January 2011 / **BULLETIN 40-10**

SPORLAN

Catch-All®

Liquid & Suction Line Filter-Driers

It's the CORE that counts!

Parker

ENGINEERING YOUR SUCCESS.

The Sporlan **Catch-All® Liquid and Suction Line Filter-Driers** are the choice for today's systems with

R-410A

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FOR USE ON REFRIGERATION and/or AIR CONDITIONING SYSTEMS ONLY

Bulletin 40-10, January 2011, supersedes Bulletin 40-10, January 2008, Bulletin 40-10-8, January 2009 and all prior publications.

Liquid Line

Quick Selection Recommendations

SYSTEM SIZE		FIELD REPLACEMENT			
		AIR CONDITIONING		REFRIGERATION	
TONS	LINE SIZE Inches OD	R-12 & R-134a	R-22, R-407C & R-410A*	R-12, R-134a, R-404A, R-502 & R-507	R-22
SEALED TYPES - SPECIFY FLARE OR SOLDER					
1/4 - 1/3	CAP TUBE 1/4	C-032-CAP C-032(-S)	C-032-CAP C-032(-S)	C-032-CAP C-032(-S)	C-032-CAP C-032(-S)
1/2 - 1	1/4 5/16 3/8	C-052(-S) C-0525-S C-053(-S)	C-052(-S) C-0525-S C-053(-S)	C-082(-S) C-0825(-S) C-083(-S)	C-082(-S) C-0825-S C-083(-S)
1-1/2 - 2-1/2	5/16 3/8 1/2	C-0825-S C-083(-S) C-084(-S)	C-0825-S C-083(-S) C-084(-S)	C-1625-S C-163(-S) C-164(-S)	C-1625-S C-163(-S) C-164(-S)
3 - 6	5/16 3/8 1/2 5/8	C-1625-S C-163(-S) C-164(-S) C-165(-S)	C-1625-S C-163(-S) C-164(-S) C-165(-S)	— C-303(-S) C-304(-S) C-305(-S)	— C-303(-S) C-304(-S) C-305(-S)
7 - 9	1/2 5/8 7/8	C-304(-S) C-305(-S) C-307-S	C-304(-S) C-305(-S) C-307-S	C-414(-S) C-415(-S) C-417-S	C-414(-S) C-415(-S) C-417-S
10 - 12	1/2 5/8 7/8 1-1/8	— C-415(-S) C-417-S C-419S	C-414(-S) C-415(-S) C-417-S C-419S	— C-415(-S) C-417-S C-419-S	C-414(-S) C-415(-S) C-417-S C-419-S
13 - 18	5/8 7/8 1-1/8	— C-607-S C-609-S	C-415(-S) C-607-S C-609-S	— C-607-S C-609-S	C-415(-S) C-607-S C-609-S
REVERSIBLE HEAT PUMP FILTER-DRIER					
1-5	3/8 1/2 5/8	—	HPC-103-S / HPC-163-S-HH HPC-104-S / HPC-164-S-HH HPC-165-S-HH	—	—
4-12	3/8 1/2 5/8 7/8	—	HPC-303-S-HH / HPC-304-S-HH HPC-305-S-HH / HPC-307-S-HH	—	—
REPLACEABLE CORE TYPES					
4 - 9	5/8 7/8	C-485-G C-487-G	C-485-G C-487-G	C-485-G C-487-G	C-485-G C-487-G
10 - 15	5/8 7/8 1-1/8	— C-487-G C-489-G	C-485-G C-487-G C-489-G	— C-487-G C-489-G	C-485-G C-487-G C-489-G
16 - 29	7/8 1-1/8 1-3/8	C-967-G C-969-G C-9611-G	C-967-G C-969-G C-9611-G	C-967-G C-969-G C-9611-G	C-967-G C-969-G C-9611-G
30 - 39	7/8 1-1/8 1-3/8	— C-1449-G C-14411-G	C-967-G C-969-G C-9611-G	— C-1449-G C-14411-G	C-967-G C-969-G C-9611-G
40 - 59	1-1/8 1-3/8 1-5/8	C-1449-G C-19211-G C-19213-G	C-1449-G C-14411-G C-14413-G	— C-19211-G C-19213-G	C-1449-G C-14411-G C-14413-G
60 - 75	1-1/8 1-3/8 1-5/8	— C-19211-G C-19213-G	C-1449-G C-19211-G C-19213-G	— C-19211-G C-19213-G	— C-19211-G C-19213-G
76 - 99	1-3/8 1-5/8 2-1/8	— C-30013-G C-40017-G	C-19211-G C-19213-G C-19217-G	— C-30013-G C-40017-G	C-19211-G C-19213-G C-19217-G
100 - 130	1-5/8 2-1/8	— C-40017-G	C-30013-G C-40017-G	— C-40017-G	C-30013-G C-40017-G
131 - 150	2-1/8	(2) C-30017-G	C-40017-G	(2) C-30017-G	C-40017-G

CATCH-ALL SIZE	NO. OF CORES	CORE TYPE
C-R420 Series Shell	1	RCW-42
C-480 Series Shell	1	RCW-48, RC-4864, or RC-4864-HH
C-960 Series Shell	2	
C-14400 Series Shell	3	
C-19200 Series Shell	4	
C-30000 Series Shell	3	RCW-100, RC-10098, or RC-10098-HH
C-40000 Series Shell	4	

*C-30000 and C-40000 Series shells are not approved for R-410A.

