

STG SERIES | *Bi-Flow Filter Driers*

(Standard range: for fluids GROUP 2 according to Directive 2014/68/EU or GROUP A1 according to ANSI-ASHRAE 34-2016)



The filter driers of series STG are used in refrigeration system with bidirectional flow to absorb moisture and acid in the system and to filter out the impurities.

FEATURES

- HIGHLY EFFICIENT IN MOISTURE ABSORPTION, FILTERING IMPURITY, ACID, PAINT REMAINS AND MUD REMOVAL
- HYBRID DESICCANT
- DURABLE AND SOLID FILTER CORES
- FILTERING FINENESS: 20µm
- 20 MICRON FILTRATION RATING
- CORROSION RESISTANT PAINTING CAN SURVIVE SALT SPRAY TEST OF 500 HOURS
- CONNECTION TYPE: FLARE OR SOLDER

GENERAL SPECIFICATION

- Applicable for all common HCFC, HFC, HFO refrigerants, UL approved refrigerants: R12, R22, R134a, R600a, R407C, R410A, R123, R152a, R417A, R422A, R422D, R426A, R427A, R290, R600, R1234yf, R1234ze(E), R404A, R507, R448A, R449A, R452A, R450A, R455A, R513A, R407A, R407F, R401a, R401B, R401C, R447A, R452B, R454B, R454C, R500, R502, R446A, R32, R124, R422, R444A, R444B, R445A, R447B, R449B, R451A, R451B, R452C, R454A, R455B, R457A, R1336mzz(Z), R143a, R471A, R515B
- Ambient temperature min./max.: -30°C / +70°C
- Medium temperature TS min./max.: -30°C / +120°C
- Max. operating pressure PS: 4,83 MPa (48,3 bar)
- Installation position: preferably installed in liquid line
- Certifications: UL/CSA and PED declaration
- UL file number: SA 11830

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TECHNICAL PARAMETERS

Desiccant Selection Table:

	Medium Type	80% 3Å Desiccant and 20% Active Alumina	100% 3Å Desiccant
Ref.	HFC	Applicable	Applicable
	HCFC	Applicable	Applicable
	HFO	Applicable	Applicable
Oil ¹	Mineral oil or AB	Applicable	Applicable
	Pure POE or PAG	Applicable	Applicable
	POE or PAG with additive	Not Applicable	Applicable

Note: 1) When the systems use oil with additive, it is not recommended to use a core with alumina

MODEL DESIGNATION EXAMPLE

Position Number						According to Model Designation Legend	
1	2	3	4	5	6		
STG	B	08	03	0	901	➡	Bidirectional filter drier
STG	B	08	03	0	901	➡	Molded porous core – 100% 3Å desiccant
STG	B	08	03	0	901	➡	8 in ³ internal volume
STG	B	08	03	0	901	➡	3/8" connection size
STG	B	08	03	0	901	➡	ODF solder connections
STG	B	08	03	0	901	➡	Standard product

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MODEL DESIGNATION LEGEND

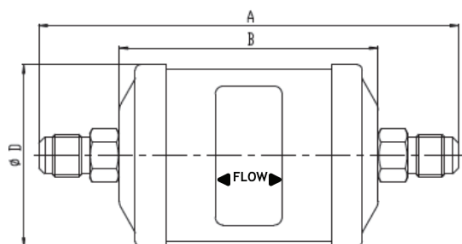
Position Number	Model Designation Legend		
1	Product Code	Filter Drier Series	
	STG	Indicates Bidirectional filter drier	
2	Filter Core	Structure and Material	
	B	Solid core, 100%3Å desiccant	
	F	Solid core, 80% 3Å desiccant and 20% active alumina	
3	Internal Volume	Expressed in [inch ³]	Expressed in [cm ³]
	03	3	49
	05	5	82
	08	8	131
	16	16	262
	30	30	492
4	Connection Size	Pos. 5 shows "0": Solder [inch]	Pos. 5 shows "4": SAE Flare [inch]
	02	1/4	1/4
	25	5/16	-
	03	3/8	3/8
	04	1/2	1/2
	05	5/8	5/8
	06	3/4	3/4
	07	7/8	7/8
	09	1-1/8	-
	Connection Size	Pos. 5 shows "1": Solder [mm]	
	06	6	
	(08) *	(5/16" version can be used e.g. STG-B08 250)	
	10	10	
	12	12	
	(16) *	(5/8" version can be used e.g. STG-B16 050)	
	(22) *	(7/8" version can be used e.g. STG-B16 070)	
	28	28	
5	Pipe Connection	Type	
	0	Solder with inch connections	
	1*	Solder with metric connections	
	4	SAE flare connections	
6	Version Number	Description	
	901	901 = Standard product, xxx = Special product	

