Suction Line Filter-Driers: ASF/ASD/SFD/A-TS/ASK

Features

- Full copper fittings – easy to sweat in
- Rugged steel shells for shock resistance
- Low pressure drop – full flow fittings
- Dual access valves
- Corrosion resistant finish
- UL listed – file # SA3124
  # SA715T (A-TS)
- Maximum working pressure: 500 psig
- Burst pressure: 2500 psig

The Emerson Advantage

Emerson suction line filter-driers incorporate a protective filter, plus desiccant blended for maximum moisture and acid removal. Compressor manufacturers recommend the installation of suction line filter-driers to protect their equipment from contaminants left in the system after a burnout. These suction line filter-driers include protection from moisture and organic or inorganic acids, resulting from burnouts, or chemical changes in the system refrigerant or oil. They are specially suited for system clean-up after a burnout, or when major work has been performed on the system.

Selection Warning

Emerson suction line filter-driers are intended for use on the following refrigerants up to the maximum working pressure marked on the product: CFC's, HFC's, HCFC's, mineral oil, POE and Alkybenzene.

Do not use Emerson suction line filter-driers on any other fluid media without written 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.

Safety and Installation Instructions

1. Read these instructions thoroughly. Failure to follow instructions may result in drier failure, system damage, or personal injury.
2. The system must be pumped down and line depressurized before attempting to install. Failure to do so can result in personal injury
3. **Caution:** Extreme care should be taken in handling contaminated refrigerant to prevent personal injury. Failure to do so may result in personal injury.
4. Do not remove seal caps until ready for installation. The seal caps should be removed by unscrewing the plastic caps if SAE connections, or pulling out with long nose pliers if ODF connections.
5. **Caution:** Do not install access valve cores until all brazing is completed. Installation prior to brazing may cause damage to valve cores seals.
6. The filter-drier may be installed in any position. For best results, locate the filter-drier as close as possible to the inlet of the compressor installation upstream of vibration eliminators is suggested. When the piping arrangement results in excessive stress on refrigerant line, the filter-drier should be supported by a suitable bracket.
   Refer to Table 1 for roughing-in dimensions.
7. **Warning: Install with arrow pointing in direction of flow (toward compressor). Reverse flow may cause internal damage.**
8. Clean and deburr piping ends to provide a good brazing surface.
9. Use an inert gas, such as nitrogen, to pass thru the lines while brazing to prevent formation of copper oxides.
10. High temperature brazing alloys may be used. Normal precautions should be taken by directing the flame away from the filter-drier shell. Use chill blocks, wet rags, or other suitable heat protection for the filter-drier.
11. When the shell has cooled, install valve cores with tool provided and replace seal caps. Do not charge system until valve cores are installed.
12. To prevent twisting the refrigerant line, use a back-up wrench on the flats supplied on SAE connections.
13. **Warning: Thoroughly leak-test the system after installation. Failure to do so could result in loss of refrigerant.**
14. The products listed on this sheet should not be used for liquid line or hot gas applications.

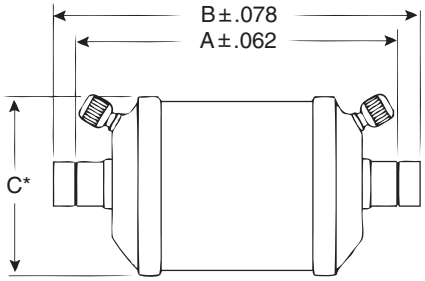
Compressor Motor Burnout Clean-up Procedure – Suction Line Method

1. Determine the extent of the burnout. For mild burnouts, where the contamination has not spread throughout the system – it is economical to save the refrigerant charge if the system has service valves on the compressor. A severe burnout exists if the oil is discolored, and acid odor is present, and contamination products are found on the high and low side. In severe burnouts, extreme caution should be exercised to avoid breathing the acid vapors and to prevent contaminated liquid from making contact with skin.
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 a replacement compressor and make a complete electrical check.
4. Make sure the suction line adjacent to the compressor is clean. Install an Emerson suction line filter-drier.
5. Pressure and leak-test the system according to the unit manufacturer's recommendations.
6. Triple evacuate to at least 500 microns. Break the vacuum with clean, dry nitrogen at 0 psig.
7. Charge the system through an Emerson liquid line filter-drier to equipment manufacturer's recommendations.
8. Start the compressor and put the system in operation. Record the pressure drop across the suction line filter-drier on the enclosed label and apply to the side of the drier shell.
9. Replace the suction line filter-drier if the pressure drop becomes excessive.
10. Observe the system during the first 4 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 Emerson Acid Alert test kit. IF the oil test indicates an acid condtion, replace both the liquid and suction line filter-drier. See fig. 1.
12. Check the system again after approximately 2 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 Emerson Acid Alert test kit.

