrigerant Containing Components and Accessories, Nonelectrical."

Filter-Drier Internal Design



1. Inlet

2. Dish

3. Shell

4. Conical Compression Spring

5. Perforated Conical Disk

6. Round Non-Woven

7. Desiccant Solid Core

8. Square Non-woven Fabric

9. SS Wire Mesh

10. Perforated plain Disk

11. Outlet

12. Plastic Cap

LIQUID LINE FILTER DRIER DCH SERIES (SOLID CORE TYPE)



Features

DCH Type

- Compatible with all types of CFC, HCFC, HFO, HFC, and HC refrigerants.
- Compatible with mineral oil and POE lubricants.
- 80% molecular sieve and 20% activated alumina provide high drying capacity & acid removal.
- Greater than 99% filtration efficiency.
- High water adsorption and acid absorption capacity.
- Filter drier can be installed horizontally or vertically, provided flow direction is considered.
- Available with flare, solder, zoom lock, O-Ring Flare, and Rotolock connection of various sizes.
- Internal and external components i.e., springs, perforated disc, and dish end, are cleaned, degreased, iron phosphate coated, and passivized for rust prevention.

Shell

- Oven-baked, corrosion-resistant, epoxy powdered coated has a salt spray life greater than 500hrs.
- Available in sizes 1.5 to 75 In³.
- Sustainable to all environmental and adverse conditions.

Filtration

- 25 µm filter provides high filtration and dirt retention with minimal pressure drop.

Specification

- Maximum working pressure of 45 bar i.e., 653psig.
- Sustainable temperature range -40°C to +70°C.
- Burst pressure-five times of MWP.
- SAE, ORFS, and O'RING, zoom lock type connections are Steel & Nickel Plated.

Applications

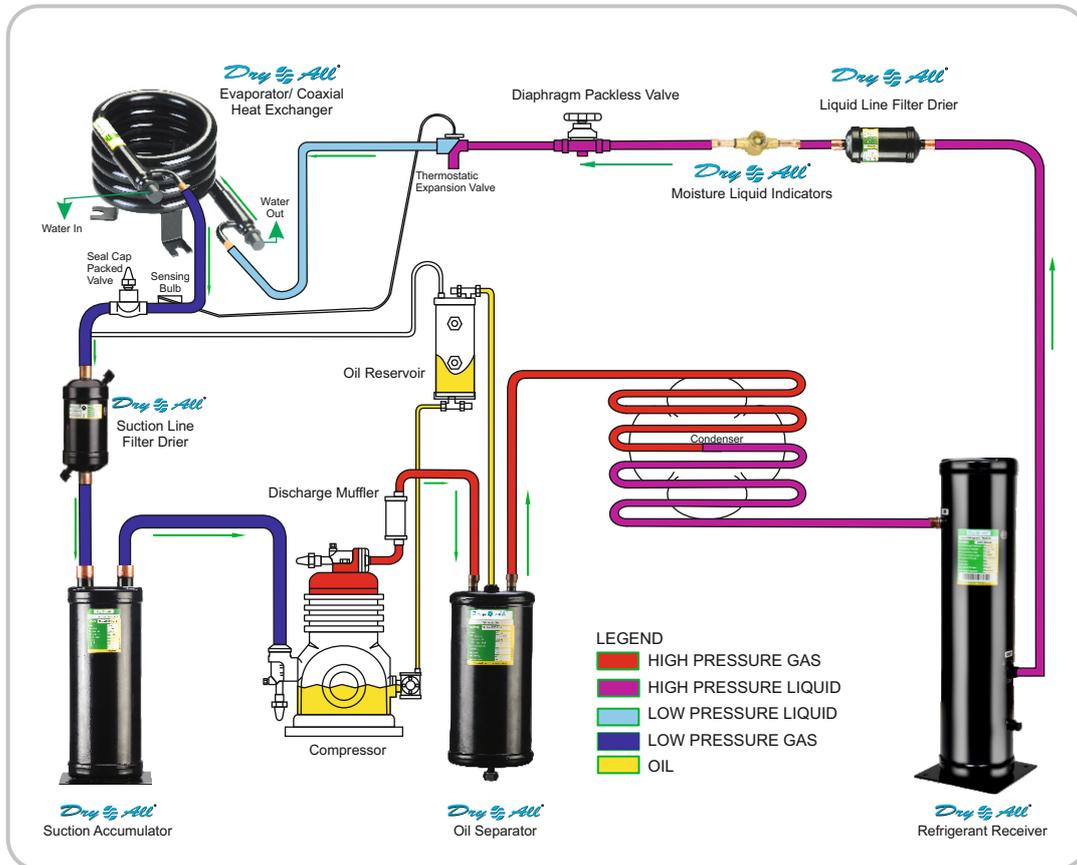
The market is coming up daily with new refrigerants to tackle modern-day problems such as low GWP, ODP, Energy Efficiency, etc.