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GENERAL CHARACTERISTICS OF STG-B FILTER - FLARE CONNECTION

Filter	Model ¹⁾	Part Number	Nominal Volume		Connection	Dimensions & Weight				PED Category ³ (Fluid Group 2)
					SAE Flare	ØD	B	A	Weight	
			(in ³)	(cm ³)	(in)	(mm)	(mm)	(mm)	(g)	
STGB052	STG-B05 024-901	STG-30001	3	82	1/4	69	76	123	450	Art. 4.3
STGB053	STG-B05 034-901	STG-30002			3/8			137		
STGB054	STG-B05 044-901	STG-30003			1/2			145		
STGB082	STG-B08 024-901	STG-30004	8	131	1/4	69	98	145	580	Art. 4.3
STGB083	STG-B08 034-901	STG-30005			3/8			159		
STGB084	STG-B08 044-901	STG-30006			1/2			167		
STGB163	STG-B16 034-901	STG-30007	16	262	3/8	81	118	179	900	Art. 4.3
STGB164	STG-B16 044-901	STG-30008			1/2			187		
STGB165	STG-B16 054-901	STG-30009			5/8			196		
STGB303	STG-B30 034-901	STG-30010	30	492	3/8	81	193	254	1700	Art. 4.3
STGB304	STG-B30 044-901	STG-30011			1/2			262		
STGB305	STG-B30 054-901	STG-30012			5/8			271		
STGB306	STG-B30 064-901	STG-30013			3/4			271		

Note: 1) Available also as industrial package. Contact Sanhua for more details.
 2) Dimensions are rounded up to integral mm
 3) PED Directive 2014/68/EU. Category evaluated considering product as a “vessel”