Why Chemical Breakdown Occurs

MOISTURE

Water or moisture is always present in refrigeration systems, especially with the use of hygroscopic polyolester (POE) lubricants. Acceptable limits vary from one unit to another and from one refrigerant to another. Moisture is harmful even if "freeze-ups" do not occur. Moisture is an important factor in the formation of acids, sludge, copper plating, and corrosion. To be ***safe*** and ***sure***, keep the moisture level as low as possible.

DIRT

Dirt, oxide, scale, sludges, flux, and metallic particles are frequently found in refrigeration systems. Numerous metallic contaminants — cast iron dust, rust, scale, steel, copper, and brass chips — can damage cylinder walls, bearings, and plug capillary tubes or thermostatic expansion valve screens. In addition to mechanical damage and "plug-ups," these contaminants catalyze chemical reactions that contribute to decomposition of the refrigerant-lubricant mixture at elevated temperatures.

ACIDS

Refrigerants by themselves are very stable, even when heated to a high temperature. However under some conditions, reactions do occur which can result in the formation of acids. For example, Refrigerant 22 will decompose at high temperatures to form hydrochloric acid where an "acid acceptor" such as electrical insulation paper is present. The reaction of refrigerants with water may cause hydrolysis and the formation of hydrochloric and hydrofluoric acids. These acids are usually present as a gas in the system and are highly corrosive. In ordinary usage this reaction is negligible, but in a very wet system operating at abnormally high temperatures, some hydrolysis may occur.

All of these reactions are increased by elevated temperature and are catalytic in effect, resulting in the formation of corrosive compounds.

Another significant source of acidity in refrigeration systems is organic acid formed from lubricant breakdown. Acid is formed when POE lubricant reacts with moisture. Appreciable amounts of ***organic acid*** are found in lubricant samples analyzed in our laboratory. Since acids corrode metals in a system, they must be removed.

SLUDGE AND VARNISH

Although the utmost pre-caution may be taken in the design and fabrication of a system, once in operation, unusually high discharge temperatures will cause the lubricant to breakdown. By-products of mineral/alkylbenzene lubricant decomposition are varnish, sludge, and possibly carbonaceous powder.

Temperatures may vary in different makes of compressors and under different operating conditions. While temperatures of 265°F/129°C are not unusual at the discharge valve under normal operation, temperatures well above 300°F/149°C frequently occur under unusual conditions. Common sources of high temperatures in refrigeration systems are dirty condensers, non-condensible gases in the condenser, high compression ratio, high superheat of suction gas returned to compressor, fan failure on forced convection condensers, and others.

In addition to high discharge temperatures, there are certain ***catalytic metals*** that contribute to the lubricant-refrigerant mixture breakdown. The most noted of these in a refrigeration system is iron. It is used in one form or another in all systems and is an active catalyst. Copper is in the same category as iron, but its action is slower. However, the end result is the same. This reaction causes sludge formation and other corrosive materials that will hinder the normal operation of compressor valves and control devices. **In addition, air in a system will accelerate the deterioration of the lubricant.**

How It Works

The famous molded porous core of the Catch-All® Filter-Drier performs these vital functions:

REMOVES MOISTURE

The ***Catch-All Filter-Drier*** removes moisture from the refrigerant and lubricant by adsorbing and retaining moisture deep within the desiccant granules. The blend of desiccants used in the Catch-All is specially formulated for exceptional moisture removal. The high degree of activation ensures maximum water capacity, which means the core removes a large amount of water in one pass, thereby protecting the expansion valve from possible freeze-up. Since the refrigerant must flow through the core, maximum contact between the two ensures rapid system dehydration.

REMOVES FOREIGN MATTER

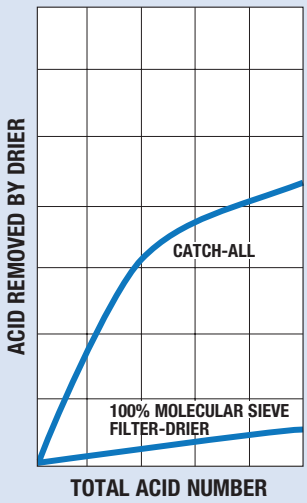
Scale, solder particles, dirt, and all types of foreign substances must be removed to protect the compressor, solenoid valves, expansion valves, capillary tubes, and other close tolerance parts of a refrigeration system.

