

Instruction Sheet

PA-00105

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STAS Steel Take-Apart Shell with Replaceable Filter-Drier Blocks and Filters

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Safety Instructions

1. Read Installation Instructions thoroughly. Failure to follow instructions may result in drier failure or system damage.
2. Do not remove blocks from can until just prior to installations. Early removal could result in contamination of the desiccant from surrounding atmosphere.
3. Check arrow for correct flow direction. **Reverse flow may cause internal damage.**
4. **CAUTION:** In a severely contaminated system avoid breathing acid vapors, and avoid contact with the skin or clothing from contaminated refrigerant. Dispose the contaminated refrigerant in a caustic solution. Failure to do so may cause personal injury.

5. Thoroughly leak test system after installation. Failure to do so could result in loss of refrigerant.
6. These products are intended for use on CFC, HCFC, and HFC refrigerants.

Do not use Emerson filter-driers on any other unlisted gas or fluid media without prior approval of the Emerson Climate Technologies Flow Controls Division Applications Engineering Department. Use on fluids not listed could result in chemical deterioration of the filter-drier.

7. The products listed in the bulletin should not be used for hot gas applications.

Liquid Line Service

1. For best results install the STAS steel take-apart shell in the liquid line between the receiver and the moisture-liquid indicator, solenoid valve and thermal expansion valve. The STAS shell may be mounted in any position; but the horizontal position is preferred in that any contaminants collected by the filter-drier blocks will be more easily removed when installing new filter-drier blocks.

NOTE: The side connection of the STAS shell must always be the inlet when used on liquid line service to ensure system protection from possible block rupture.

Suction Line Service

1. Locate the STAS shell in the suction line as close as possible to the compressor, but upstream of any vibration eliminator that might be present. Install the shell in a vertical position (outlet down), or as show in Figure 1 which permits oil return to the compressor and convenient removal of the internal hardware assembly.

NOTE: The side connection of the STAS shell must always be the inlet when conventional suction filters are used, or when filter-drier blocks are used for burnout clean-up. The side connection may be used as an outlet fitting *only when a reverse flow filter, F-48R, will be used* to prevent possible rupture with resulting discharge into the compressor.

1. Install the shell in a location that affords adequate clearance to remove the entire outlet retainer/filter-drier block assembly as noted below:

SHELL SIZE	REQUIRED CLEARANCE
STAS-48	7 1/4"
STAS-96	12 3/4"
STAS-144	18 1/4"
STAS-192	23 3/4"

2. Removal of the internal components of the STAS shell is not required before brazing into the system.
3. Purge an inert gas such as nitrogen thru the lines while brazing to prevent formation of copper oxides. **DO NOT USE OXYGEN.**
4. High temperature brazing alloys may be used as the STAS fittings are solid copper. Normal precautions should be taken by directing the flame away from the filter-drier shell, and the use of chill blocks, wet rags or other suitable heat protection to minimize damage to the paint surfaces adjacent to the fittings is recommended.

5. Test for leakage.
6. Install the filter-drier blocks as noted on page 2.

NOTE: On the initial installation of either filter-drier blocks or filters the cardboard spacers used to secure the inlet retainer (and couplings as required) should be discarded.