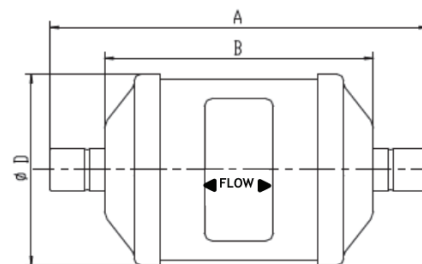
Flare Connection

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GENERAL CHARACTERISTICS OF STG-B FILTER - SOLDER CONNECTION

Filter	Model (in)	Part Number (multi package) ¹ (in)	Model (mm)	Part Number (multi package) ¹ (mm)	Nominal Volume		Connection		Dimensions & Weight				PED Category ³ (Fluid Group 2)
							Solder		ØD	B	A	Wgt.	
					(in ³)	(cm ³)	(in)	(mm)	(mm)	(mm)	(mm)	(g)	
STGB052s	STG-B05 020-901	10235005902	STG-B05 061-901	10235007602	5	82	1/4	6	69	76	114	450	Art. 4.3
STGB053s	STG-B05 030-901	10235006002	STG-B05 101-901	10235007802			3/8	10			114	450	
STGB054s	STG-B05 040-901	10235006102	STG-B05 121-901	10235007902			1/2	12			124	450	
STGB082s	STG-B08 020-901	10235006202	STG-B08 061-901	10235007702	8	131	1/4	6	69	98	136	580	Art. 4.3
STGB0825s	STG-B08 250-901	10235007402	STG-B08 250-901	10235007402			5/16	8			136	580	
STGB083s	STG-B08 030-901	10235006302	STG-B08 101-901	10235008002			3/8	10			136	580	
STGB084s	STG-B08 040-901	10235006402	STG-B08 121-901	10235008102			1/2	12			146	580	
STGB163s	STG-B16 030-901	10235006602	STG-B16 101-901	10235008202	16	262	3/8	10	81	118	156	900	Art. 4.3
STGB164s	STG-B16 040-901	10235006502	STG-B16 121-901	10235008402			1/2	12			166	900	
STGB165s	STG-B16 050-901	10235006702	STG-B16 050-901	10235006702			5/8	16			166	900	
STGB167s	STG-B16 070-901	10235006802	STG-B16 070-901	10235006802			7/8	22			178	900	
STGB303s	STG-B30 030-901	10235006902	STG-B30 101-901	10235008302	30	492	3/8	10	81	193	231	1700	Art. 4.3
STGB304s	STG-B30 040-901	10235007002	STG-B30 121-901	10235008502			1/2	12			241	1700	
STGB305s	STG-B30 050-901	10235007102	STG-B30 050-901	10235007102			5/8	16			241	1700	
STGB306s	STG-B30 060-901	10235007202	-	-			3/4	-			253	1700	
STGB307s	STG-B30 070-901	10235007302	STG-B30 070-901	10235007302			7/8	22			253	1700	
STGB309s	STG-B30 090-901	10235007502	STG-B30 281-901	10235010202			1-1/8	28			263	1700	

- Note:**
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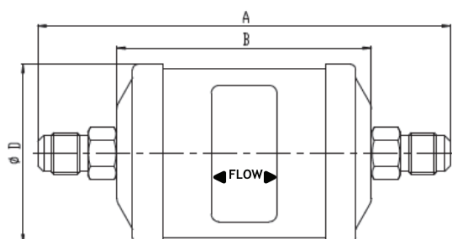
Solder Connection

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GENERAL CHARACTERISTICS OF STG-F FILTER - FLARE CONNECTION

Filter	Model ¹⁾	Part Number	Nominal Volume		Connection	Dimensions & Weight				PED Category ³ (Fluid Group 2)
					SAE Flare	ØD	B	A	Weight	
			(in ³)	(cm ³)	(in)	(mm)	(mm)	(mm)	(g)	
STGB052	STG-F05 024-901	10235010902	5	82	1/4	69	76	123	450	Art. 4.3
STGB053	STG-F05 034-901	10235011002			3/8			137		
STGB054	STG-F05 044-901	10235011102			1/2			145		
STGB082	STG-F08 024-901	10235011902	8	131	1/4	69	98	145	580	Art. 4.3
STGB083	STG-F08 034-901	10235012002			3/8			159		
STGB084	STG-F08 044-901	10235012102			1/2			167		
STGB163	STG-F16 034-901	10235014902	16	262	3/8	81	118	179	900	Art. 4.3
STGB164	STG-F16 044-901	10235015002			1/2			187		
STGB165	STG-F16 054-901	10235015102			5/8			196		
STGB303	STG-F30 034-901	10235013802	30	492	3/8	81	193	254	1700	Art. 4.3
STGB304	STG-F30 044-901	10235013502			1/2			262		
STGB305	STG-F30 054-901	10235013602			5/8			271		
STGB306	STG-F30 064-901	10235013702			3/4			271		

- Note:**
- 1) Delivery time on request
 - 2) Available also as industrial package. Contact Sanhua for more details.
 - 3) Dimensions are rounded up to integral mm
 - 4) PED Directive 2014/68/EU. Category evaluated considering product as a "vessel"



