

Suction Filter — SEALED TYPE

With the Optional Relief Feature



Offers the following benefits:

- **Protects the compressor from dirt**
- **A relief device opens if the filter plugs**
- **Suitable for use with all brazing alloys**
- **Full flow design for low pressure drop**
- **Maximum corrosion resistance**
- **Complete line of sizes**

Sporlan offers an exclusive concept in Suction Filter design — a filter with an optional relief feature. When flow is in **one direction**, the bypass relief feature is active. If the pressure drop across the element becomes excessive, the bypass relief will open slightly to maintain sufficient gas flow and assure proper cooling of the hermetic motor.

When the Suction Filter is installed with flow in the **opposite direction**, the bypass relief feature is inactive and will never open, regardless of the increase in pressure drop.

Compressor manufacturers have found that system contaminants such as metal chips, foreign particles, oxides, etc. can cause motor burnouts. This material is carried through the suction line and becomes imbedded in the motor windings. The natural flexing of these windings during start up

causes these particles to scrape the motor insulation resulting in motor burnout.

The solution to this major problem is adequate filtration just ahead of the compressor. The filter will remove solid contaminants in the piping following installation. The filtering media used in the Sporlan Suction Filter has sufficient area and depth to provide excellent filtration, and still keeps the pressure drop to a minimum.

The "-T" in the type number indicates that these models are equipped with an **access valve** to permit pressure drop readings. Checking pressure drop with the access valve can only be performed when the suction filter is installed with the bypass feature inactive.

SUCTION FILTER – SPECIFICATIONS

TYPE NUMBER		CONNECTIONS Inches	FILTER AREA Square Inches	DIMENSIONS Inches			SHIPPING WEIGHT Lbs.
WITHOUT Access Valve	WITH Access Valve			OVERALL LENGTH	SOCKET DEPTH	SHELL DIAMETER	
Types WITH the Optional Relief Feature							
SF-283-F	-	3/8 SAE	28	8.78	-	3.00	2-1/4
-	SF-285-T	5/8 ODF		8.34	0.62		
-	SF-286-T	3/4 ODF		8.79	0.69		
-	SF-287-T	7/8 ODF		8.93	0.75		
-	SF-289-T	1-1/8 ODF		9.51	0.91		
-	SF-489-T	1-1/8 ODF	48	12.42	0.91	3	
-	SF-4811-T	1-3/8 ODF		13.10	0.97		
-	SF-4813-T	1-5/8 ODF		13.44	1.09		
Types WITHOUT the Optional Relief Feature							
SF-114	-	1/2 ODF	11	4.36	0.50	2.00	3/4
SF-114F	-	1/2 SAE		5.25	-		
SF-115	-	5/8 ODF		4.60	0.62		
SF-115F	-	5/8 SAE		5.56	-		
-	SF-6417-T	2-1/8 ODF	388	10.94	1.24	4.75	7-1/2
-	SF-6421-T	2-5/8 ODF		10.94	1.38		

UL and ULc Listed - Guide - SMGT-File No. SA-1756A & B. M.R.P. for SF-11, SF-28 and SF-48 models is 400 psig. M.R.P. for SF-64 models is 500 psig.

However, on heat pump applications or commercial installations using hot gas defrost, it is recommended that it be installed with the bypass inactive.

HERMETIC MOTOR BURNOUT — After a hermetic motor burnout, a system should be cleaned using a Catch-All Suction Line Filter-Drier installed in the suction line directly ahead of the compressor. The Catch-All will remove acid and moisture which are formed during the burnout as well as solid contaminants.

In some instances the motor burnout is mild and only a small amount of acid is formed. This can be determined by testing the oil from the burned out compressor with the Sporlan Acid Test Kit. If the acidity of the oil is within the acceptable limits and clean, then a "mild burnout" has occurred. Under these conditions, an oversized Catch-All should be installed in the liquid line to remove any residual moisture and acid present, and a **Sporlan Suction Filter** can be used to protect the new compressor.

CORROSION RESISTANCE — The condensation and moisture conditions of the suction line make external corrosion resistance an important consideration. The Sporlan Suction Filter is protected with an epoxy coating, offering excellent corrosion resistance. Sporlan uses copper fittings for ODF solder and nickel plated steel for the SAE flare connections.

DEHYDRATION — All Sporlan Suction Filters are dehydrated immediately after assembly and then sealed to prevent any moisture pickup. The service engineer is therefore assured of a completely dry Suction Filter when installed.

INSTALLATION — The Sporlan Suction Filter may be installed with any brazing alloy including, Easy-Flo, Sil-Fos, Phos-Copper or Sta-Brite. Unlike filters with brass fittings, the Sporlan Suction Filter can be installed using Sil-Fos or Phos-Copper, without flux. The Sporlan design uses internal heat insulators which prevent any possible damage to the filter element during brazing. Naturally, it is good practice to cover the shell with a wet rag and direct the flame away from the filter shell to prevent damage to the epoxy coating.

For maximum protection, the filter should be installed as close to the compressor as practical.