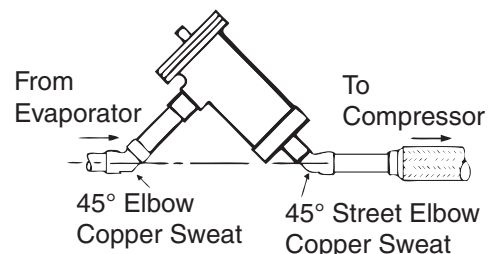
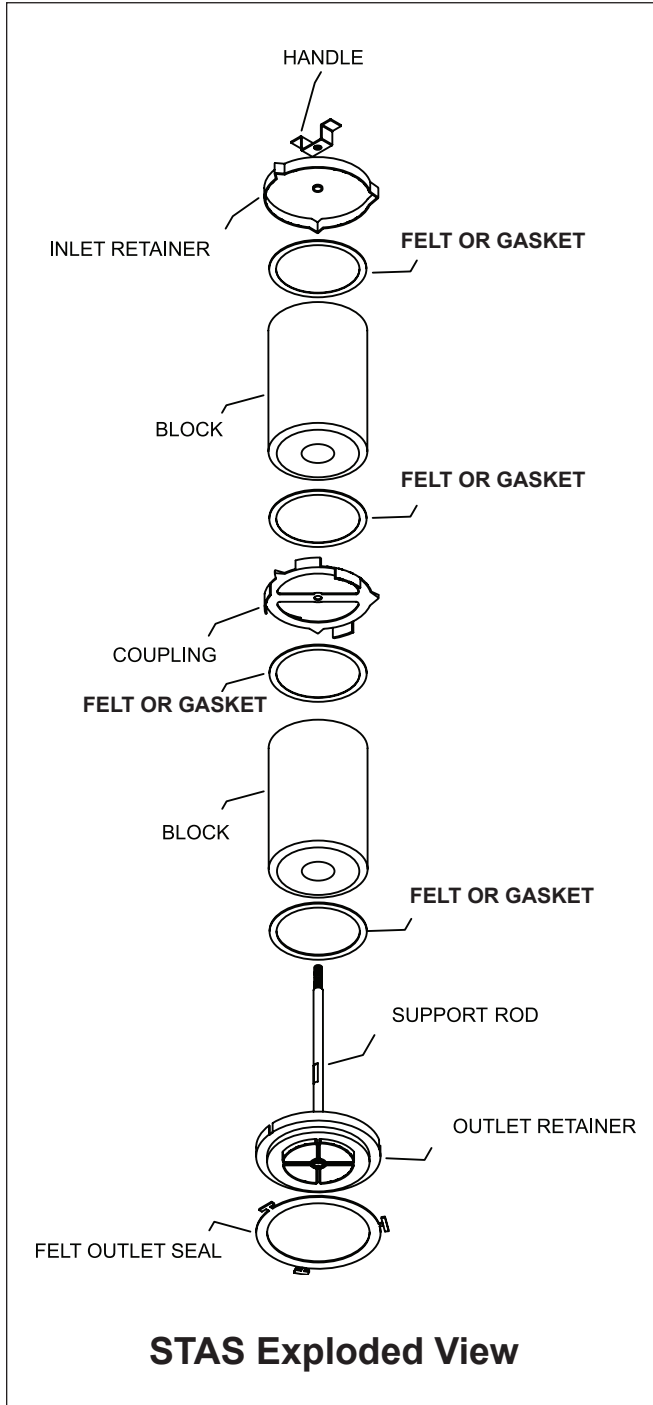


Figure 1

Installation Instructions for Replaceable Filter-Drier Blocks and Filters with STAS Series Take-Apart Shells

DO NOT OPEN BAG UNTIL READY TO INSTALL BLOCK OR SUCTION FILTER CORE



1. Pump down the system and the STAS shell completely.
2. Remove the cover bolts, cover, and examine the cover gasket. If the gasket surface is damaged as indicated by material adhering to the end of the shell the old gasket must be discarded.
3. Withdraw the internal assembly by pulling on handle.
4. Disassemble internal assembly by unscrewing handle while holding inlet retainer.
5. Remove contaminated filter-drier block or suction filter. For multiple block or core units remove coupling.
6. Clean all internal parts thoroughly, giving particular care and attention to the outlet screen.

NOTE: The ring seal is secured to outlet retainer and should not be replaced unless it has been severely contaminated as a result of a severe burnout.

