

Solar Control

SGE

Condensing Gas - Solar Water Heater

SGE - 40/60

Storage Capacity 370 Litres

Range of Output 37,000 Kcal/Hr and 52,000 Kcal/Hr

SGE

SGE is a Solar-Gas heating system in a compact arrangement, suitable for connecting up to 15 collectors. The condensation technology used guarantees high user comfort and maximum solar contribution.

FEATURES

TERIORES	
EFFICIENCY	Upto 96% on GCV and 107% on NCV value of Gas.
GLASS LINED TANK	Tank interior coated with glass specially developed by A.O Smith for water heater use. Tank rated at 8 bar working pressure. Tank size 370 Litres.
INTELLIGENT SOLAR CONTROLLER	Maximum solar contribution through fully integrated intelligent solar controller, heat comfort guaranteed.
DRAIN-BACK SYSTEM	Solar collectors available with ingenious drain-back system to prevent temperature stagnation in installation.
FOOTPRINT	Very small footprint because of integrated solar heat exchanger. One control and display unit for the complete installation.
BURNER	Automatic gas/air premix burning system including burner modulation.
ANODES	Delivered with low maintenance inert anodes.
FLUE GASES	Low flue gas temperature, NOx emission \leq 30 ppm (dry – air free) – NOx class 5. Flexible flue options (maximum length 100m) allow installations to be placed almost anywhere
NOISE LEVEL	Whisper quiet operation (<45 dB(A)) at 2m distance from roof duct).
PROGRAMMABLE	Programmable for legionella purge cycle.
WEEK TIMER	Easy fault diagnosis and computer controlled digital week timer. Varying water temperature setting from 40 °C to 80 °C with use of Week Timer.
WARRANTY	All SGE water heaters receive a three years warranty on the tank and one year on parts.
OTHER FEATURES	 Voltage-free contact for general fault indication to BMS Delivered on steel base for convenient transport and installation.
OPTIONS	Can use Natural gas or LPG as a backup.

ABOUT A. O. SMITH

A. O. SMITH: WORLDWIDE	 A. O. Smith is the largest manufacturer in North America, and one of the world's leading manufacturers of residential and commercial water heating equipment, offering a comprehensive product line and featuring the best-known brands in North America and China. Through an inspired blend of innovation, teamwork, technology and industry expertise, A. O. Smith has created a full line of state-of-the-art water heaters and boilers that combine incredible performance with higher-than-ever energy efficiency. A. O. Smith is a global leader applying innovative technology and energy-efficient solutions to products marketed worldwide. A. O. Smith is also one of the largest manufacturers of electric motors for residential and commercial applications in North America.
	A. O. Smith developed and patented a process to glass-line water heaters. And over the years, A. O. Smith has gained the respect and support of homeowners, contractors, architects, and specifying engineers in over 60 countries by providing innovative energy efficient products designed for years of trouble-free service.
A. O. SMITH: INDIA	A. O. Smith India Water Heater Private Limited was established in 2005. Backed by 70 years of proven technological advances A. O. Smith India has created a stylish design with features demanded by the Indian consumer and sucessfully marketed a range of domestic water heaters that in a short period of time have become the most trusted brand in it's category.

sge Technical specifications

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Natural gas			
Output	Kcal/hr	37,000	52,000
Output	kW	42.8	60.4
Inlet pressure	mbar	20	20
Gas consumption **	m3/h	4.0	5.8
Flue gas discharge	°C	50	60
LPG consumption **	Kg/hr	3.2	4.6
General			
Nex	nnm	< 30	< 30
Noise level	dB	<u> </u>	<u> </u>
Efficiency (Net)	%	107	106
Weight empty	ka	245	245
Maximum weight	ka	615	615
Storage capacity		370	370
Max, temperature setting	°C	80	80
Maximum working pressure	kPa (bar)	800 (8)	800 (8)
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Draw-off capacity ***			
Tset = 80°C/ Tcold = 10°C			
30 min. ∆T=44°C	I	470	680
60 min. ∆T=44°C	I	890	1300
90 min. ∆T=44°C	I	1400	1900
120 min. ∆T=44°C	I	1800	2500
Continuous ∆T=44°C	l/h	837	1181
Heating-up time ∆T=44°C	min.	15	10
30 min. ∆T=50°C		400	560
60 min. ∆T=50°C	I	760	1100
90 min. ∆T=50°C		1200	1600
120 min. ΔT=50°C		1500	2200
Continuous ∆T=50°C	I/h	736	1039
Heating-up time $\Delta I = 50^{\circ}C$	min.	17	12
$\Delta U \min \Delta I = 55^{\circ} C$	 	340	480
bu min. $\Delta I = 55^{\circ}C$	1	680	950
$30 \text{ min} \Delta 1=33 \text{ C}$	1	1400	1000
$120 \text{ mm} \Delta 1=55 \text{ C}$	l l/b	1400	1900
Continuous $\Delta I = 25 \text{ C}$	i/II min	19	545 12
nearing-up time AT=55 C		10	CI
Electrical data			
Power consumption	W	60	120
Power supply	VAC/Hz	230 (-15% +10%	6 VAC)/50 (+/- 1Hz)
Shinning data			
Weight incluse kaging	ka	256	256
Width packaging	ĸy	200	200
Height packaging	mm	2075	2075
Denth packaging	mm	945	945
Depth packaging		<u></u>	ر ب ر.

