

**Dry All**<sup>®</sup>

Full Range of HVAC&R Line Products



File No. SA33181



**LIQUID LINE FILTER DRIER  
(DMH SERIES)**

## Introduction

A filter drier in a refrigeration system is used to adsorb system contaminants which include moisture, acids, etc., and provide physical separation to contaminations. The filtration process has become even more crucial with the introduction of HFC refrigerants and POE oils due to their high hygroscopicity. The DMH type filter drier is well suited for the cleanup of the refrigerant.

### Moisture

Water or moisture is always present in refrigeration systems, especially with the use of hygroscopic polyester (POE) lubricants. Moisture is trapped through the air due to improper lubricating oil handling and system evacuation. This moisture may react with refrigerant and cause the formation of acids resulting in the corrosion of metallic parts. Also, the organic acid produced due to lubricant degradation is a significant additional source of acidity in refrigeration systems. Since moisture levels must be kept to a low level to prevent corrosion and acid formation.

### Acids

Although refrigerants are generally stable even at high temperatures, certain conditions can cause reactions leading to the creation of hydrochloric and hydrofluoric acids. These acids typically exist as gases within the system and are highly corrosive. To maintain system safety, the filter drier must perform drying to prevent acid buildup.

### Contaminants

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



### Filter Driers Function

The purpose of a filter drier in a refrigeration system is to remove moisture and filter undesirable contaminants to keep the refrigerant clean.

### Moisture & Acids Removal

The Dry All DMH type filter drier consists of blends of adsorbent. The molecular sieve and activated alumina are used as adsorbents to remove moisture and acids. As per technical standards, the chemical and mechanical properties of the molecular sieve and activated alumina are being tested in the Dry All laboratory. The highly activated molecular sieve and activated alumina hold the maximum moisture and absorb the acids. It ensures that the dry and clean refrigerant circulates through the system. The honeycomb structure of molecular sieves and activated alumina allow the free flow of refrigerant with minimal pressure drop.

### Filtration

The important function of the filter drier is to filter the contaminants and act as a safeguard to the compressor, expansion valve, and other critical parts of HVAC&R systems. Dry All manufacturing a highly efficient filter drier ensuring greater than 99% filtration efficiency.

The series of glass wool provides a large surface area for contaminant filtration while the fabric media provide surface filtration. The DMH type filter drier provides the filtration of up to 20 $\mu$  particle size with 99% efficiency.

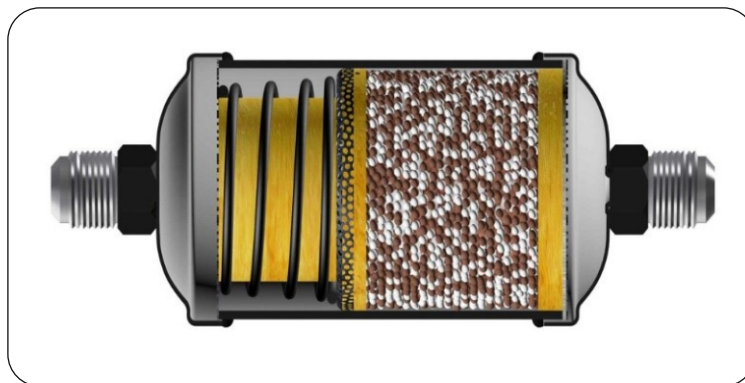
### How Filter Drier Works

A filter drier is an essential component of a refrigeration system and works by removing contaminants, such as moisture, acid, and solid particles, from the refrigerant. The filter drier contains a desiccant material, typically made of activated alumina or molecular sieves, which adsorbs moisture and acid from the refrigerant. Additionally, the filter drier captures and retains solid particles through a mechanical filtration process. Below are the details of how filter drier work functionally.



As refrigerant flows through the filter drier, the desiccant material and filter media work together to remove contaminants, ensuring that the refrigeration system remains clean and free of harmful buildup. A properly functioning filter drier helps to prevent compressor failure, reduce energy consumption, and prolong the life of the system.