The solution to system filtration is the Catch-All Filter-Drier. The Catch-All has been designed to do the job with maximum efficiency. It removes these particles, down to the minimum size, in one pass filtration. Furthermore, the large filtering surface available on the core results in the ability to collect a large amount of dirt with negligible pressure drop. If plugged, the Catch-All will not burst allowing trapped substances back into the system.

REMOVES ACIDS

The ***Catch-All Filter-Drier*** is unexcelled in acid removal ability. The hydrochloric, hydrofluoric, and various organic acids found in used oil samples are harmful in a system. These acids are adsorbed and remain on the desiccant in a manner similar to the adsorption of moisture.

ORGANIC ACID REMOVAL ABILITY



Laboratory tests have shown that the Catch-All Filter-Drier's desiccant has an acid removal ability superior to other desiccants used in other refrigeration driers. Compared to other filter-driers designed for today's systems, tests show the ***Catch-All Filter-Drier*** removes much more acid (on an equal weight basis).

The Catch-All has demonstrated excellent field performance in cleaning up severely contaminated systems, whether due to acid, lubricant breakdown, or to hermetic motor burnout. Its success in field service work and in protecting new systems is largely due to its outstanding ability to remove acid and the products of lubricant breakdown.

REMOVES SLUDGE AND VARNISH

Even the best refrigeration lubricants frequently break down to produce organic acids and possibly varnish and sludge. These products of lubricant decomposition, are formed due to excessive heat or air in the system. Varnish can plug small orifices and accumulate on compressor valves causing eventual valve failure.

The ability of various desiccants to remove these products of lubricant decomposition has been evaluated in sealed glass tubes. Of all the desiccants tested, only the desiccant used in the Catch-All Filter-Driers proved capable of removing the products of lubricant breakdown. This ability makes the Catch-All Filter-Drier highly effective in cleaning systems that have had a hermetic motor burnout, and in protecting new systems by preventing an accumulation of these lubricant breakdown products.

Catch-All® The Inside Story

CATCH-ALL FILTER-DRIERS PROVIDE THESE PROVEN BENEFITS:

BLEND OF DESICCANTS

Through constant engineering research, Sporlan developed a blend of desiccants that gives each core maximum contaminant removal characteristics for today's systems. Each core is formulated with molecular sieve for high water capacity and activated alumina for acid removal. A special grade of activated alumina granules is used to obtain the maximum ability to remove acids and products of lubricant breakdown. The overall result is balanced contaminant removal ability.

SPECIAL CHARCOAL BLEND

The HH core, which incorporates activated charcoal along with other desiccants, will remove wax, resins, and lubricant breakdown materials that normal desiccants do not remove. Therefore, this type of core is especially useful on low temperature systems when wax is suspected in the system or when wax-like substances are found in the metering device.

The HH style core has also found wide application for clean-up after a hermetic motor burnout where its ability to remove all types of contaminants is very advantageous. **BE SELECTIVE!** Choose a core designed for the specific application involved.

UNIFORM MOLDING

Sporlan pioneered the molded porous core. The core is carefully molded to assure a uniform porosity throughout the entire length and surface of the core. The granules of desiccant are carefully sized and controlled to obtain the proper porosity for maximum filtration ability.

SHOCKPROOF ASSEMBLY

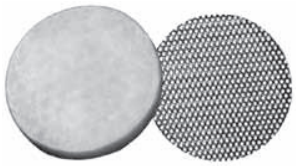
The core is held in place by a heavy leaf spring at the inlet end of the Catch-All assembly. This spring holds the core in position and makes the assembly highly resistant to core breakage. The heavy spring gives a "pre-stressed effect" that significantly reduces the tendency of the core to break if the Catch-All is accidentally dropped.

NO BYPASSING

The core is sealed to the shell wall at the outlet end with a gasket or fibrous pad, which prohibits any possible bypassing of refrigerant around the core. All the flow passes through the core for maximum contaminant removal.

OUTLET SAFETY FILTER

A final "safety filter" is used in the outlet of every Catch-All. This involves either a specially developed polyester pad or 100 mesh screen that collects particles that might have rubbed off during assembly,



and serves as added protection in case the molded core is broken.

LEAKPROOF SHELL

The Catch-All shell is tig welded providing a very smooth, strong, entirely leakproof joint. The fittings are attached to the shell by copper brazing. This type of joint is one of the strongest and most reliable joining methods known. Each Catch-All is pressure tested in our factory to make sure that it does not leak. The overall result is a Catch-All with strong, entirely leakproof joints.

QUALITY FITTINGS

The flare fittings and solder fittings used on Sporlan Catch-Alls are inspected 100% during manufacture to make sure no defects are present. The solder fittings are copper fittings with reliable ID dimension for exact fit to the copper tubing. Flare fittings are nickel plated and their surfaces are smooth and free of scratches. Any imperfect flare fittings are resurfaced during manufacture.

BE SELECTIVE

In addition to being manufactured to high quality standards, the Catch-All has been designed specifically for field service work and OEM use. In situations requiring wax removal or clean-up after a hermetic motor burnout, choose the HH style Catch-All core, which is specifically designed for these applications.