- Dry All filter driers are compatible with almost all the refrigerants available in the market, can install the Dry All filter drier in any HFC, HCFC, HFO, or HC system.
- The High working pressure enables the Dry All filter drier ready for new Refrigerants like R32, R410, etc. Dry All filter driers can also be used with flammable refrigerants such as R600a, R600, R290, etc.
- For new refrigerants compatibility please consult to Dry All technical team.

LIQUID LINE FILTER DRIER DCH SERIES (SOLID CORE TYPE)

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Product installed in Refrigeration System



Certificate/Compliances

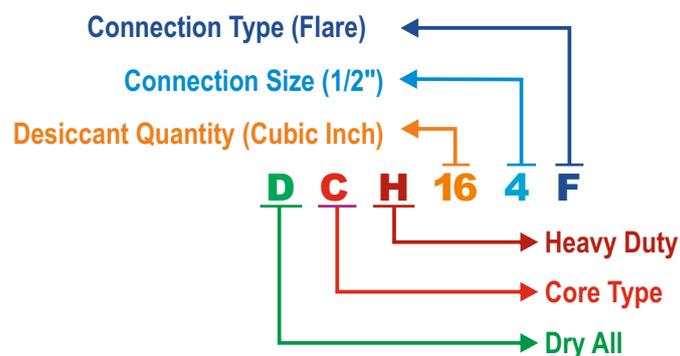
- UL listed File No. SA33181 [UL 207]
- RoHS Compliance [ROHS-3.0 2015/863/EU Directive]
- REACH COMPLIANCE [EC 1907/2006]
- CE Marking [Up to 7/8" ODF connection size CE marking is not required according to article 4, Paragraph 3 of PED 2014/68/EU].

LIQUID LINE FILTER DRIER DCH SERIES (SOLID CORE TYPE)



Nomenclature

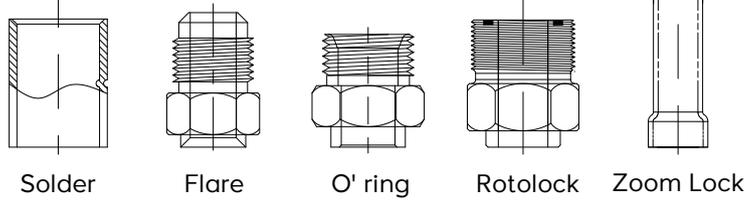
Type	Nomenclature	
Brand	D	Dry All
Desiccant Types	C	Core Type
Vessel Type	H	Heavy Duty
Connection Size (in ³)	2	1/4"
	3	3/8"
	4	1/2"
	5	5/8"
	6	3/4"
	7	7/8"
	9	1 1/8"
Desiccant Quantity (in ³)	1.5	1.5 in ³
	3	3 in ³
	5	5 in ³
	8	8 in ³
	16	16 in ³
	30	30 in ³
	41	41 in ³
Connection Types	75	75 in ³
	S	Solder connection
	F	Flare connection
	ORN	O" ring connection
	R	Rotolock (ORFS) Connection



LIQUID LINE FILTER DRIER DCH SERIES (SOLID CORE TYPE)

Drawings

Filter Drier Connections



DIMENSIONAL DATA

DRAWING - 1	DRAWING - 2	DRAWING - 3
DRAWING - 4	DRAWING - 5	DRAWING - 6
DRAWING - 7	DRAWING - 8	DRAWING - 9
DRAWING - 10	DRAWING - 11	DRAWING - 12