Filter driers are usually installed in the liquid line after the liquid receiver. The high temperature and high-pressure liquid refrigerant enter the filter drier. The liquid refrigerant carries moisture, acids, metallic particle, sludge, etc., and the perforated disc at the inlet helps to distribute the refrigerant flow inside the filter drier evenly. Glass wool and non-woven fabric ensure the high level of filtration of contaminations. Molecular sieves and activated alumina loose beads are held between two perforated discs to adsorb moisture and acids.



### Standard Ratings

Liquid-line filter driers shall be rated for water capacity in drops and refrigerant flow capacity at 1.0 psi pressure drops. Dry ALL follows technical standards for testing and rating filter driers. The filter driers are tested for drying 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. The Dry All filter drier water holding capacity is expressed in drops of water. 20 drops equals to 1 gram.

Drop of water = 1 kg of refrigerant (Initial ppm – Final ppm)50 All ratings are in accordance with ANSI/AHRI Standard 710-2009 Water

Capacities are based on the following standard rating conditions:

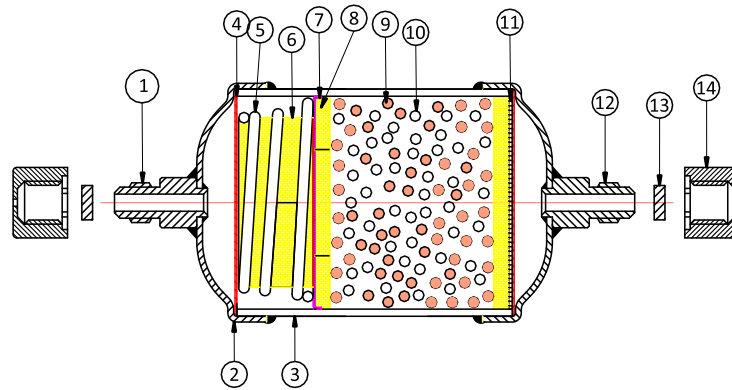
Water in refrigerant at EPD for:

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

## Filter-Drier Internal Structure



- |                                 |                               |                    |
|---------------------------------|-------------------------------|--------------------|
| 1. Inlet                        | 2. Dish                       | 3. Shell           |
| 4. Perforated disk plain fabric | 5. Conical Compression Spring | 6. Glass Wool      |
| 7. Perforated disk Emboss       | 8. Glass Wool (Ring type)     | 9. Molecular Sieve |
| 10. Activated Alumina           | 11. Round Non-Woven           | 12. Outlet         |
| 13. Rubber Button/plug          | 14. Plastic cap.              |                    |

### Features

#### DMH Type

- Compatible with all types of CFC, HCFC, HFO, HFC and HC refrigerants.
- Compatible with mineral oil, and POE lubricants.
- 70% molecular sieve and 30% activated alumina provide high drying capacity.
- Greater than 99% filtration efficiency.
- High water adsorption and acid absorption capacity.
- Available with flare, solder, zoom lock, O-Ring Flare, and Rotolock connection of various sizes.
- Internal and external components i.e., springs, perforated disc, dish end, and tubes are cleaned, degreased, iron phosphate coated, and passivated for rust prevention.