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

Table 1 — Rough-in Dimensions

Filter-Drier Type	Filter Type	Connection	A	B	C
ASD 28S3-VV	ASF 28S3-VV	3/8 ODF	4-23/32	5-19/32	
ASD 28S4-VV	ASF 28S4-VV	1/2 ODF	4-11/16	5-11/16	
ASD 35F5-VV	ASF 35F5-VV	5/8 SAE	—	7-9/16	
ASD 35S5-VV	ASF 35S5-VV	5/8 ODF	5-9/32	6-17/32	
ASD 45S6-VV	ASF 45S6-VV	3/4 ODF	6-1/2	7-3/4	3-11/16
ASD 45S7-VV	ASF 45S7-VV	7/8 ODF	6-7/16	7-15/16	
ASD 50S9-VV	ASF 50S9-VV	1-1/8 ODF	7-1/32	8-27/32	
ASD 75S11-VV	ASF 75S11-VV	1-3/8 ODF	10-5/16	12-1/4	
ASD 75S13-VV	ASF 75S13-VV	1-5/8 ODF	9-29/32	12-5/32	
SFD 08F3-VV		3/8 SAE	—	5-1/2	
SFD 08S3-VV		3/8 ODF	5-5/16	6-3/16	
SFD 08F4-VV		1/2 SAE	—	5-3/4	3-1/8
SFD 08S4-VV		1/2 ODF	3-15/16	5	
SFD 08S5-VV		5/8 ODF	3-29/32	5-5/32	
SFD 08S6-VV		3/4 ODF	4-5/16	5-9/16	
SFD 13F3-VV		3/8 SAE	—	5-1/2	
SFD 13S3-VV		3/8 ODF	3-31/32	4-27/32	
SFD 13F4-VV		1/2 SAE	—	5-3/4	
SFD 13S4-VV		1/2 ODF	3-15/16	4-15/16	
SFD 13F5-VV		5/8 SAE	—	6-1/8	
SFD 13S5-VV		5/8 ODF	3-29/32	5-5/32	3-11/16
SFD 13S6-VV		3/4 ODF	4	5-1/4	
SFD 13S7-VV		7/8 ODF	4-1/4	5-3/4	
SFD 27S7-VV		7/8 ODF	6	7-1/2	
SFD 27S9-VV		1-1/8 ODF	5-13/16	7-5/8	
SFD 54S11-VV		1-3/8 ODF	10-5/16	12-1/4	
SFD 54S13-VV		1-5/8 ODF	9-29/32	12-5/32	
A-TS/ASK-165S-VV		5/8 ODF	5-3/16	6-7/16	
A-TS/ASK-166S-VV		3/4 ODF	5-5/16	6-3/4	
A-TS/ASK-167S-VV		7/8 ODF	5-1/2	7	3-3/16
A-TS/ASK-306S-VV		3/4 ODF	8-7/16	9-11/16	
A-TS/ASK-307S-VV		7/8 ODF	8-3/8	9-7/8	
A-TS/ASK-309S-VV		1-1/8 ODF	8-7/16	10-1/4	



*DOES NOT INCLUDE WELD BEAD

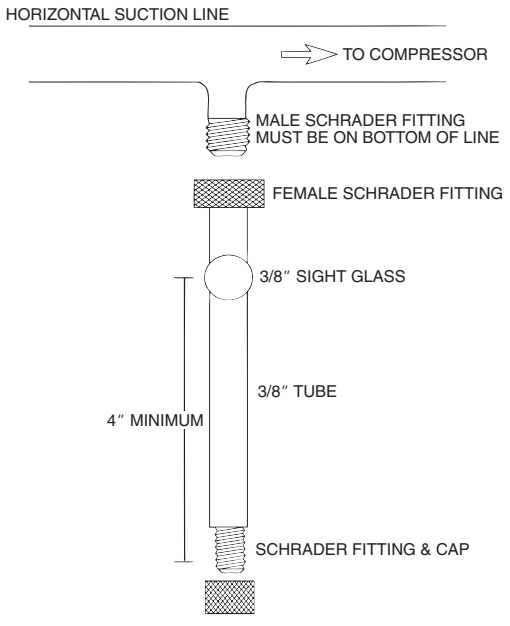


Figure 1

The piping arrangement shown will allow you to remove an oil sample from a system with a hermetic compressor, without having to remove the charge.