7. Remove block or filter from its packaging and reassemble as rapidly as possible to minimize moisture contamination.
8. Install the new core in the outlet retainer taking care to place the end of the block with the tapered inside diameter against the outlet retainer. With multiple block or core units place coupling between each block or core. Position the inlet retainer over the final block or core, and screw the handle firmly in place. Carefully insert the assembled unit into the shell assembly.
9. Lightly coat the existing cover gasket in the flange cover with refrigeration grade oil if determined in step 2 to be suitable for reuse, or lightly coat a new gasket on both surfaces and carefully place in the groove of the flange cover.
10. Push the cover against the shell assembly taking care to locate the compression spring against the inlet retainer without hanging-up on the handle. Install a cover bolt in the shell. Using the slotted hole with the installed bolt, install the cover placing a cover bolt in the diagonally opposite bolt hole to hold the cover snugly against the shell edge.
11. Install the remaining cover bolts snugly.
12. Torque all cover bolts evenly in a criss-cross pattern to a torque of 30 ft. lbs. Maximum. [25 ft. lbs. maximum for the S-V suction line series which have stainless steel bolts.]
13. Test for leakage.
14. Start the compressor and put the system in operation. After system operation has stabilized check the moisture-indicator to verify that a sufficient amount of refrigerant is available.

NOTE: On suction line filter service record the pressure drop across the STAS on the special label supplied with the filter core and apply to the side of the shell assembly.

WARNING: DO NOT USE SUCTION FILTERS ON LIQUID LINE APPLICATIONS.

Compressor Motor Burnout Clean-Up Procedure Suction Line Filter-Drier Method

1. Determine the extent of the burnout. For mild burnouts where contamination has not spread through the system, it may be economical to save the refrigerant. Normally it is not economical to save the refrigerant charge if the system used less than 25 pounds of refrigerant.
A severe burnout exists if the oil is discolored, an acid odor is present and contamination products are found in the high and low side. With this condition caution should be exercised to avoid breathing the acid vapors and avoid contact with the skin of contaminated liquid. Dispose of the contaminated refrigerant in a caustic solution.
2. Thoroughly clean and replace all system controls such as thermal expansion valves, solenoids, check valves, reversing valves, etc. Remove all strainers and filter-driers.
3. Install replacement compressor and make a complete electrical check.
4. Make sure the suction line adjacent to compressor is clean. Install an Emerson STAS suction line shell complete with new filter-drier blocks. Install a new **oversized** Emerson liquid line filter-drier.
5. Pressurize and leak-test the system according to unit manufacturer's recommendations.
6. Triple evacuate to a least 50 microns. Break the vacuum with clean, dry refrigerant at 0 psig.
7. Charge the system to equipment manufacturer's recommendations.
8. Start the compressor and put the system in operation. Record the pressure drop across the STAS suction line shell on the enclosed label and apply to the side of the shell.
9. Replace the suction line filter-drier blocks if the pressure drop becomes excessive.
10. Observe the system during the first four hours. Repeat step 9 as often as required until no further change in pressure drop is observed.
11. After the system has been in operation for 48 hours, check the condition of the oil with the **Acid Alert** test kit. If the oil test indicates an acid condition, replace both the liquid and suction line filter-drier.
12. Check the system again after approximately two weeks of operation. If the oil is still discolored, replace the liquid and suction line filter-drier.
13. Clean-up is complete when the oil is clean and odor free, and is determined to be acceptable with the **Acid Alert** test kit.
14. Replace the suction line filter-drier blocks with suction line filters to minimize suction line pressure drop, but still providing compressor protection.

For detailed burnout clean-up procedure and recommendations, consult the RSES Service Manual Section 91.

NOTE: Allow the liquid-line filter-drier to remain in the system for continued compressor protection.

STAS Series Specifications						
STAS Shell	Required # of Blocks or Cores	Filter-Drier Service			Suction Filter Service	
		Filter-Drier Blocks	Desiccant Volume Cu. In.	Filter Area Sq. In.	Suction Filter	Filter Area Sq. In.
STAS-48	1	D-48 H-48 W-48	48	69	F-48 F-48R	105
STAS-96	2		96	138		210
STAS-144	3		144	207		315
STAS-192	4		192	276		420