Connection Type (Flare) ←
 Connection Size (1/2") ←
 Desiccant Quantity (cubic inch) ←
DCH - 16 4F
 Heavy Duty
 Core Type
 Dry All

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Sr No.	Model	Connection Type	Outer Dia ØA		Body Length B		Stopper To Stopper Length C		Overall Length D		Refer Drawing No.		
			mm	Inche	mm	Inche	mm	Inche	mm	Inche			
1	DCH-032F	1/4" SAE	Ø42	Ø16	67	2.64	--	--	113	4.45	DRAWING - 1		
2	DCH-032F-MXF	1/4" SAE (F/M)					--	--	102	4.00	DRAWING - 9		
3	DCH-032S	1/4" ODF					97	3.82	117	4.45	DRAWING - 2		
4	DCHSV-032F	1/4" SAE					--	--	113	4.61	DRAWING - 8		
5	DCHSV-032S	1/4" ODF					97	3.82	117	4.61	DRAWING - 7		
6	DCH-033F	3/8" SAE					--	--	121	4.76	DRAWING - 1		
7	DCH-033S	3/8" ODF					97	3.82	117	4.61	DRAWING - 2		
8	DCH-052F	1/4" SAE	Ø63.5	Ø2.5	78	3.07	--	--	124	4.88	DRAWING - 3		
9	DCH-052S	1/4" ODF					108	4.25	128	5.04	DRAWING - 4		
10	DCH-053F	3/8" SAE					--	--	132	5.20	DRAWING - 3		
11	DCH-053S	3/8" ODF					104.3	4.11	128	5.04	DRAWING - 4		
12	DCH-053R	11/16-16 ORN					--	--	116	4.56	DRAWING - 5		
13	DCH-082F	1/4" SAE			--	--	145	5.71	DRAWING - 3				
14	DCH-082S	1/4" ODF			129	5.08	149	5.87	DRAWING - 4				
15	DCH-083F	3/8" SAE			--	--	153	6.02	DRAWING - 3				
16	DCH-083S	3/8" ODF			129	5.08	149	5.87	DRAWING - 4				
17	DCH-084F	1/2" SAE			--	--	159	6.26	DRAWING - 3				
18	DCH-084S	1/2" ODF			129	5.08	149	5.87	DRAWING - 4				
19	DCH-163F	3/8" SAE	Ø63.5	Ø2.5	99	3.90	--	--	176	6.93	DRAWING - 3		
20	DCH-163S	3/8" ODF					152	5.98	172	6.77	DRAWING - 4		
21	DCH-163R	11/16-16 ORFS					--	--	160	6.30	DRAWING - 5		
22	DCH-164F	1/2" SAE					--	--	182	7.17	DRAWING - 3		
23	DCH-164S	1/2" ODF					152	5.98	172	6.77	DRAWING - 4		
24	DCH-164R	13/16-16 ORFS			--	--	162	6.38	DRAWING - 5				
25	DCH-165F	5/8" SAE			--	--	190	7.48	DRAWING - 3				
26	DCH-165S	5/8" ODF			152	5.98	172	6.77	DRAWING - 4				
27	DCH-165R	1"-14 ORFS			--	--	176	6.93	DRAWING - 5				
28	DCHLD-162R	9/16-18 ORFS			--	--	148	5.82	DRAWING - 5				
29	DCHLD-163F	3/8" SAE			Ø76.2	Ø3	110	4.33	--	--	164	6.45	DRAWING - 3
30	DCHLD-163R	11/16-16 ORFS	--	--					148	5.82	DRAWING - 5		