Liquid Line
Ratings and Selection Recommendations

GENERAL

The selection of a filter-drier for a given application involves such technical factors as: the amount of moisture to be expected in a system — operating temperatures — amount of foreign matter present — allowable pressure drop through the filter-drier — its ability to retain both liquid and solid contaminants, and bursting pressure. Proper evaluation of these factors is necessary for optimum service and economy. As an aid, the important factors to be considered for selection purposes are discussed briefly in the following sections.

STANDARD RATINGS

ASHRAE-ARI

The American Society of Heating, Refrigerating and Air Conditioning Engineers Standard 63, "Methods of Testing Liquid Line Refrigerant Driers," sets up a test procedure to follow for determining the water capacity and refrigerant flow capacity under certain conditions. The Air Conditioning and Refrigeration Institute subsequently issued ARI Standard 710, which specifies the rating conditions for water capacity, refrigerant flow capacity, and safety requirements.

This Standard is intended to provide ***comparison points*** only. It is a basis for drier evaluation at the specified rating conditions, but does not attempt to govern the performance of a drier over the entire range of possible applications. It serves only to compare driers on their ratings for water capacity, refrigerant flow capacity, and safety requirements.

WATER CAPACITY

Water capacity is the amount of water (in drops or grams) that a drier will hold at the standard temperatures and equilibrium point dryness (EPD) specified. Twenty drops equal one gram, equal one milliliter or one cubic centimeter.

Equilibrium Point Dryness (EPD) — is used to define the lowest possible water content in liquid refrigerant attainable by a filter-drier at a specific temperature after it has collected a specific quantity of water after equilibrium has been reached between the water in the refrigerant and the water in the drier. Equilibrium point dryness is expressed in parts per million (ppm) by weight.

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 flows of...

4.0 lbs. per minute per ton for R-12
3.1 lbs. per minute per ton for R-134a
2.9 lbs. per minute per ton for R-22
3.9 lbs. per minute per ton for R-404A
2.9 lbs. per minute per ton for R-407C
2.8 lbs. per minute per ton for R-410A
4.4 lbs. per minute per ton for R-502
4.1 lbs. per minute per ton for R-507

SAFETY

Safety is based on drier shell bursting pressure. All liquid line driers manufactured under ARI Standard 710 must meet the requirements of Underwriters' Laboratories, Inc., Standard 207, "Refrigerant Containing Components and Accessories, Nonelectrical."

SELECTION

When selecting a filter-drier the following should be considered:

WATER CAPACITY AND REFRIGERANT FLOW

Water capacity and refrigerant flow comparisons can be made on the basis of ARI Standard data supplied by the manufacturer. ***However, it should be remembered that flow ratings are based on the ideal situation of a completely clean system.*** Flow is reduced as dirt accumulates on the filtering surface.

FILTRATION

Filtration characteristics of a filter-drier are not readily defined or evaluated since laboratory tests cannot reproduce the range of conditions and contaminants seen in an actual system. The ability to filter and ***hold*** foreign matter varies with the brand and type of filter-drier. The simplest guide to follow is that filter capacity is proportional to ***filtering area.*** In the tables that follow, the filtering areas of all Catch-All Filter-Driers are tabulated. Filters should be selected with an adequate reserve capacity to allow for the contamination found in most systems.

ACID REMOVAL

Acid Removal is also difficult to measure. There are no standard ratings to follow. However, both laboratory and field tests have demonstrated that the ***Catch-All*** core has superior acid removal ability — many times the acid capacity of competitive filter-driers developed for today's systems.

