

Replaceable Core Catch-All Filter-Drier

Installation and Servicing Instructions

SD-214/052015

General

Refer to Bulletin 40-10 for all models covered by these instructions. The **Catch-All Filter-Drier** should be installed in the liquid refrigerant line immediately ahead of the **See-All Moisture & Liquid Indicator**, solenoid valve, and thermostatic expansion valve. The drier shell may be installed in any position, but always observe the proper flow direction. A horizontal position is usually most convenient, since any dirt collected on the cores will not drop into the outlet fitting when the cores are removed. Remove the end plate and internal parts before brazing the filter-drier shell into the line. Install in such a manner that sufficient clearance is available in front of the end plate for changing cores. See the table at right for the space required for each model.

Replace any lost or damaged bolt and/or nut from a replaceable core Catch-All Filter-Drier. **All bolts and nuts** torqued to the proper value **are required for proper safe fastening of the end plate** and to prevent leakage. Bolts should be torqued to **25-30 ft-lbs** on the C-R420, C-480, C-19200 Series, C-30000 and C-40000 Series Catch-Alls.

Mounting Brackets

Replaceable Core Catch-All Filter-Driers should be supported with one or more mounting brackets so the

weight does not strain the liquid line, and vibration is held to a minimum. The various Sporlan mounting brackets designed to fit the shell are shown below. Each bracket is supplied with a bolt, nut, and washer for easy installation.

ALLOW ENOUGH UNOBSTRUCTED SPACE TO PERMIT THE CORES TO BE EASILY REMOVED

Type	Clearance Required Inches (mm)
C-R420 Series	6-1/2 (165)
C-480 Series	7-1/2 (190)
C-960 Series	13 (330)
C-1440 Series	18-5/8 (473)
C-19200 Series	24-1/4 (616)
C-30000 Series	25-5/8 (651)
C-40000 Series	32-1/8 (816)

For C-480 thru C-19200 Series - use A-685 Mounting Bracket

For C-30000 thru C-40000 Series - use A-175-2 Mounting Bracket
For C-R424, C-R425, and C-R427 - use A-175-1 Mounting Bracket

The "G" STYLE indicates a unit supplied with a **1/4" female pipe thread in the end plate, and a steel pipe plug**. This construction permits the user to install the pipe plug or a Schrader type access valve for pressure measurements, or a charging valve for adding refrigerant to the system. If this fitting is used for other purposes, caution must be taken to



prevent breakage of the connection. In attaching the pipe threads always **use a refrigerant grade thread sealant**. ANSI Standard B.120.1 recommends tightening this joint 2-3 turns after finger tight.

BRAZING SUGGESTIONS – CAUTION! – Remove all internal parts before brazing the Catch-All into the line.



Replaceable core Catch-All shells in the C-R420; C-480 thru C-19200 Series and the C-30000 and C-40000 Series are supplied with copper fittings which are suitable for use with any soft solder, including Sta-Brite, or any of the commonly used silver brazing alloys, including Sil-Fos or Phos-Copper, that do not require flux.

Use a torch tip that is large enough to rapidly heat the line size being used. Place a wet cloth on the Catch-All body, direct the flame of the torch away from the shell to protect the coating from deterioration by the heat of brazing. These precautions will maintain the corrosion protection finish and prevent rust in service.

Installation and Replacement Instructions

The cores used in replaceable core Catch-All Filter-Driers are shipped in **METAL CANS HERMETICALLY SEALED** to protect them

from contamination by moisture and dirt. **The detailed instructions for assembly and changing cores are given on these cans.** The following condensed instructions may be used if these cans are not available.

1. Make sure all the refrigerant is pumped out of the Catch-All shell. The appropriate shut-off valves should be tightly closed.

2. Remove the end plate and internal assembly, and clean the internal parts. Remove the activated core from the sealed can using caution when doing so. The metal pull tab and pull strip permit the can to be rolled opened with the key or a pair of pliers. Do not replace the end plate gasket unless it is damaged. When replacement is necessary, select the outer gasket from the set supplied with each core.