#### Shell

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

## Filtration

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

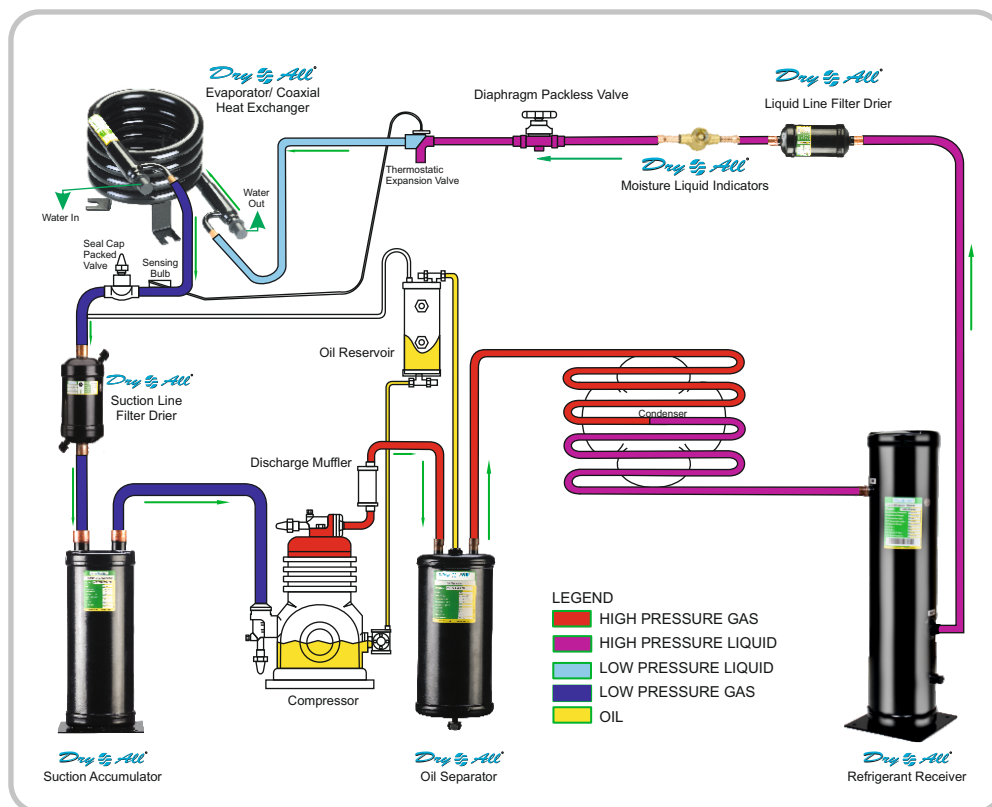
## Specification

- 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 connection are in 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.

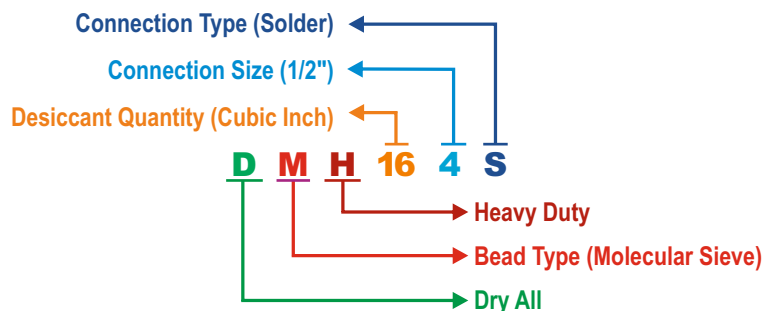
- Dry All filter driers are compatible with almost all the refrigerants available in the market, can install the Dry All filter drier in any HFC, HCFC, HFO, or HC system.
- The High working pressure enables the Dry All filter drier ready for new Refrigerants like R32, R410, etc. Dry All filter driers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



## Certificate/Compliances

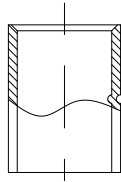
- UL listed File no. SA33181 [UL 207]
- RoHS Compliance [ROHS-3.0 2015/863/EU Directive]
- REACH COMPLIANCE [EC 1907/2006]
- CE Marking [Upto 7/8" ODF connection size CE marking is not required according to article 4, Paragraph 3 of PED 2014/68/EU].

Type	Nomenclature	
Brand	D	Dry All
Desiccant Types	M	Bead Type
	C	Core Type
Vessel Type	H	Heavy Duty
Connection Size (in <sup>3</sup> )	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 <sup>3</sup> )	1.5	1.5 in <sup>3</sup>
	3	3 in <sup>3</sup>
	5	5 in <sup>3</sup>
	8	8 in <sup>3</sup>
	16	16 in <sup>3</sup>
	30	30 in <sup>3</sup>
	41	41 in <sup>3</sup>
Connection Types	S	Solder connection
	F	Flare connection
	ORN	O" ring connection
	R	Rotolock (ORFS) Connection