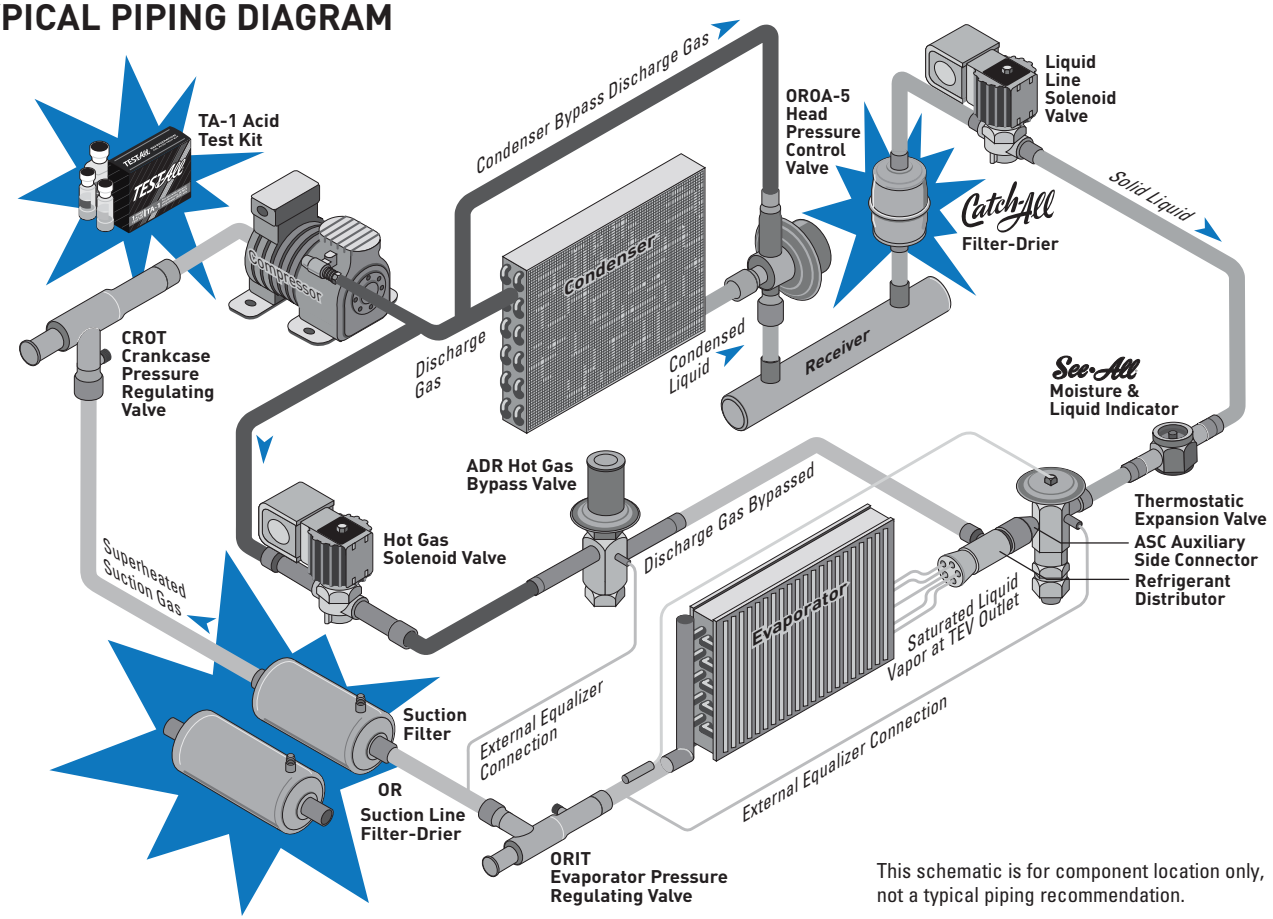
SPORLAN RECOMMENDATIONS

Sporlan's ***Selection Recommendations*** are based on the technical data currently available and more than 60 years of **field experience** with molded porous core filter-driers. Satisfactory results will be obtained with the sizes recommended for all normal refrigeration systems. We have considered the difference in requirements for air conditioning and refrigeration applications. Recommendations for these categories are made on pages 12 through 16 and pages 25 through 28. Recommendations for suction line use of filter-driers are in Form 40-109. Form 40-109 is a quick reference guide for suction line filter-drier selection.

Drier manufacturers establish ratings for their product, but...the final selection of the correct drier should be based on the conditions expected for each job. Consideration should be given to providing extra water capacity and filtering area within economical limits.

Application – Installation

TYPICAL PIPING DIAGRAM



This schematic is for component location only, not a typical piping recommendation.

■ CATCH-ALL LOCATION

Catch-All Filter-Driers are most effective in the ***liquid line.*** Place the filter-drier immediately ahead of other liquid line controls, such as the thermostatic expansion valve, solenoid valve, and ***See•All Moisture & Liquid Indicator.*** When applied in this way, the Catch-All provides maximum protection for the expansion valve and solenoid valve from dirt that may be in the system. If the system contains appreciable moisture, then this location gives the best results in protecting the expansion valve from freeze-up. If possible, place the filter-drier in a ***cold location.*** The ***acid removal ability*** of the Catch-All Filter-Drier is the same whether it is installed in the liquid line or suction line.

Catch-All Filter-Driers are frequently installed in the ***suction line*** just ahead of the compressor. This procedure is used to clean up a new system or a system that has had a hermetic motor burnout. The main advantage of this location is that it is directly ahead of the compressor, and therefore offers maximum protection to the compressor from all contaminants, even those that may be in the low side of the system. Suction line filter-driers give excellent performance in removing water, dirt and acid. A larger size filter-drier is required than if it had been placed in the liquid line. The refrigerant velocity in the suction line is about six times the velocity in the liquid line. Therefore, a larger filter-drier is required in order to maintain a sufficiently low pressure drop.

The **water capacity of a Sporlan Catch-All in the suction line** is equal to or slightly greater than the liquid line water capacity. Filtration and acid removal in the suction line is equal to that obtained in the liquid line. The main disadvantage of the suction line location is that a larger more expensive filter-drier is required.

Catch-All Filter-Driers are not recommended for use in the ***discharge line.*** The water capacity in this location would be greatly reduced due to the high operating temperature.

