

Anaesthetic Gas Scavenging System - 50Hz & 60Hz HTM02-01/HTM2022/ISO7396-2/AS1896

SPECIFICATION

Anaesthetic Gas Scavenging System

The Anaesthetic Gas Scavenging (AGS) System shall comply with HTM02-01, HTM2022, AS2896 and either EN ISO 7396-2 or BS 6834. GMDN code(Term): 36696 (Anaesthetic Gas Scavenging System), is classified as class I according to EU MDR. EU MDR (Medical Device Regulation EU 2017/745) repeals MDD (Medical Device Directive 93/42/EEC) since May 26th, 2020.

The AGS system shall be a dedicated, specifically designed active extraction and disposal system for waste anaesthetic gas. It shall provide a maximum flow rate of 80 l/min (EN ISO 7396-2) or 130 l/min (BS 6834) with a 1 kPa resistance to flow, and a minimum of 50 l/min (EN ISO 7396-2) or 80 l/min (BS 6834) with a 2 kPa (EN ISO 7396-2) or 4 kPa (BS 6834) resistance to flow at each terminal unit, irrespective of the number of terminal units in use. The AGS system shall use dedicated radial blowers in a simplex or duplex configuration. The AGS pump assemblies shall be skid mounted and included on the skid shall be the simplex or duplex pump(s), control unit(s), moisture drain flask and flexible connector(s) to connect the plant to the pipeline. Each pump shall include an electric motor and directly coupled impeller assembly. Impeller bearings in the pump(s) shall not require lubrication. The pump(s) shall be air cooled and rated for continuous operation.

Vacuum regulation

A vacuum/flow regulating valve shall be provided and positioned at the pump, comprised of a spring-loaded plate valve and inlet filter. The plate valve shall control air ingress into the pipeline system, thereby controlling the vacuum level within. The vacuum/flow regulating valve shall ensure a maximum vacuum of 200 mbar below atmospheric pressure is not exceeded and shall be factory preset at 150 mbar.

An air inlet filter shall be provided for further protection against dirt ingress into the pump.

The vacuum relief valve also ensures that enough flow passing through the blower for cooling.

Control System

All control and status indication circuitry shall be limited to 24V a.c. A green "MOTOR RUN" and a red "SYSTEM FAILED" indicators shall be fitted to the control panel on Simplex configuration. A green "POWER ON", an amber "STANDBY RUN" and a red "SYSTEM FAILED" indicators shall be fitted to the control panel on Duplex configuration.

The pumps (or each pump for duplex configuration) shall be provided with a "PUMP MODE SELECT" switch with "HAND" and "AUTO" positions incorporated into the plant control unit to enable the pump to be run continuously (in "HAND" operation) or automatically (in "AUTO" operation) when required by the plant control unit.

Blower motor shall also be equipped with the thermal protection by means of the overload relay with a manually reset function.

Pressure at the pipeline interface shall be continuously monitored by a pressure switch with diaphragm sensing element and shall be adjustable between -25 and -100 mbar gauge pressure and shall be factory set to -65 mbar gauge pressure.

Duplex configuration provides continuity of supply in single fault condition. If the duty blower fails or is unable to cope with the system demand, the standby blower shall be called to operate and a 'STANDBY RUN' indication shall illuminate on the plant control panel and each remote start switch. When duty blower can meet the system demand, standby blower will stop running automatically. If both blowers fail or the system is otherwise unable to maintain a pipeline vacuum level above the pressure switch set point, a "SYSTEM FAILED" indication shall be initiated.

The vacuum level at the plant inlet shall be displayed on a pressure gauge mounted on the plant control unit.

Building Management System Contacts

Volt free relay output terminal for replicating alarm conditions to BMS shall be available in standard configuration.