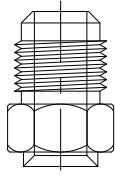


Drawings

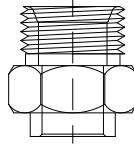
Filter Drier Connections



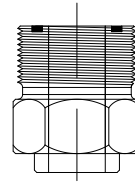
Solder



Flare



O' ring



Rotolock



Zoom Lock

**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



# LIQUID LINE FILTER DRIER (DMH SERIES)



## Dimensional data

SR No.	Description	Connection Inlet/Outlet	A		B		C		D		Refer Drawing No.
			mm Ø	Inch Ø	mm	Inch	mm	Inch	mm	Inch	
1	DMH - 032F	1/4" SAE	42	1.6	67	2.64	--	--	113	4.45	DRAWING - 1
2	DMH - 032F - MXF	1/4" SAE (F/M)	42	1.6	67	2.64	--	--	102	4.00	DRAWING - 9
3	DMHSV - 032F	1/4" SAE	42	1.6	67	2.64	--	--	113	4.61	DRAWING - 2
4	DMH - 032S	1/4" ODF	42	1.6	67	2.64	97	3.82	117	4.45	DRAWING - 8
5	DMHSV - 032S	1/4" ODF	42	1.6	67	2.64	97	3.82	117	4.61	DRAWING - 7
6	DMH - 033F	3/8" SAE	42	1.6	67	2.64	--	--	121	4.76	DRAWING - 1
7	DMH - 033S	3/8" ODF	42	1.6	67	2.64	97	3.82	117	4.61	DRAWING - 2
8	DMH - 052F	1/4" SAE	63.5	2.5	78	3.07	--	--	124	4.88	DRAWING - 3
9	DMH - 052S	1/4" ODF	63.5	2.5	78	3.07	108	4.25	128	5.04	DRAWING - 4
10	DMH - 053F	3/8" SAE	63.5	2.5	78	3.07	--	--	132	5.20	DRAWING - 3
11	DMH - 053S	3/8" ODF	63.5	2.5	78	3.07	108	4.25	128	5.04	DRAWING - 4
12	DMH - 053R	11/16 - 16 ORN	63.5	2.5	78	3.07	--	--	116	4.56	DRAWING - 5
13	DMH - 082F	1/4" SAE	63.5	2.5	99	3.90	--	--	145	5.71	DRAWING - 3
14	DMH - 082S	1/4" ODF	63.5	2.5	99	3.90	129	5.08	149	5.87	DRAWING - 4
15	DMH - 083F	3/8" SAE	63.5	2.5	99	3.90	--	--	153	6.02	DRAWING - 3
16	DMH - 083S	3/8" ODF	63.5	2.5	99	3.90	129	5.08	149	5.87	DRAWING - 4
17	DMH - 084F	1/2" SAE	63.5	2.5	99	3.90	--	--	159	6.26	DRAWING - 3
18	DMH - 084S	1/2" ODF	63.5	2.5	99	3.90	129	5.08	149	5.87	DRAWING - 4
19	DMH - 163F	3/8" SAE	63.5	2.5	122	4.8	--	--	176	6.93	DRAWING - 3
20	DMH - 163S	3/8" ODF	63.5	2.5	122	4.8	152	5.98	172	6.77	DRAWING - 4
21	DMH - 163R	11/16-16 ORFS	63.5	2.5	122	4.8	--	--	160	6.30	DRAWING - 5
22	DMH - 164F	1/2" SAE	63.5	2.5	122	4.8	--	--	182	7.17	DRAWING - 3
23	DMH - 164S	1/2" ODF	63.5	2.5	122	4.8	152	5.98	172	6.77	DRAWING - 4
24	DMH - 164R	13/16-16 ORFS	63.5	2.5	122	4.8	--	--	162	6.38	DRAWING - 5
25	DMH - 165F	5/8" SAE	63.5	2.5	122	4.8	--	--	190	7.48	DRAWING - 3
26	DMH - 165S	5/8" ODF	63.5	2.5	122	4.8	152	5.98	172	6.77	DRAWING - 4

