



LIQUID LINE FILTER-DRIERS



SUCTION LINE FILTER-DRIERS



SELECTION RECOMMENDATIONS

*for CLEAN-UP AFTER HERMETIC MOTOR BURNOUT
and for NEW FIELD INSTALLATIONS*

SELECTION GUIDE

for CLEAN-UP AFTER HERMETIC MOTOR BURNOUT and for FIELD INSTALLATIONS

AIR CONDITIONING SYSTEMS



SYSTEM SIZE HORSEPOWER	LINE SIZE	SUCTION LINE SELECTION		LINE SIZE	LIQUID LINE SELECTION
		FOR RSF MODELS, CORE CHANGE, THEN RPE-48-BD ELEMENT			
		REFRIGERANTS			REFRIGERANTS
		12 & 134a	22, 407C & 410A*		
1/4 – 1/3	3/8	C-083-S-T-HH	C-083-S-T-HH	CAP	C-032-CAP
	1/2	C-164-S-T-HH	C-164-S-T-HH		
1/2 – 1	1/2	C-164-S-T-HH	C-164-S-T-HH	1/4	C-052-S
	5/8	C-165-S-T-HH	C-165-S-T-HH		
	3/4	C-166-S-T-HH	C-166-S-T-HH		
1-1/2 – 2-1/2	5/8	C-305-S-T-HH	C-165-S-T-HH	3/8	C-083-S
	3/4	C-306-S-T-HH	C-166-S-T-HH		
	7/8	C-307-S-T-HH	C-167-S-T-HH		
3 – 4	3/4	C-306-S-T-HH	C-306-S-T-HH	3/8	C-163-S
	7/8	C-437-S-T-HH	C-307-S-T-HH		
	1-1/8	C-439-S-T-HH	C-309-S-T-HH		
5 – 6	7/8	C-437-S-T-HH	C-307-S-T-HH	1/2	C-164-S
	1-1/8	C-439-S-T-HH	C-309-S-T-HH		
	1-3/8	C-4311-S-T-HH	C-4311-S-T-HH		
	1-5/8	C-4313-S-T-HH	C-4313-S-T-HH		
7-1/2 – 9	7/8	RSF-487-T	C-437-S-T-HH	1/2	C-304-S
	1-1/8	RSF-489-T	C-439-S-T-HH		
	1-3/8	RSF-4811-T	C-4311-S-T-HH		
	1-5/8	RSF-4813-T	C-4313-S-T-HH		
10 – 12	7/8	—	RSF-487-T	1/2	C-414-S
	1-1/8	RSF-489-T	RSF-489-T		
	1-3/8	RSF-4811-T	RSF-4811-T		
	1-5/8	RSF-4813-T	RSF-4813-T		
13 – 18	1-1/8	RSF-489-T	RSF-489-T	5/8	C-415-S
	1-3/8	RSF-4811-T	RSF-4811-T		
	1-5/8	RSF-4813-T	RSF-4813-T		
	2-1/8	RSF-4817-T	RSF-4817-T		

Note: Use horsepower ratings for approximate air conditioning tonnage ratings.