Unique Selling Proposition

- 1 **Quick onsite installation:** Accessible mounting holes on the skid mounted system accompanied by interconnecting copper pipework provides an easy-to-install compact solution.
- 2 **Assured reliability:** The robust pumps on the system come factory pre-piped, wired and tested.
- 3 **Precise vacuum regulation:** When the vacuum levels are too high the vacuum relief valve releases atmospheric air to purge throughout the system that safeguards a desired vacuum level in the pipeline and provides cooling of the pump.
- 4 **Clear status indication:** Through its easy-to-read vacuum gauge you can monitor an accurate readout of the vacuum level in your pipeline.
- 5 **BMS as a standard:** The Building Management System (BMS) connection is available as standard on your AGSS, which allows for additional comprehensive remote monitoring of your system.
- 6 **Service friendly design:** Easy access to the inlet filter and duty pumps selector keep your maintenance time to a minimum. Pre-greased bearings require no intervention for complete lifetime of the system.
- 7 **Trouble-free testing:** The integrated vacuum gauge and manual mode functionality will facilitate onsite testing procedures.



Anaesthetic Gas Scavenging System Selection Table

AGS Simplex 50 Hz

Model Name	AGS-260-S/1	AGS-520-S/1	AGS-260-S/3	AGS-520-S/3	AGS-1300-S/3	AGS-1560-S/3	AGS-2080-S/3	AGS-2860-S/3
Part Number	4109001820	4109001821	4109001800	4109001801	4109001802	4109001803	4109001804	4109001858
Configuration	Simplex	Simplex	Simplex	Simplex	Simplex	Simplex	Simplex	Simplex
Power supply	230V1PH	230V1PH	400V3PH	400V3PH	400V3PH	400V3PH	400V3PH	400V3PH
FLC/Pump (A)	2.3	7	1.3	1.3	5.5	5.5	5.5	5.5
Motor Start current (A)	17	36	10	10	23	23	23	23
Motor Plate (kW)	0.55	0.94	0.55	0.55	2.2	2.2	2.2	3
Min. cable size (mm²)	2.5							
Motor rated fused supply/pump(A)	16							
Noise level/pump@1m dB (A)	53	55	52	55	64	64	68	68
Flow(l/min)	260	520	260	520	1300	1560	2080	2860
Connection size OD (mm)	42				54			
Exhaust Muffler option number	4109003961				4109003960			
Packaging L*W*H (mm)	596*508*1188							
Weight (kg)(Incl Package)	80	80	80	80	95	95	100	100

AGS Simplex 60 Hz

Model Name	AGS-260-S/1	AGS-520-S/1	AGS-260-S/3	AGS-520-S/3	AGS-1560-S/3	AGS-1820-S/3	AGS-2600-S/3
Part Number	4109001854	4109001855	4109001834	4109001835	4109001836	4109001837	4109001838
Configuration	Simplex	Simplex	Simplex	Simplex	Simplex	Simplex	Simplex
Power supply	220V1PH	220V1PH	380V3PH	380V3PH	380V3PH	380V3PH	380V3PH
FLC/Pump (A)	2.8	2.8	1.6	1.6	6.6	6.6	6.6
Motor Start current (A)	18	39	11	11	25	25	25
Motor Plate (kW)	0.63	1.1	0.63	0.63	2.55	2.55	2.55
Min. cable size (mm²)	2.5						
Motor rated fused supply/ pump (A)	16						
Noise level/pump@1m dB(A)	53	55	52	55	64	64	68
Flow(l/min)	260	520	260	520	1560	1820	2600
Connection size OD(mm)	42				54		
Exhaust Muffler option number	4109003961				4109003960		
Packaging L*W*H (mm)	596*508*1188						
Weight (kg)(Incl Package)	80	80	80	80	95	95	100

Notes:

- Noise levels are sound pressure level according to DIN EN 21680 , measured at a distance of 1 meter, an average suction pressure and piped connections.
- Service connections are copper to BS EN 13348 and relate to the external pipe diameter.