## Dimensional Data (continued)

SR No.	Description	Connection Inlet/Outlet	A		B		C		D		Refer Drawing No.
			mm Ø	Inch Ø	mm	Inch	mm	Inch	mm	Inch	
27	DMH - 165R	1" 14 ORFS	63.5	2.5	122	4.8	--	--	176	6.93	DRAWING - 5
28	DMHLD - 162R	9/16-18 ORFS	76.2	3	110	4.33	--	--	148	5.82	DRAWING - 5
29	DMHLD - 163F	3/8" SAE	76.2	3	110	4.33	--	--	164	6.45	DRAWING - 3
30	DMHLD - 163R	11/16-16ORFS	76.2	3	110	4.33	--	--	148	5.82	DRAWING - 5
31	DMHLD - 163RL	11/16-16ORFS	76.2	3	113	4.44	--	--	177	6.97	DRAWING - 11
32	DMHLD - 164R	13/16-16 ORFS	76.2	3	110	4.33	--	--	150	5.90	DRAWING - 5
33	DMHLD - 164 F	1/2" SAE (Groove)	76.2	3	110	4.33	--	--	176	6.92	DRAWING - 10
34	DMH - 303F	3/8" SAE	76.2	3	190	7.48	--	--	244	9.61	DRAWING - 3
35	DMH - 303S	3/8" ODF	76.2	3	190	7.48	220	8.66	240	9.45	DRAWING - 4
36	DMH - 303R	11/16-16 ORFS	76.2	3	190	7.48	--	--	228	8.98	DRAWING - 5
37	DMH - 303 - ORN	3/8" O RING	76.2	3	190	7.48	--	--	244	9.61	DRAWING - 12
38	DMH - 304F	1/2" SAE	76.2	3	190	7.48	--	--	250	9.84	DRAWING - 3
39	DMH - 304S	1/2" ODF	76.2	3	190	7.48	220	8.66	240	9.45	DRAWING - 4
40	DMH - 304R	13/16-16 ORFS	76.2	3	190	7.48	--	--	230	9.05	DRAWING - 5
41	DMH - 305F	5/8"SAE	76.2	3	190	7.48	--	--	258	10.16	DRAWING - 3
42	DMH - 305S	5/8" ODF	76.2	3	190	7.48	220	8.66	240	9.45	DRAWING - 4
43	DMH - 305R	1"-14 ORFS	76.2	3	190	7.48	--	--	244	9.61	DRAWING - 5
44	DMH - 306F	3/4" SAE	76.2	3	190	7.48	--	--	264	10.39	DRAWING - 3
45	DMH - 306S	3/4" ODF	76.2	3	190	7.48	220	8.66	240	9.45	DRAWING - 4
46	DMH - 307S	7/8" ODF	76.2	3	195	7.68	226	8.89	257	10.11	DRAWING - 6
47	DMH - 309S	1-1/8"ODF	76.2	3	195	7.68	226	8.89	257	10.11	DRAWING - 6

## 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 3.1lb/min/ton,  
 R-407C is 3.0 lb/min/ton,  
 R-410A is 2.8 lb/min/ton,  
 R-404A is 4.1lb/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 under the standard AHRI 710 to meets the requirements of Underwriters' Laboratories, Inc., & Standard 207, “Refrigerant Containing Components and Accessories, Non-electrical.”