31	DCHLD-163RL	11/16-16 ORFS	113	4.44					--	--	177	6.97	DRAWING - 12
32	DCHLD-164R	13/16-16 ORFS	--	--			150	5.90	DRAWING - 5				
33	DCHLD-164 ORF	1/2" SAE (Groove)	110	4.33			--	--	176	6.92	DRAWING - 10		
34	DCH-303F	3/8" SAE	Ø76.2	Ø3			190	7.48	--	--	244	9.61	DRAWING - 3
35	DCH-303S	3/8" ODF							220	8.66	240	9.45	DRAWING - 4
36	DCH-303R	11/16-16 ORFS							--	--	228	8.98	DRAWING - 5
37	DCH-303 ORN	3/8" 'O' RING							--	--	244	9.61	DRAWING - 11
38	DCH-304F	1/2" SAE							--	--	250	9.84	DRAWING - 3
39	DCH-304S	1/2" ODF					220	8.66	240	9.45	DRAWING - 4		
40	DCH-304R	13/16-16 ORFS			--	--	230	9.05	DRAWING - 5				
41	DCH-304 ORF	1/2"-SAE (Groove)			--	--	256	10.08	DRAWING - 10				
42	DCH-305F	5/8" SAE			--	--	258	10.16	DRAWING - 3				
43	DCH-305S	5/8" ODF			220	8.66	240	9.45	DRAWING - 4				
44	DCH-305R	1"-14 ORFS			--	--	244	9.61	DRAWING - 5				
45	DCH-305 ORN	5/8" 'O' RING	--	--	250	9.45	DRAWING - 11						
46	DCH-306F	3/4" SAE	Ø88.9	Ø3.5	195	7.68	--	--	264	10.39	DRAWING - 3		
47	DCH-306S	3/4" ODF					220	8.66	240	9.45	DRAWING - 4		
48	DCH-307S*	7/8" ODF					226	8.89	257	10.11	DRAWING - 6		
49	DCH-309S*	1-1/8" ODF					226	8.89	257	10.11	DRAWING - 6		
50	DCH-413F	3/8" SAE					Ø88.9	Ø3.5	198	7.80	--	--	258
51	DCH-413S	3/8" ODF			228	8.98					248	9.76	DRAWING - 4
52	DCH-414 ORF	1/2"-SAE (Groove)			7.40	--					254	10.00	DRAWING - 10
53	DCH-414F	1/2" SAE			--	--					258	10.16	DRAWING - 3
54	DCH-414S	1/2" ODF			228	8.98					248	9.76	DRAWING - 4
55	DCH-415F	5/8" SAE			--	--			266	10.47	DRAWING - 3		
56	DCH-415S	5/8" ODF			228	8.98			248	9.76	DRAWING - 4		
57	DCH-415-4F	5/8" SAE (IN) & 1/2" SAE (OUT)	--	--	262	10.31			DRAWING - 3				
58	DCH-415-4R	1"-14 ORFS (IN) & 13/16-16 ORFS (OUT)	188	7.40	--	--			235	9.25	DRAWING - 5		
59	DCH-416-5R	1"-1/4 ORFS (IN) & 1"-14 ORFS (OUT)	198	7.79	--	--			255	10.03	DRAWING - 5		
60	DCH-417S*	7/8" ODF	145	5.70	176	6.92			207	8.14	DRAWING - 6		
61	DCH-419*	1-1/8" ODF			176	6.92	207	8.14	DRAWING - 6				
62	DCH-757S*	7/8" ODF			350	13.77	381	15	DRAWING - 6				
63	DCH-759S*	1-1/8" ODF	319	12.55	350	13.77	381	15	DRAWING - 6				