AGS Duplex 50 Hz

Model Name	AGS-260-D/3	AGS-520-D/3	AGS-1300-D/3	AGS-1560-D/3	AGS-2080-D/3	AGS-2860-D/3
Part Number	4109001805	4109001806	4109001807	4109001808	4109001809	4109001859
Configuration	Duplex	Duplex	Duplex	Duplex	Duplex	Duplex
Power supply	400V3PH	400V3PH	400V3PH	400V3PH	400V3PH	400V3PH
FLC/Pump (A)	1.3	1.3	5.5	5.5	5.5	5.5
Motor Start current (A)	10	10	23	23	23	23
Motor Plate (kW)	0.55	0.55	2.2	2.2	2.2	3
Min. cable size (mm ²)	2.5					
Motor rated fused supply/pump (A)	16					
Noise level/pump@1m dB (A)	53	55	64	64	68	68
Flow(l/min)	260	520	1300	1560	2080	2860
Connection size OD (mm)	42		54			
Exhaust Muffler option number	4109003961		4109003960			
Packaging L*W*H (mm)	950*620*1268		1250*720*1787			
Weight (kg)(Incl Package)	145	145	185	185	195	195

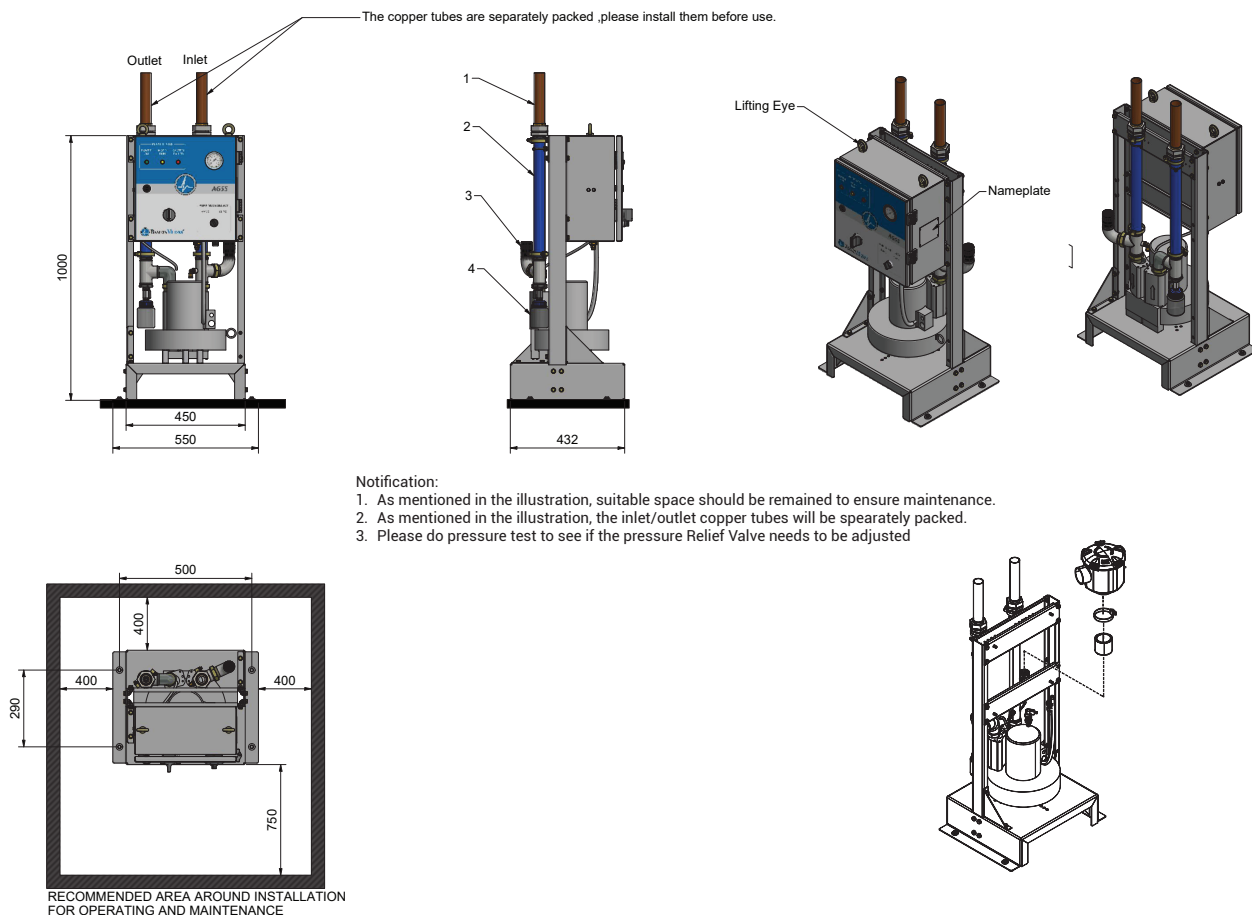
AGS Duplex 60 Hz

Model Name	AGS-260-D/3	AGS-520-D/3	AGS-1560-D/3	AGS-1820-D/3	AGS-2600-D/3