Catch-All Filter-Driers may be installed in ***any position,*** with top or bottom feed. However, it is advisable to mount replaceable core models horizontally so that foreign material cannot drop into the outlet fitting when the cores are removed. Always observe the flow direction. Except for Catch-Alls used in heat pump systems (HPC models), Catch-Alls must **never** be subjected to reverse flow.

Application – Installation

■ CAPILLARY TUBE SYSTEM

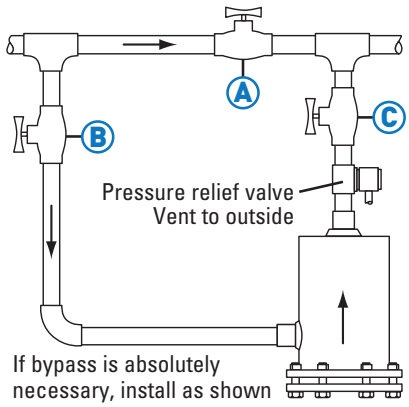
The C-032-CAP Catch-All is designed specifically for capillary tube systems. This unit consists of a C-032-S with 1/4" copper tubes brazed into each end, giving an overall length of 5.81"/148 mm. Capillary tubes of any size may be inserted into the 1/4" copper tube on this Catch-All, then the tubing pinched down, and soldered. In this way the excellent contaminant removal qualities of the Catch-All can be used on domestic refrigerators and freezers. The C-032-CAP-T model has an ***access valve for charging purposes.***

The best filter-drier location is immediately ahead of the capillary tube. The ***amount of liquid refrigerant*** that the smaller size Catch-All Filter-Driers will contain at 100°F/38°C is shown in table below.

■ BYPASS INSTALLATION

It is preferred that the Catch-All Filter-Drier be installed in the ***main liquid line*** for maximum protection. When located in a bypass line, dirt or foreign material may pass into the system through the unprotected main line.

When a ***bypass*** installation is necessary (see illustration), a hand throttling valve **A** is recommended. By throttling valve **A**, a certain portion of refrigerant can be made to pass through the filter-drier. Note that hand valves **B** and **C** are required only if it is desired to replace the filter-drier without pumping down from the receiver. Always pump out the section of the line containing the filter-drier by closing hand valves **A** and **B** (note direction of flow). Permit isolated section to pump out, close valve **C**, then change the ***Catch-All Filter-Drier.***

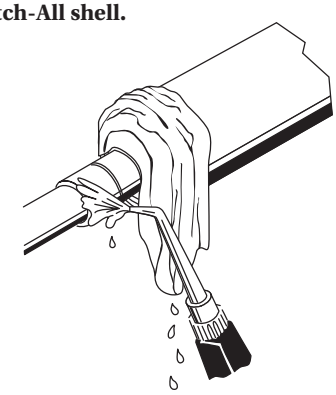


■ WARNING ■

Dangerous hydraulic pressures may develop if hand valves **B** and **C** are closed and the filter-drier is full of liquid. If there is a possibility of inexperienced personnel closing the valves without pumping down, a pressure relief device is recommended.

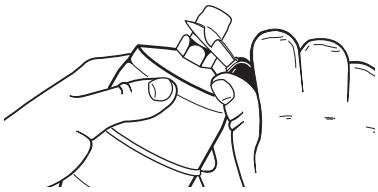
■ BRAZING AND SOLDERING

The solder fittings on sealed model and replaceable core Catch-All Filter-Driers are copper. Copper fittings are suitable for all types of brazing and soldering alloys including soft solder, 95-5 solder, Sta-Brite solder, silver brazing alloy, Sil-Fos, or phos-copper alloys. The fittings on the Catch-All have been carefully cleaned and sealed before shipment, and do not require further cleaning before brazing. **Proper brazing technique involves using a wet cloth draped around the shell, and/or the use of Parker Virginia Thermal Block™, and proper torch tip for rapid heating, and also directing the flame away from the Catch-All shell.**



■ SEAL REMOVAL

The normal procedure in removing seals from either solder or flare connections is to gently cut them away with a knife, as shown in the illustration. With flare connections ***caution*** should be exercised to avoid damaging the flare surface. The seals cannot be removed and replaced without tearing them.