Do not cut or abrade the gaskets used in the end plate.

3. Remove the end spring, wing screw, and inlet plate from outlet plate assembly. Remove core spacer plates from assembly (if applicable). If desired, install secondary filter. (Detailed installation instructions are packaged with the secondary filter.) Assemble the molded cores and use the core spacer plates as required. After the cores are assembled, position inlet plate on the end of the tubular screen. Fasten finger tight the wing screw to assembly. The screw, when properly fastened, tightens the components in the assembly thereby prohibiting component movement and dirt bypassing around the cores. Assemble the end spring on to the wing screw. The design of the screw holds the spring in position

so that the end plate can be easily installed (especially when the shell is mounted horizontally). The end spring is designed to fit into the circular groove on the end plate.

4. Insert the assembly in the shell, replace the flange bolts, tighten evenly, using a star pattern, to the recommended torque value, **25-30 ft-lbs** for the C-R420 Series, the C-480 thru C-19200 Series, and the C-30000 and C-40000 Series.

5. For C-R424, C-R425, and C-R427 models - do not remove the outlet strainer assembly or gasket. On these models, the core retainer assembly with the spring is the only part that must be removed to change the core.

Caution

The edge of the shell fits into the gasket groove on the end plate and makes a seal against the gasket to prevent refrigerant leakage. Be careful not to scratch or damage the edge of the shell when changing the cores. If the edge of the shell should become damaged, replace the shell to prevent possible refrigerant leakage.

Special Conditions Of Use

Warning:

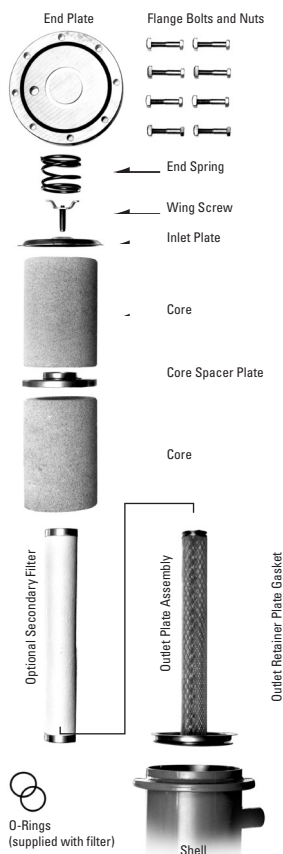
To avoid electrostatic charging steps must be taken to ensure the equipotential bonding is maintained.

Warning:

To avoid a possible electrostatic charge only clean with a damp cloth. Operating fluid temp shall be limited to a range of -46°C (-50°F) to 65°C (149°F).

When to Change Cores

Cores should be changed when they become contaminated, or on a regular maintenance schedule. Disposal of the cores should be handled according to local laws. Cores that become contaminated with **solid particles** should be changed whenever the pressure drop increases to the point where it reduces system performance. When **moisture** is the major concern, change the drier cores according to the indication of the See•All Moisture & Liquid Indicator. The cores will remove their maximum



**Typical Assembly
C-480 thru C-19200 Series**

amount of moisture and come to equilibrium in approximately one day of operation. When either **acid or wax** is the major contaminant involved, the cores should be left in the system at least three days to come to equilibrium thereby removing the maximum amount of contaminants.

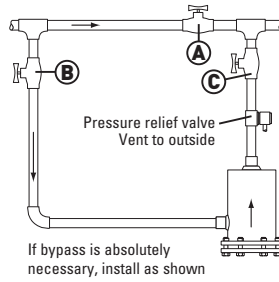
Many users of replaceable core Catch-Alls will change the cores every Spring and Fall as part of their normal maintenance schedule.