Part Number	4109001839	4109001840	4109001841	4109001842	4109001843
Configuration	Duplex	Duplex	Duplex	Duplex	Duplex
Power supply	380V3PH	380V3PH	380V3PH	380V3PH	380V3PH
FLC/Pump (A)	1.6	1.6	6.6	6.6	6.6
Motor Start current (A)	11	11	25	25	25
Motor Plate (kW)	0.63	0.63	2.55	2.55	2.55
Min. cable size (mm ²)	2.5				
Motor rated fused supply/pump (A)	16				
Noise level/pump@1m dB (A)	53	55	64	64	68
Flow(l/min)	260	520	1560	1820	2600
Connection size OD (mm)	42		54		
Exhaust Muffler option number	4109003961		4109003960		
Packaging L*W*H (mm)	950*620*1270		1250*720*1787		
Weight (kg)(Incl Package)	145	145	185	185	195

Notes:

1. Noise levels are sound pressure level according to suction pressure and piped connections.
2. Service connections are copper to BS EN 13348 and relate to the external pipe diameter.

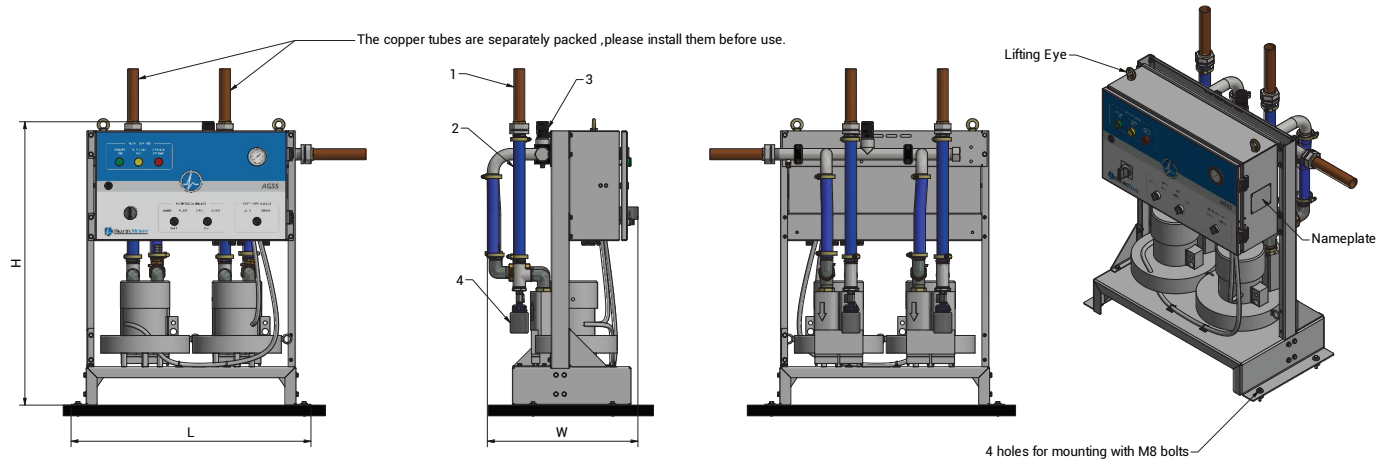
Typical AGS Pump Assembly Layouts Simplex Pump Assembly