REFRIGERATION SYSTEMS

SYSTEM SIZE HORSEPOWER	LINE SIZE	SUCTION LINE SELECTION			LINE SIZE	LIQUID LINE SELECTION
		FOR RSF MODELS, CORE CHANGE, THEN RPE-48-BD ELEMENT				
		REFRIGERANTS				REFRIGERANTS
		12 & 134a	22	502, 404A & 507		
1/4 – 1/3	3/8	C-163-S-T-HH	C-163-S-T-HH	C-163-S-T-HH	3/16	C-032-CAP
	1/2	C-164-S-T-HH	C-164-S-T-HH	C-164-S-T-HH		
1/2 – 1	5/8	C-305-S-T-HH	C-305-S-T-HH	C-305-S-T-HH	1/4	C-082(-S)
	3/4	C-306-S-T-HH	C-306-S-T-HH	C-306-S-T-HH		
	7/8	C-307-S-T-HH	C-307-S-T-HH	C-307-S-T-HH		
1-1/2 – 2-1/2	5/8	C-305-S-T-HH	C-305-S-T-HH	C-305-S-T-HH	3/8	C-163(-S)
	7/8	C-307-S-T-HH	C-307-S-T-HH	C-307-S-T-HH		
	1-1/8	C-309-S-T-HH	C-309-S-T-HH	C-309-S-T-HH		
3 – 4	7/8	C-437-S-T-HH	C-307-S-T-HH	C-437-S-T-HH	3/8	C-303(-S)
	1-1/8	C-439-S-T-HH	C-309-S-T-HH	C-439-S-T-HH		
	1-3/8	C-4311-S-T-HH	C-4311-S-T-HH	C-4311-S-T-HH		
5 – 6	7/8	RSF-487-T	C-437-S-T-HH	RSF-487-T	1/2	C-304(-S)
	1-1/8	RSF-489-T	C-439-S-T-HH	RSF-489-T		
	1-3/8	RSF-4811-T	C-4311-S-T-HH	RSF-4811-T		
	1-5/8	RSF-4813-T	C-4313-S-T-HH	RSF-4813-T		
7-1/2 – 9	1-1/8	RSF-489-T	RSF-489-T	RSF-489-T	1/2	C-414(-S)
	1-3/8	RSF-4811-T	RSF-4811-T	RSF-4811-T		
	1-5/8	RSF-4813-T	RSF-4813-T	RSF-4813-T		
	2-1/8	RSF-4817-T	RSF-4817-T	RSF-4817-T		
10 – 12	1-1/8	RSF-489-T	RSF-489-T	RSF-489-T	1/2	C-414(-S)
	1-3/8	RSF-4811-T	RSF-4811-T	RSF-4811-T		
	1-5/8	RSF-4813-T	RSF-4813-T	RSF-4813-T		
	2-1/8	RSF-4817-T	RSF-4817-T	RSF-4817-T		
13 – 18	1-3/8	RSF-4811-T	RSF-4811-T	RSF-4811-T	5/8	C-485-G
	1-5/8	RSF-4813-T	RSF-4813-T	RSF-4813-T		
	2-1/8	RSF-4817-T	RSF-4817-T	RSF-4817-T		
	2-5/8	RSF-4821-T	RSF-4821-T	RSF-4821-T		

SUCTION LINE FILTER-DRIER ON LARGER SYSTEMS

for CLEAN-UP AFTER HERMETIC MOTOR BURNOUT and for FIELD INSTALLATIONS

SYSTEM SIZE HORSEPOWER	SUCTION LINE SIZE	SEVERAL CORE CHANGES, THEN RPE-48-BD ELEMENT(S)		
		REFRIGERANTS		
		12 & 134a	22 & 407C	404A, 502 & 507
20	1-3/8	—	RSF-4811-T	—
	1-5/8	RSF-4813-T	RSF-4813-T	RSF-4813-T
	2-1/8	RSF-9617-T	RSF-4817-T	RSF-4817-T
	2-5/8	RSF-9621-T	RSF-4821-T	RSF-4821-T
25	1-5/8	—	RSF-4813-T	—
	2-1/8	RSF-9617-T	RSF-4817-T	RSF-9617-T
	2-5/8	RSF-9621-T	RSF-4821-T	RSF-9621-T
	3-1/8	RSF-9625-T	RSF-9625-T	RSF-9625-T
30	2-1/8	RSF-9617-T	RSF-9617-T	RSF-9617-T
	2-5/8	RSF-9621-T	RSF-9621-T	RSF-9621-T
	3-1/8	RSF-9625-T	RSF-9625-T	RSF-9625-T
	3-5/8	—	—	(2) RSF-9617-T
40	2-1/8	—	RSF-9617-T	—
	2-5/8	(2) RSF-9621-T	RSF-9621-T	RSF-9621-T
	3-1/8	(2) RSF-9621-T	RSF-9625-T	RSF-9625-T
	3-5/8	(2) RSF-9621-T	—	(2) RSF-9621-T
50	2-1/8	—	RSF-9617-T	—
	2-5/8	(2) RSF-9621-T	RSF-9621-T	(2) RSF-9621-T
	3-1/8	(2) RSF-9621-T	RSF-9625-T	(2) RSF-9621-T
	3-5/8	(2) RSF-9621-T	—	(2) RSF-9621-T
60	2-1/8	—	(2) RSF-9617-T	—
	2-5/8	—	(2) RSF-9617-T	—
	3-1/8	(3) RSF-9621-T	(2) RSF-9617-T	(2) RSF-9621-T
	3-5/8	(3) RSF-9621-T	—	(2) RSF-9621-T
75	4-1/8	(3) RSF-9621-T	—	(2) RSF-9621-T
	2-5/8	—	(2) RSF-9617-T	—
	3-1/8	(3) RSF-9617-T	(2) RSF-9617-T	(2) RSF-9621-T
	3-5/8	(3) RSF-9621-T	(2) RSF-9621-T	(2) RSF-9621-T
	4-1/8	(3) RSF-9621-T	—	(2) RSF-9621-T

Note: Use horsepower ratings for approximate air conditioning tonnage ratings.