The Suction Filter can be installed in either the horizontal or vertical position. If the vertical installation is used, the flow direction should be down for optimum oil return. The flow velocity through the various sections of the Suction Filter is the same as the velocity in the suction line. Therefore, the Suction Filter will not act as an oil trap, and proper oil return will be obtained.

WITHOUT BYPASS RELIEF FEATURE — The SF-110 Series and the SF-6400 Series Suction Filters are supplied without the bypass relief feature. Their specifications are listed at the bottom of the table on page 2, and their rating and selection recommendations are shown in the table below.

Except for not offering the bypass feature, the SF-110 and SF-6400 Series are identical in construction, and offer the same features as the other Suction Filters. The SF-6400 Series Suction Filters can be mounted using a standard A-685 Mounting Bracket.

SELECTION RECOMMENDATIONS

TYPE NUMBER		CONNECTIONS Inches	* FLOW CAPACITY IN TONS EVAPORATOR TEMPERATURE																NOMINAL SYSTEM HORSEPOWER			
WITHOUT Access Valve	WITH Access Valve		40°F				20°F				0°F				- 20°F						- 40°F	
			PRESSURE DROP																			
			2	3	1-1/2	2	1	1-1/2	1/2	1	1/2	2	3	1-1/2	2	1	1-1/2	1/2	1	1/2		
REFRIGERANT																REFRIGERANT						
		12	134a	22	407C	12	134a	22	404A	12	134a	22	404A	12	22	404A	22	404A	22 407C	12, 134a, 404A, 502, 507		
SF-114	—	1/2 ODF	1.3	1.5	2.4	2.4	0.9	1.0	1.5	1.5	0.6	0.6	1.1	1.0	0.3	0.7	0.6	0.3	0.3	1	1/2	
SF-114F	—	1/2 SAE	1.2	1.3	2.1	2.1	0.8	0.9	1.4	1.3	0.5	0.5	0.9	0.9	0.3	0.6	0.5	0.3	0.3	1	1/2	
SF-115	—	5/8 ODF	2.3	2.6	4.1	4.1	1.6	1.7	2.7	2.6	1.0	1.1	1.8	1.7	0.5	1.2	1.1	0.6	0.6	2	1	
SF-115-F	—	5/8 SAE	2.1	2.3	3.7	3.7	1.4	1.5	2.4	2.3	0.9	0.9	1.6	1.5	0.5	1.0	0.9	0.5	0.5	2	1	
SF-283F	—	3/8 SAE	1.1	1.2	2.1	2.0	0.7	0.8	1.3	1.2	0.4	0.5	0.9	0.8	0.3	0.4	0.5	0.3	0.3	1	1/2	
—	SF-285-T	5/8 ODF	3.5	4.0	6.4	6.2	2.5	2.7	4.0	3.9	1.6	1.7	2.9	2.7	0.9	1.8	1.7	1.0	0.9	4	1-1/2	
—	SF-286-T	3/4 ODF	4.3	5.1	8.6	8.1	3.1	3.4	5.0	5.1	2.0	2.1	3.6	3.4	1.1	2.2	2.1	1.2	1.1	5	1-1/2	
—	SF-287-T	7/8 ODF	6.3	7.0	11.1	11.3	4.4	4.6	7.2	7.0	2.7	2.8	5.1	4.6	1.4	3.1	2.9	1.5	1.5	7-1/2	3	
—	SF-289-T	1-1/8 ODF	8.2	9.2	14.8	14.6	5.7	6.0	9.4	9.2	3.5	3.7	6.6	6.1	1.8	4.0	3.8	2.1	2.0	7-1/2	5	
—	SF-489-T	1-1/8 ODF	8.7	9.9	16.0	15.7	6.1	6.5	10.0	9.8	3.7	3.9	7.0	6.5	1.9	4.3	4.1	2.2	2.1	10	5	
—	SF-4811-T	1-3/8 ODF	9.9	11.2	18.4	18.0	6.8	7.3	11.4	11.2	4.2	4.4	7.9	7.4	2.2	4.8	4.6	2.5	2.4	12	5	
—	SF-4813-T	1-5/8 ODF	11.7	13.3	21.6	21.3	8.1	8.7	13.5	13.3	4.9	5.2	9.4	8.7	2.6	5.6	5.4	2.9	2.8	15	7	
—	SF-6417-T	2-1/8 ODF	46.7	50.9	91.1	88.9	28.7	31.0	56.9	52.6	15.8	16.4	35.4	31.8	7.2	20.3	17.8	9.3	7.9	55	20	
—	SF-6421-T	2-5/8 ODF	50.5	62.9	119.0	109.0	36.8	38.6	70.2	64.6	20.2	20.6	44.0	39.4	9.1	25.6	22.3	11.8	10.0	60	30	

* Refrigerant 502 flow capacity is 80% of the values shown for Refrigerant 22, when expressed in TONS. When expressed in horsepower, the proper refrigerant selection is the same as for R-12.

Use R-404A flow ratings for R-507. Use R-502 horsepower recommendations for R-402A & B and R-408A. Use R-12 horsepower recommendations for R-401A & B and R-409A. Ratings are in accordance with ARI Standard 730.