- 1) Internal Assembly - Solid Core Type
- 2) Maximum Working Pressure - 45 bar (653 psig)
- 3) Temperature range -40°C to 70°C
- 4) SAE, ORFS & 'O'Ring Type Connection are in Steel, Nickel Plated
- 5) ODF Type Connection is in Steel & Nickel Plated
- 6) *Mark Connection Steel Plated

LIQUID LINE FILTER DRIER DCH SERIES (SOLID CORE TYPE)



Sr No.	Model	Flow Capacity TR @ 1psi ΔP (for kw multiply TR by 3.5)						Water Capacity drops of water									
		R134a	R22	R407C	R410A	R404A	R507	R134a		R22		R407C		R410A		R404A & R507	
								75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F
1	DCH-032F	1.6	1.8	1.6	1.7	1.1	1.1	90	85	90	83	87	80	82	75	94	89
2	DCH-032S	1.8	2.0	1.9	1.9	1.3	1.3	90	85	90	83	87	80	82	75	94	89
3	DCH-033F	2.8	3.1	2.9	2.9	2.0	2.0	90	85	90	83	87	80	82	75	94	89
4	DCH-033S	3.1	3.5	3.2	3.3	2.2	2.2	90	85	90	83	87	80	82	75	94	89
5	DCH-052F	1.7	1.9	1.7	1.8	1.2	1.2	126	119	126	116	122	112	114	104	132	124
6	DCH-052S	2.0	2.2	2.0	2.0	1.4	1.4	126	119	126	116	122	112	114	104	132	124
7	DCH-053F	3.9	4.3	3.9	4.0	2.7	2.7	126	119	126	116	122	112	114	104	132	124
8	DCH-053S	4.6	5.1	4.7	4.8	3.3	3.2	126	119	126	116	122	112	114	104	132	124
9	DCH-082F	1.7	1.9	1.7	1.8	1.2	1.2	250	236	251	231	243	223	227	208	262	248
10	DCH-082S	2.0	2.2	2.0	2.0	1.4	1.4	250	236	251	231	243	223	227	208	262	248
11	DCH-083F	3.8	4.2	3.8	3.9	2.7	2.6	250	236	251	231	243	223	227	208	262	248
12	DCH-083S	4.5	5.0	4.5	4.7	3.2	3.1	250	236	251	231	243	223	227	208	262	248
13	DCH-084F	6.0	6.6	6.1	6.2	4.2	4.1	250	236	251	231	243	223	227	208	262	248
14	DCH-084S	8.4	9.2	8.4	8.7	5.9	5.7	250	236	251	231	243	223	227	208	262	248
15	DCH-085S	12.4	14.4	13.2	13.5	9.2	9.0	429	404	430	405	431	407	432	408	434	409
16	DCH-163F	4.6	5.1	4.6	4.7	3.2	3.1	429	404	430	405	431	407	432	408	434	409
17	DCH-163S	5.4	6.0	5.5	5.6	3.8	3.7	429	404	430	405	431	407	432	408	434	409
18	DCH-164F	7.5	8.3	7.6	7.8	5.3	5.2	429	404	430	405	431	407	432	408	434	409
19	DCH-164S	10.5	11.5	10.5	10.8	7.4	7.2	429	404	430	405	431	407	432	408	434	409
20	DCH-165F	11.0	12.2	11.1	11.4	7.8	7.6	429	404	430	405	431	407	432	408	434	409
21	DCH-165S	11.7	12.8	11.7	12.1	8.2	8.0	429	404	430	405	431	407	432	408	434	409
22	DCH-303F	4.0	4.4	4.1	4.2	2.8	2.8	927	874	930	855	899	826	840	769	970	917
23	DCH-303S	4.6	5.1	4.6	4.8	3.2	3.2	927	874	930	855	899	826	840	769	970	917
24	DCH-304F	11.8	11.9	10.8	11.1	7.6	7.4	927	874	930	855	899	826	840	769	970	917
25	DCH-304S	11.9	13.1	11.9	12.3	8.3	8.1	927	874	930	855	899	826	840	769	970	917
26	DCH-305F	13.0	14.3	13.1	13.4	9.1	8.9	927	874	930	855	899	826	840	769	970	917
27	DCH-305S	15.1	16.6	15.2	15.6	10.6	10.4	927	874	930	855	899	826	840	769	970	917
28	DCH-306F	20.1	22.1	20.2	20.7	14.1	13.8	927	874	930	855	899	826	840	769	970	917
29	DCH-306S	20.0	22.1	20.2	20.7	14.1	13.8	927	874	930	855	899	826	840	769	970	917
30	DCH-307S	21.0	17.1	15.6	16.0	10.9	10.6	927	874	930	855	899	826	840	769	970	917
31	DCH-309S	25.8	28.4	25.9	26.6	18.1	17.7	927	874	930	855	899	826	840	769	970	917
32	DCH-413F	3.9	4.3	3.9	4.0	2.7	2.7	1264	1192	1268	1167	1226	1127	1145	1049	1323	1250
33	DCH-413S	4.4	4.8	4.4	4.5	3.1	3.0	1264	1192	1268	1167	1226	1127	1145	1049	1323	1250
34	DCH-414F	12.2	12.3	11.3	11.6	7.9	7.7	1264	1192	1268	1167	1226	1127	1145	1049	1323	1250
35	DCH-414S	12.3	13.5	12.4	12.7	8.7	8.4	1264	1192	1268	1167	1226	1127	1145	1049	1323	1250
36	DCH-415F	13.7	15.1	13.8	14.2	9.7	9.4	1264	1192	1268	1167	1226	1127	1145	1049	1323	1250
37	DCH-415S	16.0	17.6	16.1	16.5	11.3	11.0	1264	1192	1268	1167	1226	1127	1145	1049	1323	1250
38	DCH-417S	29.7	32.7	29.9	30.7	20.9	20.4	1264	1192	1268	1167	1226	1127	1145	1049	1323	1250
39	DCH-419S	28.3	31.1	28.5	29.2	19.9	19.4	1264	1192	1268	1167	1226	1127	1145	1049	1323	1250
40	DCH-607S	28.0	30.8	28.2	28.9	19.7	19.2	1780	1678	1786	1642	1726	1586	1613	1476	1862	1761
41	DCH-757S	28.5	31.5	28.7	29.5	20.1	19.6	2106	1946	1962	1806	1641	1316	1356	1036	2176	2056
42	DCH-759S	31.4	34.6	31.6	32.4	22.1	21.5	2106	1946	1962	1806	1641	1316	1356	1036	2176	2056