FOR SYSTEMS WHICH REQUIRE THE MAXIMUM AMOUNT OF DESICCANT

TYPE	SUCTION LINE SIZE	SYSTEM CAPACITY IN HORSEPOWER	
		CORE CHANGE OUT, THEN RPE-100 ELEMENTS	
		REFRIGERANTS	
		12, 134a, 404A, 502 & 507	22 & 407C
C-30013-G	1-5/8	25	50
C-30017-G	2-1/8		
C-40017-G	2-1/8		
C-40021-G	2-5/8	30	60
C-40025-G	3-1/8		
C-40029-G	3-5/8		
C-40033-G	4-1/8		

MAXIMUM RECOMMENDED PRESSURE DROP – PSI FOR SUCTION LINE FILTER-DRIERS

SYSTEM	PERMANENT INSTALLATION	TEMPORARY INSTALLATION		
	REFRIGERANTS			
	22, 404A, 407C, 410A, 502 & 507	12 & 134a	22, 404A, 407C, 410A, 502 & 507	12 & 134a
Air Conditioning	3	2	8	6
Commercial	2	1-1/2	4	3
Low Temperature	1	1/2	2	1

For Refrigerants 401A & B Use R-12 Ratings
For Refrigerants 402A & B Use R-502 Ratings

INSTRUCTIONS FOR USING THE TABLE

The tables above aid in selecting the proper size Catch-All or Replaceable Suction Filter (RSF) shell for most applications. When cores are used in the RSF shell, a 100 mesh screen (p/n: 6171-5) is required. The cores may need to be changed several times to remove all the acid, moisture and other contaminants. After clean-up, the screen must be removed and a RPE-48-BD Filter Element(s) installed for the lowest possible pressure drop.

Always check the pressure drop across the cores during the first few hours of operation. Replace the cores as necessary to minimize pressure drop in the suction line. Numbers in parenthesis indicate where multiple drier shells should be piped in parallel.

The table to the left is another alternative for a technician who wants the maximum amount of desiccant for an extremely contaminated system. Selecting one of these shells may be desired when fewer core change-outs are desired and space is not an issue.

To convert Horsepower to **TONS**, multiply a rating by the appropriate factor in the table below. These factors are **APPROXIMATE** and are the same for all common refrigerants.

EVAPORATOR TEMPERATURE	40°F	20°F	0°F	-20°F	-40°F
Factor	0.9	0.65	0.5	0.35	0.25

PROCEDURE for CLEAN-UP AFTER BURNOUT

Wherever possible use the clean-up procedure recommended by the unit manufacturer. When this is not available, detailed information on clean-up is available in Sporlan Bulletin 40-10. The general recommendations for clean-up are as follows:

Make certain that a burnout has actually occurred by running the proper electrical tests. Determine the severity of the burnout by analyzing the oil from the burned out compressor with a Sporlan Acid Test Kit.

The TA-1 or AK-3 Acid Test Kits should be used to test the acidity of mineral, alkylbenzene or POE oil. The TA-1 is a simple one-time “pass-fail” kit. The AK-3 is a reusable kit designed to test the oil on a “pass-fail” basis or to determine the exact acid content in the oil.

If the acidity is within specified limits, then a mild burnout has occurred and it can be cleaned up by installing an oversized Catch-All Filter-Drier in the liquid line. All other cases should be considered a severe burnout and require a suction line filter-drier in addition to an oversized liquid line filter-drier.

Remove the refrigerant from the system. In most cases of severe burnout it will not be feasible to save the refrigerant. Remove the burned out compressor and install the new compressor. Install a suction line filter-drier directly ahead of the new compressor. Install an oversized filter-drier in the liquid line. Evacuate the system and charge with refrigerant, following the equipment manufacturer’s start-up procedure. **Check the pressure drop across the suction line filter-drier during the first few hours of operation, and replace if necessary.** Install a See•All Moisture-Liquid Indicator to make sure the moisture content is within acceptable limits. If possible, obtain another oil

sample after 24 hours of operation, and check with the Acid Test Kit to make sure the acid level is satisfactory.