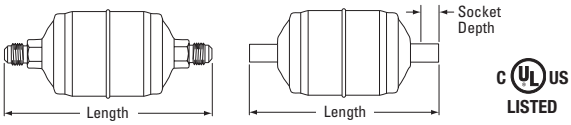


Catch-All Liquid Refrigerant Capacities

CATCH-ALL SERIES TYPE NO.	LIQUID CAPACITY													
	OUNCES OF REFRIGERANT BY WEIGHT AT 100°F							kg OF REFRIGERANT BY WEIGHT AT 38°C						
	REFRIGERANT							REFRIGERANT						
	12	134a	22	404A	407C	410A	507	12	134a	22	404A	407C	410A	507
C-030	2.1	1.9	1.9	1.6	1.7	1.7	1.6	0.06	0.05	0.05	0.05	0.05	0.05	0.05
C-050	5.3	4.9	4.8	3.9	4.2	4.2	4.1	0.15	0.14	0.14	0.11	0.12	0.12	0.12
C-080	7.6	6.9	6.8	5.6	6.0	5.9	5.8	0.22	0.20	0.19	0.16	0.17	0.17	0.16
C-160	12.0	11.0	10.8	8.9	9.5	9.4	9.3	0.34	0.31	0.31	0.25	0.27	0.27	0.26
C-300	19.2	17.6	17.3	14.2	15.2	15.1	14.9	0.54	0.50	0.49	0.40	0.43	0.43	0.42
C-410	27.0	24.7	24.3	19.9	21.4	21.1	20.9	0.77	0.70	0.69	0.56	0.61	0.60	0.59
HPC-080	—	—	9.2	—	8.1	8.0	—	—	—	0.26	—	0.23	0.23	—
HPC-100	—	—	12.2	—	10.7	10.6	—	—	—	0.35	—	0.30	0.30	—
HPC-160	—	—	14.5	—	12.7	12.6	—	—	—	0.41	—	0.36	0.36	—
HPC-300	—	—	19.7	—	17.3	17.2	—	—	—	0.56	—	0.49	0.49	—

Catch-All® Sealed Type Specifications

Type C-032 through C-609-S-T-HH
Maximum Rated Pressure of 650 psi



c UL us LISTED

Liquid Line and Suction Line

Inches ▪ lb

"C" SERIES LIQUID LINE TYPE		SUCTION LINE TYPE	CONNECTION SIZE Inches	VOLUME OF DESSICANT Cu. In.	OVERALL LENGTH Inches		SOLDER SOCKET DEPTH Inches	DIAMETER of BODY Inches	SHIPPING WEIGHT lb
SAE Flare	ODF Solder	ODF Solder			SAE Flare	ODF Solder			
C-032	C-032-S	—	1/4	3	4.19	3.81	0.38	1.75	1/2
—	C-032-CAP C-032-CAP-T	—	Extended 1/4 Male		—	5.81	—		
C-032-F	—	—	1/4 Male - Inlet 1/4 Female - Outlet		3.81	—	—		
C-032-FM	—	—	1/4 Female - Inlet 1/4 Male - Outlet		3.81	—	—		
C-033	C-033-S	—	3/8		4.69	3.88	0.44		
C-052	C-052-S	—	1/4	5	4.75	4.19	0.38	2.44	3/4
—	C-0525-S	—	5/16		—	4.38	0.44		
C-052-F	—	—	1/4 Male - Inlet 1/4 Female - Outlet		4.19	—	—		
C-052-FM	—	—	1/4 Female - Inlet 1/4 Male - Outlet		4.19	—	—		
C-053	C-053-S	—	3/8		5.19	4.31	0.44		
C-082	C-082-S	—	1/4	9	5.62	5.12	0.38	2.62	1-1/4
—	C-0825-S	—	5/16		—	5.31	0.44		
C-083	C-083-S	C-083-S-T-HH	3/8		6.06	5.25	0.44		
C-084	C-084-S	C-084-S-T-HH	1/2		6.31	5.44	0.50		
C-162	C-162-S	—	1/4	16	6.25	5.75	0.38	3.00	1-3/4
—	C-1625-S	—	5/16		—	5.94	0.44		
C-163	C-163-S	—	3/8		6.75	5.88	0.44		
C-164	C-164-S	C-164-S-T-HH	1/2		6.94	6.00	0.50		
C-165	C-165-S	C-165-S-T-HH	5/8		7.25	6.31	0.62		
—	—	C-166-S-T-HH	3/4		—	6.75	0.62		
—	C-167-S	C-167-S-T-HH	7/8		—	6.93	0.75		
C-303	C-303-S	—	3/8	30	9.69	8.88	0.44	3.00	3-1/2
C-304	C-304-S	—	1/2		9.88	9.00	0.50		
C-305	C-305-S	C-305-S-T-HH	5/8		10.19	9.25	0.62		
—	C-306-S	C-306-S-T-HH	3/4		—	9.65	0.62		
—	C-307-S	C-307-S-T-HH	7/8		—	9.80	0.75		
—	C-309-S	C-309-S-T-HH	1-1/8		—	9.75	0.96		
C-413	—	—	3/8	41	9.56	—	—	3.50	4-1/2
C-414	C-414-S	—	1/2		9.94	9.05	0.50		
C-415	C-415-S	—	5/8		10.25	9.35	0.62		
—	C-417-S	C-417-S-T-HH	7/8		—	9.81	0.75		
—	C-419-S	C-419-S-T-HH	1-1/8		—	9.75	0.96		
—	—	C-437-S-T-HH	7/8	48	—	10.34	0.75	4.75	8
—	—	C-439-S-T-HH	1-1/8		—	10.74	0.91		
—	—	C-4311-S-T-HH	1-3/8		—	10.94	0.97		
—	—	C-4313-S-T-HH	1-5/8		—	10.94	1.09		
—	C-607-S	C-607-S-T-HH	7/8	60	—	16.00	0.75	3.00	6
—	C-609-S	C-609-S-T-HH	1-1/8		—	16.00	0.96		

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SIGNIFICANCE OF THE TYPE NUMBER

The letters and numerals in the Catch-All type number each have a significance.

