Introduction to Filter-Driers

particulate. The alternate design (always used in large systems) is a molded core made with a specific desiccant formulation. The desiccants are sized and bonded in such a way that the useable shape provides the filtration. The large particles are caught on the surface of the core and the smaller solids are captured as the refrigerant channels through the desiccant core.

Steel vs. Copper

The major differences in using steel vs. copper filter-driers are the system sizes and applications. Copper filter-driers are normally used in 5 ton and smaller, less complex applications, including systems with less pressure fluctuations and lower vibration tendencies. Some smaller systems do not require high filtration capabilities; however, some of the smaller systems using the new refrigerants will require better filtration. In order to meet these requirements, a molded core construction and filter-driers with additional fibrous media and screen should be considered. Also, copper is typically the most economical option for smaller systems. Because copper driers are used for smaller applications, the refrigerant charge required will generally be smaller than in the steel filter-drier.

Information regarding operating pressure is required to adequately size the wall thickness of the filter-drier to attain the ultimate burst pressure, for both copper and steel. In accordance with Underwriters Laboratories (UL), the burst pressure is rated as five times the design working pressure of the system, or three times the design working pressure of the system when evaluated using the fatigue stress test outlined in UL 207. Typically, for copper filter-driers, the design working pressure can be correlated to tube diameter and wall thickness to meet specific UL specifications.

Copper Service Filter-Driers

Parker's copper service filter-driers adsorb moisture and provide filtration to systems in the field. The features of the copper service filter-driers are provided below.

Applications

- Air conditioning, heat pump, and small refrigeration systems

Features and Benefits

- Made in the USA
- Worldwide OEM acceptance and usage
- All copper construction for corrosion resistance and simplified brazing
- 100% molecular sieve
- Compatible with commercially available refrigerants and lubricants
- UL Recognized SMGT2/SMGT8-SA1756

MMS-80
Working psi: 700
MMS-100
Working psi: 500

MMS-200
Working psi: 700

712
Working psi: 500

319F
Working psi: 750

619/620
Working psi: 750

621
Working psi: 750

1638F (Formerly CO73S)
Working psi: 750

Note: For models 319F and 1638F, the "F" represents UL fatigue qualification, not flare fittings.

Copper Service Filter-Driers

Specifications

U.L. Model No.	Part No.	Molecular Sieve (wt.)	Description	MRP		Tube Diameter		Overall Length		Inlet Tube Size (Inches)		Outlet Tube Size (Inches)	
				psi	bar	Inches	mm	Inches	mm	OD	ID	OD	ID
MMS-80	058070-01	10g	3/4" Non-directional (Not for Bi-Flow applications)	700	48.3	0.75	19	7.24	184	1/4	3/16	1/4	3/16
MMS-100	058198-01	10g	3/4" directional	500	34.5	0.75	19	7.24	184	1/4	3/16	1/4	3/16
MMS-200	032134-01	20g	1" directional with 3 step down fitting sizes	700	48.3	1.00	25	10.07	256	1/4	3/16	1/4	3/16
										5/16	1/4	5/16	1/4
										3/8	5/16	3/8	5/16
712	032092-01	10g	3/4" directional	500	34.5	0.75	19	7.31	186	1/4	3/16	—	.089 - .092 cap. tube
319F	032144-01	30g	1-3/16" directional	750	51.7	1.19	30	8.63	219	5/16	1/4	—	.127 - .130 cap. tube
619	032142-01	10g	3/4" w/access valve			0.75	19	7.98	203	1/4	3/16	—	.089 - .092 cap. tube
620	032133-02	20g	1" w/access valve			1.00	25	8.54	217	5/16	1/4	—	.127 - .130 cap. tube
621	032143-01	20g	1" w/double inlet			1.00	25	7.87	200	5/16	1/4	—	.127 - .130 cap. tube
1638F (Formerly CO73S)	032145-00	28g	1-5/8" directional			1.63	41	4.38	111	—	3/8	—	3/8

U.L. Model No.	Part No.	Recommended Tonnages / kW							
		R-134a		R-404A, R-502, R-507		R-22		R-410A	
		Tons	kW	Tons	kW	Tons	kW	Tons	kW
MMS-80	058070-01	1/3	1.17	1/4	0.91	1/2	1.76	1/2	1.80
MMS-100	058198-01	1/3	1.17	1/4	0.91	1/2	1.76	1/2	1.80
MMS-200	032134-01	3/4	2.64	1/2	2.05	1	3.52	1	3.60
712	032092-01	1/3	1.17	1/4	0.91	1/2	1.76	1/2	1.80
319F	032144-01	1	3.52	3/4	2.73	2	7.03	2	7.20
619	032142-01	1/3	1.17	1/4	0.91	1/2	1.76	1/2	1.80
620	032133-02	1	3.52	3/4	2.73	2	7.03	2	7.20
621	032143-01	1	3.52	3/4	2.73	2	7.03	2	7.20
1638F (Formerly CO73S)	032145-00	4	14.1	3	10.94	4	14.1	4	14.41

Water Capacity In Drops (Grams*) at AHRI-710 Conditions

U.L. Model No.	Part No.	Water Capacity in Drops									
		R-12		R-22		R-134a		R-401A, R-401B		R-402A, R-402B	
		75°F (24°C)	125°F (52°C)	75°F (24°C)	125°F (52°C)	75°F (24°C)	125°F (52°C)	75°F (24°C)	125°F (52°C)	75°F (24°C)	125°F (52°C)
MMS-80	058070-01	33	30	29	27	32	31	32	30	33	30
MMS-100	058198-01	33	30	29	27	32	31	32	30	33	30
MMS-200	032134-01	66	61	59	54	65	62	65	60	66	61
712	032092-01	33	30	29	27	32	31	32	30	33	30
319F	032144-01	99	91	89	82	97	93	97	90	99	91
619	032142-01	33	30	29	27	32	31	32	30	33	30
620	032133-02	66	61	59	54	65	62	65	60	66	61
621	032143-01	66	61	59	54	65	62	65	60	66	61
1638F (Formerly CO73S)	032145-00	92	85	83	76	91	86	91	84	92	85

U.L. Model No.	Part No.	Water Capacity in Drops							
		R-404A, R-507		R-407C		R-410A		R-502	
		75°F (24°C)	125°F (52°C)	75°F (24°C)	125°F (52°C)	75°F (24°C)	125°F (52°C)	75°F (24°C)	125°F (52°C)
MMS-80	058070-01	32	30	26	23	19	17	30	28
MMS-100	058198-01	32	30	26	23	19	17	30	28
MMS-200	032134-01	65	61	52	47	39	34	60	57
712	032092-01	32	30	26	23	19	17	30	28
319F	032144-01	98	91	78	70	59	52	91	85
619	032142-01	32	30	26	23	19	17	30	28
620	032133-02	65	61	52	47	39	34	60	57
621	032143-01	65	61	52	47	39	34	60	57
1638F (Formerly CO73S)	032145-00	91	85	73	66	55	48	85	80

*** 20 Drops = 1 Gram = 1 cc**