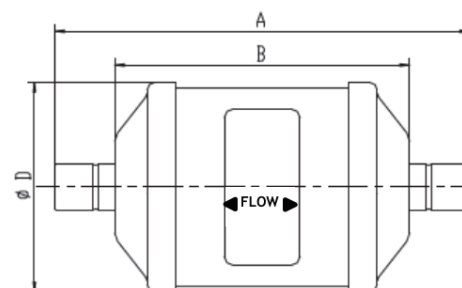
Flare Connection

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GENERAL CHARACTERISTICS OF STG-F FILTER - SOLDER CONNECTION

Filter	Model (in)	Part Number (multi package) ¹ (in)	Model (mm)	Part Number (multi package) ¹ (mm)	Nominal Volume		Connection		Dimensions & Weight				PED Category ³ (Fluid Group 2)
							Solder		ØD	B	A	Wgt.	
					(in ³)	(cm ³)	(in)	(mm)	(mm)	(mm)	(mm)	(g)	
STGF052s	STG-F05 020-901	10235010302	STG-F05 061-901	10235010602	5	82	1/4	6	69	76	114	450	Art. 4.3
STGF053s	STG-F05 030-901	10235010402	STG-F05 101-901	10235010702			3/8	10			114	450	
STGF054s	STG-F05 040-901	10235010502	STG-F05 121-901	10235010802			1/2	12			124	450	
STGF082s	STG-F08 020-901	10235011202	STG-F08 061-901	10235011602	8	131	1/4	6	69	98	136	580	Art. 4.3
STGF0825s	STG-F08 250-901	10235011302	STG-F08 250-901	10235011302			5/16	8			136	580	
STGF083s	STG-F08 030-901	10235011402	STG-F08 101-901	10235011702			3/8	10			136	580	
STGF084s	STG-F08 040-901	10235011502	STG-F08 121-901	10235011802			1/2	12			146	580	
STGF163s	STG-F16 030-901	10235012202	STG-F16 101-901	10235012602	16	262	3/8	10	81	118	156	900	Art. 4.3
STGF164s	STG-F16 040-901	10235012302	STG-F16 121-901	10235012702			1/2	12			166	900	
STGF165s	STG-F16 050-901	10235012402	STG-F16 050-901	10235012402			5/8	16			166	900	
STGF167s	STG-F16 070-901	10235012502	STG-F16 070-901	10235012502			7/8	22			178	900	
STGF303s	STG-F30 030-901	10235013902	STG-F30 101-901	10235013102	30	492	3/8	10	81	193	231	1700	Art. 4.3
STGF304s	STG-F30 040-901	10235014002	STG-F30 121-901	10235013202			1/2	12			241	1700	
STGF305s	STG-F30 050-901	10235014102	STG-F30 050-901	10235014102			5/8	16			241	1700	
STGF306s	STG-F30 060-901	10235014202	-	-			3/4	-			253	1700	
STGF307s	STG-F30 070-901	10235012902	STG-F30 070-901	10235012902			7/8	22			253	1700	
STGF309s	STG-F30 090-901	10235013002	STG-F30 281-901	10235013402			1-1/8	28			263	1700	

Note: 1) Delivery time on request
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Solder Connection