**Dimensional Data (continued)**

SR No.	Description	Connection Inlet/Outlet	A		B		C		D		Refer Drawing No.
			mm Ø	Inch Ø	mm	Inch	mm	Inch	mm	Inch	
48	DMH - 412 ORN	1/4" O RING	88.9	3.5	253.6	9.98	--	--	288	11.33	DRAWING - 12
49	DMH - 413F	3/8" SAE	88.9	3.5	198	7.80	--	--	258	10.15	DRAWING - 3
50	DMH - 413S	3/8" ODF	88.9	3.5	198	7.80	228	8.98	248	9.76	DRAWING - 4
51	DMH - 414F	1/2" SAE	88.9	3.5	198	7.79	--	--	258	10.16	DRAWING - 3
52	DMH - 414S	1/2" ODF	88.9	3.5	198	7.79	228	8.98	248	9.76	DRAWING - 4
53	DMH - 415F	5/8" SAE	88.9	3.5	198	7.79	--	--	266	10.47	DRAWING - 3
54	DMH - 415S	5/8" ODF	88.9	3.5	198	7.79	228	8.98	248	9.76	DRAWING - 4
55	DMH - 415R	1-14 ORFS	88.9	3.5	198	7.79	--	--	252	9.92	DRAWING - 5
56	DMH - 415 - 4F	5/8"SAE(IN) & 1/2 SAE (OUT)	88.9	3.5	198	7.79	--	--	262	10.31	DRAWING - 3
57	DMH - 415 - 4R	1"-14 ORFS (IN) & 13/16-16 ORFS (OUT)	88.9	3.5	188	7.4	--	--	235	9.25	DRAWING - 5
58	DMH - 416 - 5R	1"-1/4 ORFS (IN)1"-14 ORFS (OUT)	88.9	3.5	198	7.79	--	--	255	10.03	DRAWING - 5
59	DMH - 417S*	7/8" ODF	88.9	3.5	198	7.79	228	8.98	272	10.71	DRAWING - 6
60	DMH - 419S*	1-1/8" ODF	88.9	3.5	198	7.79	228	8.98	282	11.10	DRAWING - 6
61	DMH - 757S*	7/8" ODF	88.9	3.5	319	12.55	350	13.77	381	15	DRAWING - 6
62	DMH - 759S*	1-1/8"ODF	88.9	3.5	319	12.55	350	13.77	381	15	DRAWING - 6

**Filter-Drier Liquid/Flow and Drying Capacity**

SR No.	Description	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	DMH - 032F	1.6	1.75	1.6	1.6	1.1	1.09	67	64	66	64	67	61	65	60	69	66
2	DMH - 032MFF	1.6	1.75	1.6	1.6	1.1	1.09	67	64	66	64	67	61	65	60	60	66
3	DMHSV - 032F	1.6	1.75	1.6	1.6	1.1	1.09	67	64	66	64	67	61	65	60	60	66
4	DMH - 032S	2.0	2.15	2.0	2.0	1.4	1.34	67	64	66	64	67	61	65	60	60	66
5	DMHSV - 032S	2.0	2.15	2.0	2.0	1.4	1.34	67	64	66	64	67	61	65	60	60	66
6	DMH - 033F	4.4	5.06	4.6	4.8	3.2	3.15	67	64	66	64	67	61	65	60	60	66
7	DMH - 033S	4.5	4.95	4.5	4.6	3.2	3.09	67	64	66	64	67	61	65	60	60	66
8	DMH - 052F	1.8	1.94	1.8	1.8	1.2	1.21	121	110	119	110	119	106	116	104	123	115
9	DMH - 052S	2.2	2.39	2.2	2.2	1.5	1.49	121	110	119	110	119	106	116	104	123	115
10	DMH - 053F	4.1	4.50	4.11	4.22	2.87	2.80	121	110	119	110	119	106	116	104	123	115
11	DMH - 053S	4.1	5.37	4.91	5.04	3.43	3.34	121	110	119	110	119	106	116	104	123	115
12	DMH - 053R	4.1	4.5	4.91	5.04	3.43	3.34	121	110	119	110	119	106	116	104	123	115
13	DMH - 082F	1.6	1.78	1.6	1.7	1.1	1.11	243	225	239	225	241	215	234	211	249	235
14	DMH - 082S	2.0	2.20	2.0	2.1	1.4	1.37	243	225	239	225	241	215	234	211	249	235
15	DMH - 083F	4.6	5.05	4.6	4.7	3.2	3.15	243	225	239	225	241	215	234	211	249	235
16	DMH - 083S	4.7	5.43	5.0	5.1	3.5	3.38	243	225	239	225	241	215	234	211	249	235
17	DMH - 084F	6.7	7.46	6.8	7.0	4.8	4.65	243	225	239	225	241	215	234	211	249	235
18	DMH - 084S	8.7	9.79	8.9	9.2	6.2	6.10	243	225	239	225	241	215	234	211	249	235
19	DMH - 163F	4.8	5.26	4.8	4.9	3.4	3.28	370	335	364	335	366	298	384	292	378	351
20	DMH - 163S	4.9	5.62	5.1	5.3	3.6	3.50	370	335	364	335	366	298	384	292	378	351
21	DMH - 163R	4.9	5.62	5.1	5.3	3.6	3.50	370	335	364	335	366	298	384	292	378	351
22	DMH - 164F	6.9	7.73	7.1	7.3	4.9	4.81	370	335	364	335	366	298	384	292	378	351
23	DMH - 164S	9.6	10.87	9.9	10.2	6.9	6.77	370	335	364	335	366	298	384	292	378	351
23	DMH - 164R	9.6	10.87	9.9	10.2	6.9	6.77	370	335	364	335	366	298	384	292	378	351
24	DMH - 165F	12.5	11.9	10.8	11.13	7.57	7.39	370	335	364	335	366	298	384	292	378	351
25	DMH - 165S	14.2	15.66	14.3	14.7	10.0	9.76	370	335	364	335	366	298	384	292	378	351
26	DMH - 165R	14.2	15.66	14.3	14.7	10.0	9.76	370	335	364	335	366	298	384	292	378	351
27	DMH - 167S	18.8	21.39	19.5	20.1	13.7	13.33	370	335	364	335	366	298	384	292	378	351