** Gas consumption at 15°C and 1 bar, NCV of Natural Gas 8,500 Kcal/Nm3, LPG 10,750 Kcal/Kg.

sge Dimensions







		5GE 40	5GE 60
•		2055	2055
A		2055	2055
		490	490
		705	705
<u>с</u>		925	925
Г С		800	800 / 150
G		1007150	1007150
H		1995	1995
HX		260	260
ПУ		370	370
N.		1945	1945
		185	185
IN Nb.		2055	2055
		205	205
P D		303	300
r c		160	160
<u></u> т		620	620
1		205	2050
V		305 1025	305
V \\\/		765	765
VV		1465	1465
		1400	1400
7		000 7FF	000 755
2		755	/55
1	Cold water inlet	R1 1/2	
7	Hot water outlet	R1 /2	
2	Gas valve connection	Rn 3/4	
4	Drain valve connection	3/4"	
5	T&P connection	,4 1″ - 11	5 NPT
6	Clean out	95x70)
7	Condense water connection	Ø 40	·
9	Connection coil inlet		
10	Connection coil outlet	Rp1	
11	Connection electric element	R1 ¹ /2	
12	Connection inlet plate heat exchanger	Rp1	
13	Connection outlet plate heat exchanger	Rp1	
14	Connection recirculation	Rp1	
Din	nensions in mm.		

sge Installation diagrams

UNVENTED



VENTED



- 3 T&P valve
- 4 Stop valve
- 5 Non-return valve
- 6 Circulation pump
- 9 Drain valve
- 10 Gas valve
- Isolating valve
 Temperature meter
- 13 Condensate drain
- 14 Hot water outlet
- 15 Expansion valve
- 16 Expansion vessel
- 17 3-way valve
- 18 Water cistern
- 19 Float valve
- 23 Pressure valve
- 26 Air bleed
- 37 Flow sensor
- 38 Solar pump station
- 42 Junction box
- S1 T-collector
- S2 T-tank
- S4 T-return solar
- A Cold water supply
- B Hot water outlet
- C Circulation pipe
- D Gas supply
- E Water overflow
- F Coil inlet
- G Coil outlet
- H Expansion pipe

A.O. Smith unvented system kits utilise combination valves.

Further installation and connection details can be found in the installation manual.

sge Installation options



Further information on the specific flue discharge materials can be found in the installation manual.

SGE

Minimum space requirements



A SGE water heater should be installed according category B23, C13, C33, C43 or C53*.

	SGE 40	SGE 60
Concentric		
Diameter (mm)	100/150	100/150
Max. length (m)	15	15
Max. 45/90° bends	4	4
Parallel (standard diameter) Diameter (mm)	100	100
Max. length (m)	25	25
L _{equivalent} /bend 90° (m)	4,6	4,6
L _{equivalent} /bend 45° (m)	1,2	1,2
Parallel (larger diameter for	more length)	
Diameter (mm)	130	130
Max. length (m)	100	100
L _{equivalent} /bend 90° (m)	2,4	2,4
L _{equivalent} /bend 45° (m)	1,4	1,4

* All SGE water heaters are also approved for installations where the unit is supplied without venting materials (C63).

Concentric flues

It is **not** permitted to use more than the specified number of bends, even when the duct is shorter than the maximum length. A 45° bend is equivalent to a 90° bend.

Parallel flues

- The maximum permissible length should be reduced by the equivalent length of each bend. (Note: for a parallel installation this means that 3 changes in direction amount to 6 bends (3 in the supply duct and 3 in the flue).
- The maximum length also applies if a parallel installation has different supply and flue duct lengths (B23, C53).
- Combined flues (C43) shall be fitted with a condensate drain.

Note: horizontal flue runs must be installed with a fall of at least 5 mm per metre.

Minimal space for wall duc	©100/150 8 (mm)	09 35 Ø100/150
V	550	550
W	790	790
Х	2335	2335
Y	1475	1475
Y *	1025	1025
Minimal space for roof duc	t (mm)	
V	1500	1500
W	1035	1035
Х	3585	3585
X **	2520	2520
Y	1415	1415
Y **	465	465

Distance without concentric pipe between bend and wall duct.
 ** Distance without concentric pipe between appliance and roof duct.



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