SIGNIFICANCE of the TYPE NUMBER

The letters and numerals each have a significance. The **“C”** indicates Catch-All. The **“RSF”** indicates Replaceable Suction Filter. The **FIRST TWO OR THREE DIGITS** indicate cubic inches of desiccant or element size. The **LAST ONE OR TWO DIGITS** indicate fitting size in eighths of an inch. For sealed models, a **“-S”** following the last digit indicates solder fittings, and **NO LETTER** indicates a flare fitting. Replaceable core models (C-R425-G and larger) and RSF shells only have solder connections and the **“-S”** is omitted. Examples are: C-083 is 8 cu. in. and 3/8” male flare, C-309-S is 30 cu. in. and 1-1/8” solder, RSF-4813-T is designed for 48 cu. in. and 1-5/8” solder connections and incorporates a pressure tap on the aluminum endplate.

Other suffix letters indicate special qualities. For example:

- “-T”** indicates a pressure tap consisting of a Schrader type access valve on the inlet end of the Catch-All or RSF shell.
- “-HH”** indicates a charcoal style core for wax removal and clean-up after a hermetic motor burnout.
- “-F”** indicates a female flare outlet fitting with a male flare inlet fitting.
- “-FM”** indicates a female flare inlet fitting with a male flare outlet fitting.
- “-CAP”** indicates a Catch-All particularly designed for installation on capillary tube systems.

REPLACEABLE CORES and FILTER ELEMENTS



Cores for replaceable core type filter-driers are molded with the same desiccants that are used in the popular sealed filter-driers.

Cores are individually packed in metal cans, fully activated, and hermetically sealed against moisture and dirt.

Filter elements are dried and packed in individual sealed metal cans. This method of packaging prevents the filter element from picking up moisture from the atmosphere.

Each can contains a “triple gasket” consisting of a new endplate gasket, an endplate gasket for certain competitive filter-drier shells, and a core gasket where desired.

RC-4864 – Activated Core – Order as separate item – Fits types C-480 thru C-19200 Series Shells **and Replaceable Suction Filter (RSF) shells.** This is the standard core suitable for most installations in the liquid or suction line.

RCW-48 – High Water Capacity Core – Order as separate item – Fits types C-480 thru C-19200 Series Shells **and Replaceable Suction Filter (RSF) shells. Designed specially for use with POE oils.** This core should also be used on systems that have a ruptured water cooled condenser, or that have been exposed to the atmosphere, or for some reason have a high amount of moisture in the system.

RC-4864-HH – Activated Charcoal Core – Order as separate item – Fits types C-480 thru C-19200 Series Shells **and Replaceable Suction Filter (RSF) shells.** This core should be used for wax removal on low temperature R-22 and R-502 systems, and for clean-

up after burnout on all types of systems.

RC-10098 – Activated Core – Order as separate item – Fits types C-30000 and C-40000 Series Shells. This is the standard core suitable for most installations in the liquid or suction line.

RCW-100 – High Water Capacity Core – Order as separate item – Fits types C-30000 and C-40000 Series Shells. **Designed specially for use with POE oils.** This core should be used on systems that have a ruptured water cooled condenser, or that have been exposed to the atmosphere, or for some reason have a high amount of moisture in the system.

RC-10098-HH – Activated Charcoal Core – Order as separate item – Fits types C-30000 and C-40000 Series Shells. This core should be used on low temperature R-22 and R-502 systems for wax removal, and for clean-up after burnout on all types of systems.

RPE-48-BD – Filter Element – Order as a separate item – Fits types C-480 thru C-19200 Series Shells **and Replaceable Suction Filter (RSF) Shells.** This element should be used in RSF shells installed in the **suction line** to obtain the lowest possible pressure drop after cores were used for system clean-up.

RPE-100 – Filter Element – Order as a separate item – Fits C-30000 and C-40000 Series Shells. This filter element should be used in the **suction line** to obtain the lowest possible pressure drop after cores were used for system clean-up.

For clean-up of centrifugal systems, request Bulletin 240-10-3.



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