For new refrigerants compatibility please consult to Dry All technical team.

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

Water in refrigerant at EPD for:

R134A/R-407C/R-410A/R-404A/R-507A is 50 ppm,

R22 is 60 ppm.

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

Flow Capacities are based on the following standard rating conditions:

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

## LIQUID LINE FILTER DRIER (DMH SERIES)



R134A is 3.1 lb/min/ton,  
 R407C is 3.0 lb/min/ton,  
 R410A is 2.8 lb/min/ton,  
 R404A is 4.1 lb/min/ton,  
 R507A is 4.2 lb/min/ton,  
 R22 is 3.0 lb/min/ton.

### Filter - Drier Liquid/Flow and Drying Capacity (continued)

SR No.	Description	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
28	DMH - 303F	4.2	4.84	4.4	4.5	3.1	3.01	831	766	816	766	822	731	801	719	849	802
29	DMH - 303S	4.7	5.58	5.1	5.2	3.6	3.47	831	766	816	766	822	731	801	719	849	802
30	DMH - 303R	4.7	5.58	5.1	5.2	3.6	3.47	831	766	816	766	822	731	801	719	849	802
31	DMH - 303 - ORN	4.7	5.58	5.1	5.2	3.6	3.47	831	766	816	766	822	731	801	719	849	802
32	DMH - 304F	9.5	8.00	7.3	7.5	5.1	4.98	831	766	816	766	822	731	801	719	849	802
33	DMH - 304S	10.4	11.47	10.5	10.8	7.3	7.15	831	766	816	766	822	731	801	719	849	802
34	DMH - 304R	10.4	11.47	10.5	10.8	7.3	7.15	831	766	816	766	822	731	801	719	849	802
35	DMH - 305F	11.8	12.96	11.8	12.2	8.3	8.07	831	766	816	766	822	731	801	719	849	802
36	DMH - 305S	12.3	13.63	12.5	12.8	8.7	8.49	831	766	816	766	822	731	801	719	849	802
37	DMH - 305R	12.3	13.63	12.5	12.8	8.7	8.49	831	766	816	766	822	731	801	719	849	802
38	DMH - 306F	15.4	17.12	15.7	16.1	10.9	10.67	831	766	816	766	822	731	801	719	849	802
39	DMH - 306S	18.0	20.00	18.3	18.8	12.8	12.46	831	766	816	766	822	731	801	719	849	802
40	DMH - 307S	18.6	20.52	18.8	19.3	13.1	12.79	831	766	816	766	822	731	801	719	849	802
41	DMH - 309S	24.34	32.86	30.00	30.86	21.06	20.54	831	766	816	766	822	731	801	719	849	802
42	DMH - 413F	4.78	5.26	4.81	4.94	3.36	3.28	914	833	898	833	904	796	880	782	934	872
43	DMH - 413S	4.91	5.62	5.14	5.28	3.59	3.50	914	833	898	833	904	796	880	782	934	872
44	DMH - 414F	9.46	8.00	7.31	7.51	5.11	4.98	914	833	898	833	904	796	880	782	934	872
45	DMH - 414S	10.41	11.47	10.48	10.77	7.32	7.15	914	833	898	833	904	796	880	782	934	872
46	DMH - 415F	11.76	12.96	11.85	12.16	8.27	8.07	914	833	898	833	904	796	880	782	934	872
47	DMH - 415S	12.34	13.63	12.46	12.80	8.70	8.49	914	833	898	833	904	796	880	782	934	872