C indicates Catch-All.

FIRST TWO DIGITS indicate the cubic inches of desiccant in the given drier size.

LAST ONE OR TWO DIGITS indicates the fitting size in eighths of an inch. For example: a "3" indicates 3/8" fitting size; a "25" indicates a 5/16" fitting size.

NO LETTER following the last digit indicates an SAE flare fitting.

-S following the last digit indicates an ODF solder fitting. Other suffix letters indicate special qualities. Examples:

-T indicates a pressure tap consisting of a Schrader type access valve on the inlet end of the Catch-All.

-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.

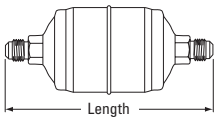
-CAP indicates a Catch-All particularly designed for installation on capillary tube systems. The fittings (a 1/4" OD copper tube brazed into each end of the Catch-All) permit inserting the capillary tube into this 1/4" tube, pinching down, and soldering to make the connections.

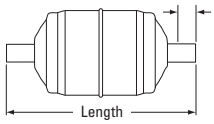
See page 6 for a description of construction details

Catch-All® Sealed Type Specifications

Type C-032 through C-609-S-T-HH

Maximum Rated Pressure of 44.8 bar





c UL us LISTED

Liquid Line and Suction Line

mm ▪ kg

"C" SERIES LIQUID LINE TYPE		SUCTION LINE TYPE	CONNECTION SIZE Inches	VOLUME OF DESSICANT cm^3	OVERALL LENGTH mm		SOLDER SOCKET DEPTH mm	DIAMETER of BODY mm	SHIPPING WEIGHT kg
SAE Flare	ODF Solder	ODF Solder			SAE Flare	ODF Solder			
C-032	C-032-S	—	1/4	49	106	97	10	44	0.2
—	C-032-CAP C-032-CAP-T	—	Extended 1/4 Male		—	148	—		
C-032-F	—	—	1/4 Male - Inlet 1/4 Female - Outlet		97	—	—		
C-032-FM	—	—	1/4 Female - Inlet 1/4 Male - Outlet		97	—	—		
C-033	C-033-S	—	3/8		119	99	11		
C-052	C-052-S	—	1/4	82	121	106	10	62	0.3
—	C-0525-S	—	5/16		—	111	11		
C-052-F	—	—	1/4 Male - Inlet 1/4 Female - Outlet		106	—	—		
C-052-FM	—	—	1/4 Female - Inlet 1/4 Male - Outlet		106	—	—		
C-053	C-053-S	—	3/8		132	109	11		
C-082	C-082-S	—	1/4	147	143	130	10	67	0.6
—	C-0825-S	—	5/16		—	135	11		
C-083	C-083-S	C-083-S-T-HH	3/8		154	133	11		
C-084	C-084-S	C-084-S-T-HH	1/2		160	138	13		
C-162	C-162-S	—	1/4	262	159	146	10	76	0.8
—	C-1625-S	—	5/16		—	151	11		
C-163	C-163-S	—	3/8		171	149	11		
C-164	C-164-S	C-164-S-T-HH	1/2		176	152	13		
C-165	C-165-S	C-165-S-T-HH	5/8		184	160	16		
—	—	C-166-S-T-HH	3/4		—	171	16		
—	C-167-S	C-167-S-T-HH	7/8		—	176	19		
C-303	C-303-S	—	3/8	492	246	226	11	76	1.6
C-304	C-304-S	—	1/2		251	229	13		
C-305	C-305-S	C-305-S-T-HH	5/8		259	235	16		
—	C-306-S	C-306-S-T-HH	3/4		—	245	16		
—	C-307-S	C-307-S-T-HH	7/8		—	249	19		
—	C-309-S	C-309-S-T-HH	1-1/8		—	248	24		
C-413	—	—	3/8	672	243	—	—	89	2.1
C-414	C-414-S	—	1/2		252	230	13		
C-415	C-415-S	—	5/8		260	237	16		
—	C-417-S	C-417-S-T-HH	7/8		—	249	19		
—	C-419-S	C-419-S-T-HH	1-1/8		—	248	24		
—	—	C-437-S-T-HH	7/8	787	—	263	19	121	3.6
—	—	C-439-S-T-HH	1-1/8			273	23		
—	—	C-4311-S-T-HH	1-3/8			278	25		
—	—	C-4313-S-T-HH	1-5/8			278	28		
—	C-607-S	C-607-S-T-HH	7/8	983	—	406	19	76	2.7
—	C-609-S	C-609-S-T-HH	1-1/8		—	406	24		

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See page 6 for a description of construction details