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SELECTION TABLE

Model	Capacity [kW] ^{1,3}					Moisture Absorption [gram H ₂ O]							
	R134a	R404A R407A	R22	R407C ²	R410A	R134a		R404A R507A		R407C ² R410A		R22	
						75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F
						23,9°C	51,7°C	23,9°C	51,7°C	23,9°C	51,7°C	23,9°C	51,7°C
STGB052	7,4	5,3	7,7	7,7	7,7	4,3	4,0	4,1	3,8	3,7	3,4	4,1	3,7
STGB053	16,5	11,6	16,9	16,5	16,9								
STGB054	25,0	17,6	25,3	25,0	25,3								
STGB082	8,8	6,0	8,8	8,8	8,8	9,8	9,0	9,2	8,6	8,5	7,8	9,2	8,5
STGB0825	15,8	10,9	16,2	15,8	16,2								
STGB083	17,2	12,0	17,6	17,2	17,6								
STGB084	25,7	17,9	26,4	26,0	26,4								
STGB163	19,7	13,7	20,0	19,7	20,0	17,6	16,3	16,6	15,5	15,2	14,0	16,6	14,2
STGB164	30,2	21,5	30,9	30,6	30,9								
STGB165	34,1	23,9	34,8	34,5	35,2								
STGB167	42,2	29,9	42,9	42,6	43,3								
STGB303	25,0	17,6	25,3	25,0	25,7	41,3	38,4	38,9	36,5	35,9	32,9	39,1	33,1
STGB304	30,9	21,8	31,7	31,7	32,0								
STGB305	35,5	25,0	36,2	35,9	36,6								
STGB306	39,6	28,1	40,1	39,7	40,4								
STGB307	46,4	32,4	47,1	46,8	47,5								
STGB309	54,2	38,0	55,2	54,5	55,6								

Note: 1) The above data is based on clean system at ideal conditions: with impurities accumulated in the filter, the capacity may decrease
 2) R407C capacity is based on dew point conditions
 3) Given capacity is for all available types of connection for the same model: flare/solder [inch] and equivalent solder [mm]

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SELECTION TABLE

Model	Capacity ^{1, 2} [kW]						
	R134a	R407F	R448A	R449A	R452A	R450A	R513A
STGB052	7.1	7.85	7.15	7.05	5.4	6.85	6.15
STGB053	15.9	17.5	15.9	15.7	12.1	16.5	13.7
STGB054	24	26.5	24.1	23.8	18.3	23.3	20.8
STGB082	8.45	9.3	8.5	8.35	6.45	8.2	7.3
STGB0825	15.2	16.7	15.2	15	11.55	14.7	13.1
STGB083	16.5	18.2	16.6	16.4	12.6	16	14.3
STGB084	24.7	27.3	24.7	24.5	18.8	23.8	21.4
STGB163	19	20.8	19	18.7	14.4	18.3	16.4
STGB164	29	32	29	28.7	22.1	28	25
STGB165	32.7	36	32.8	32.5	25	31.6	28.4
STGB167	40.6	44.6	40.6	40.2	30.8	39.2	35
STGB303	24	26.4	24.1	23.8	18.3	23.3	20.7
STGB304	29.7	32.7	29.7	29.4	22.6	28.7	25.6
STGB305	34.2	37.5	34.2	33.8	26	33	29.5
STGB306	38	42	38.2	37.8	29	36.8	33
STGB307	44.6	49	44.6	44	34	43	38.6
STGB309	52	57.5	52.4	51.7	39.6	50.2	45

Note: 1) The above data is based on clean system at ideal conditions: with impurities accumulated in the filter, the capacity may decrease
 2) Given capacity is for all available types of connection for the same model: flare/solder [inch] and equivalent solder [mm]

SELECTION FORMULAS

Filter driers for liquid line are manufactured in compliance with ARI Standard 710. Maximum flow rate of liquid refrigerant at a differential pressure of 0,07bar (1psi) is indicated by kW (ton) which is based on the temperature of liquid refrigerant 30°C (86°F), the evaporating temperature of -15°C (5°F) and the following mass flow:

- 0,40 kg/min/kW (3.1 lb/min/ton) R134a
- 0,53 kg/min/kW (4.1 lb/min/ton) R404A, R507A
- 0,39 kg/min/kW (3.0 lb/min/ton) R22, R407C
- 0,36 kg/min/kW (2.8 lb/min/ton) R410A

Note: Data on water capacity is based on the following equilibrium point dryness (EPD), ASHRAE Standard 63.1:

- 60ppm R22
- 50ppm R134a
- 50ppm R404A
- 50ppm R407C
- 50ppm R410A
- 50ppm R507A