Bypass Installations

For the added convenience of operating the system while changing drier cores, a bypass installation is recommended (see sketch). Valve **A** would normally be closed which would allow all the refrigerant to flow through the filter-drier. Note that hand valves **B** and **C** are required only if it is desired to replace the Catch-All Filter-Drier without pumping down the piping from the receiver. Always pump out the section of the line containing the filter-drier by closing the hand valves **A** and **B** (note direction of flow). After isolated section has been pumped out, close valve **C**, and then change the core. Disposal of the cores should be handled according to local laws.

WARNING! Dangerous hydraulic pressures may develop if hand valves **B** and **C** are closed and the filter-drier is full of liquid. When liquid is trapped in a section of line, even a slight increase in temperature results in a great increase in internal pressure. Therefore, a pressure relief device

is recommended, as indicated.



Replaceable Cores

Cores are dried and individually sealed in hermetic containers. The drier shells are shipped less cores. Cores should be ordered separately, as follows:

RCW-42

High Water Capacity Core – Order as separate item – Fits ONLY shell types C-R424, C-R425, and C-R427. **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-4864

Activated Core – Order as separate item – Fits types C-480 thru C-19200 Series 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. **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-4864-HH

Activated Charcoal Core – Order as separate item – Fits types C-480 thru C-19200 Series shells. This core should be used for wax removal on low temperature R-22 and R-502 systems, and for clean-up of systems that have had a hermetic motor burnout.

RC-10098

Activated Core – Order as separate item – Fits types C-30000 and C-40000 Series shells. This core has a high water capacity and should be used on all standard liquid and suction line applications.

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.

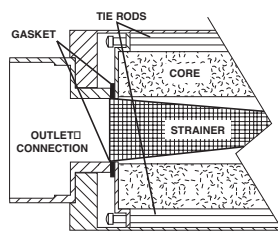
This core should be used for wax removal on low temperature R-22 and R-502 systems, and for clean-up of systems that have had a hermetic motor burnout.

Restriction in Large Fitting Sizes

The diagram at the right shows the construction required in Replaceable Core Catch-Alls having fitting sizes of 2-5/8”

ODF and larger. The flow passageway in the drier shell is smaller than the diameter of the fitting. This is necessary to obtain a proper gasket surface for the internal parts. The outlet flow passageway is approximately the same size as the inside diameter

of the core. The size of the flow passageway results in a restriction in the larger line sizes. This is not a problem as long as the larger Catch-Alls are selected according to the recommendations in Bulletin 40-10.



**Typical Assembly
C-30013 thru C-40033-G**

All replaceable core Catch-All Filter-Driers with ODF solder type connections are suitable for Refrigerants 22, 123, 124, 125, 134a, 290, 401A & B, 402A & B, 404A, 407A, 407C, 407F, 410A, 507, 1234yf, and 1234ze. Do not use replaceable core Catch-Alls (having the aluminum end plate) with refrigerants 40 (Methyl Chloride) or 30 (Methylene Chloride). Also do not use Methyl Alcohol in any system having a replaceable core Catch-All with an

aluminum end plate. The new tube construction and optional secondary filter installed in replaceable core Catch-All Filter-Driers with ODF solder type connections cannot be used on ammonia systems. All replaceable core Catch-All Filter-Driers with NPT female connections, using the tie rod construction, are suitable for all of the above listed refrigerants plus Ammonia (R-717).

Listed by Underwriters Laboratories, Inc. Guide Card SMGT, File No. SA-1756 A and B; and Canadian Standards Association File LR-19953. See Maximum Rated Pressure data below.

Refer to Bulletin 40-10 for complete model range, ATEX and additional installation, operation, and replacement instructions. This product is in compliance with Δ ATEX directive 94/9/CE under II 3 G TX Ta -46°C to 65°C (-50°F to 149°F).

Filter-Drier Type Number	Maximum Rated Pressure	
	SI Units – kPa	English Units – psi
C-R420 Series	4482	650
C-480, C-960, C-1440, C-19200	4482	650
C-30000 and C-40000 Series	4137	600

Δ WARNING – USER RESPONSIBILITY
FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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