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:

R134A/R-407C/R-410A/R-404A/R-507A is 50 ppm,

R22 is 60 ppm.

Flow Capacities are based on the following standard rating conditions:

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

R134A is 3.1 lb/min/ton,  
 R407C is 3.0 lb/min/ton,  
 R410A is 2.8 lb/min/ton,  
 R404A is 4.1 lb/min/ton,  
 R507A is 4.2 lb/min/ton,  
 R22 is 3.0 lb/min/ton.

## Filter - Drier Liquid/Flow and Drying Capacity (continued)

SR No.	Description	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
48	DMH - 415R	12.2	12.96	13	13.6	8.8	8.07	914	833	898	833	904	796	880	782	934	872
49	DMH - 415 - 4F	10.8	12.96	11.8	11.5	7.8	8.07	914	833	898	833	904	796	880	782	934	872
50	DMH - 415 - 4R	10.8	12.96	11.5	11.5	7.9	8.07	914	833	898	833	904	796	880	782	934	872
51	DMH - 416 - 5R	12.4	13.8	13.2	13.8	9	9	914	833	898	833	904	796	880	782	934	872
52	DMH - 417S	20.5	20.52	21.8	22.5	14.9	12.79	914	833	898	833	904	796	880	782	934	872
53	DMH - 419S	27.8	32.86	29.8	30.5	20.5	20.54	914	877	898	833	904	796	880	782	934	872
54	DMH - 757S	23.4	26.4	23.8	25.7	17.1	16.4	2214	2072	2194	1905	1855	1496	1490	1140	2068	2072
55	DMH - 759S	26.8	32.0	29.1	30	20.5	20	2214	2072	2194	1905	1855	1496	1490	1140	2068	2072

For new refrigerants compatibility please consult to Dry All technical team.  
 All ratings are in accordance with ANSI/AHRI Standard 710-2009

- Water Capacities are based on the following standard rating conditions:  
 Water in refrigerant at EPD for:  
 R134A/R-407C/R-410A/R-404A/R-507A is 50 ppm,  
 R22 is 60 ppm.

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:

R134A is 3.1 lb/min/ton,  
 R407C is 3.0 lb/min/ton,  
 R410A is 2.8 lb/min/ton,  
 R404A is 4.1 lb/min/ton,  
 R507A is 4.2 lb/min/ton,  
 R22 is 3.0 lb/min/ton.

**Filter Drier Volume**

Model Series	Shell volume (L)	Net volume (L)
3	0.071	0.043
5	0.212	0.115
8	0.28	0.167
16	0.356	0.204
30	0.721	0.48
75	1.65	1.125

**Filter-Drier Acid Absorption Capacity**

Sr. No	Drier Type	Series	Weight of Activated Alumina	Acid Capacity in gm at Tan 0.005
1	DMH (Bead type)	03	5	0.60
2		05	9	1.08
3		08	16	1.92
4		16	22	2.65
5		30	52	6.2
6		41	66	7.92
7		75	180	21.80

**Packaging Data:**

Filter Drier Type	Model Series	Total Quantity in 1 Master Box
DMH	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.

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

**System input data:** 50

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

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

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, DMH 08 series is considered the exact model selection. For 5 Ton capacity, DMH -084F or DMH - 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.



Manufactured by:



Full Range of HVAC&R Line Products

**SAFE A&T Technology Private Limited**

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