For New Refrigerants Compatibility Please Consult to Dry ALL Technical Team.

All ratings are in accordance with ANSI/AHRI Standard 710-2009

1. Water Capacities are based on the following standard rating conditions:

Water in refrigerant at EPD for:

R-134a/R-407C/R-410A/R-404A/R-507A is 50 ppm,

R-22 is 60 ppm

2. Flow Capacities are based on the following standard rating conditions:

Flow Rate per Ton of Refrigeration at 86°F Liquid & 5.0°F Saturated Vapor for:

R-134a is 3.1 lb/min/ton,

R-22 is 3.0 lb/min/ton

R-407C is 3.0 lb/min/ton,

R-507A is 4.2 lb/min/ton

R-410A is 2.8 lb/min/ton,

R-404A is 4.1 lb/min/ton,

LIQUID LINE FILTER DRIER DCH SERIES (SOLID CORE TYPE)



Filter Drier Volume

DCH Model Series	Shell Volume (L)	Net Volume (L)
3	0.071	0.034
5	0.212	0.065
8	0.28	0.109
16	0.356	0.128
30	0.721	0.267
41		
75	1.65	1.125

Filter-Drier Acid Absorption Capacity

Drier type	Series	Acid capacity in gm at Tan 0.005
DCH (Core Type)	03	1.1
	05	2.5
	08	4.0
	16	5.4
	30	13.1
	41	18.4
	75	36.8

Packaging Data

Filter Drier Type	Model Series	Total Quantity in 1 Master Box
DCH	03	30
	05	30
	08	30
	16	30
	30	10
	41	10
	75	10

Filter Drier Selection Criteria

- Select the appropriate filter drier based on refrigerants and oil compatibility. Then select the filter drier size for the required drying and flow capacity.
- The filter drier drying capacity is rated in drops, determined by the drops of water to be absorbed by the filter drier.

$$\text{The drop of water} = \frac{(\text{Initial PPM of water} - \text{Final PPM of water}) \times \text{kg of refrigerant}}{50}$$

LIQUID LINE FILTER DRIER DCH SERIES (SOLID CORE TYPE)



System input data

- Refrigerant: R134a
- Condensing temperature: 50°C
- Weight of refrigerant: 12 Kg
- Cooling capacity: 5 Ton

$$\text{The drop of water} = \frac{(\text{Initial PPM of water} - \text{Final PPM of water}) \times \text{kg of refrigerant}}{50}$$

$$\text{The drop of water} = \frac{(1050 - 50) \times 12}{50}$$

- Drops of water = 240

Where,

Moisture in the R134a refrigerant at the inlet of the filter drier according to ARI standard 710:86 is 1050 ppm.

Moisture in the R134a refrigerant at the outlet of the filter drier according to ARI standard 710:86 is 50 ppm.

- For calculated water capacity, DCH 08 series is considered the exact model selection. For 5 Ton capacity, DCH – 084F or DCH – 084S model is to be selected as per connection.
- For required drying capacity or liquid capacity, one should always choose a slightly larger filter drier.

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