Reference Number	Description
1	Copper Coupling
2	Flexible Hose
3	Relief Valve
4	Drain bottle

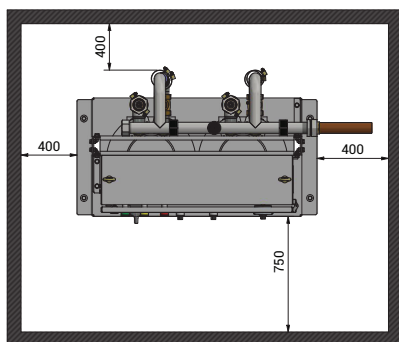
Options	Part Number
Inlet Filter (AGS260-520)	4109 4012 31
Inlet Filter (above AGS520)	4109 4012 32

Typical AGS Pump Assembly Layouts Duplex Pump Assembly

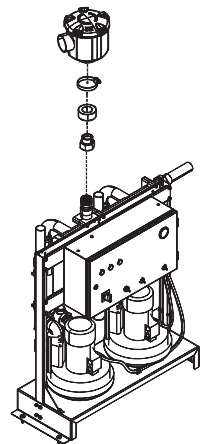


Notification:

1. As mentioned in the illustration, suitable space should be remained to ensure maintenance.
2. As mentioned in the illustration, the inlet/outlet copper tubes will be separately packed.
3. Please do pressure test to see if the pressure Relief Valve needs to be adjusted
4. The installation instruction is used for all duplex AGSS products



Spec	Installation Information			
	L/mm	W/mm	H/mm	Inlet/Outlet
AGS260D~AGS520D	875	550	1050	OD42
AGS1300D~AGS2860D	1135	610	1250	OD54

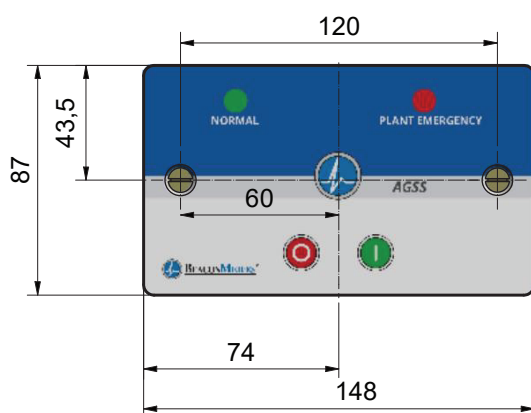
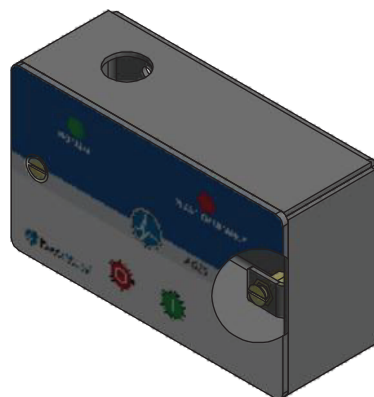


Reference Number	Description
1	Copper Coupling
2	Flexible Hose
3	Relief Valve
4	Drain bottle

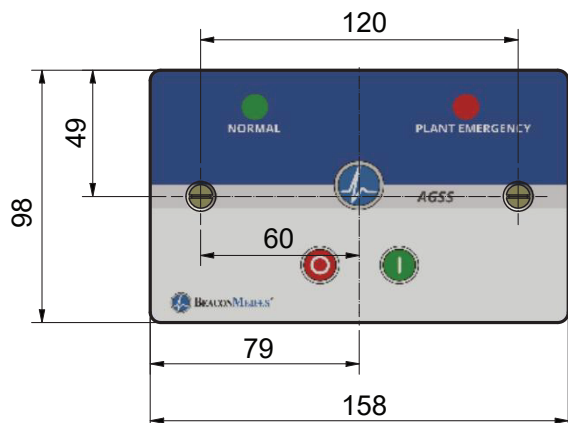
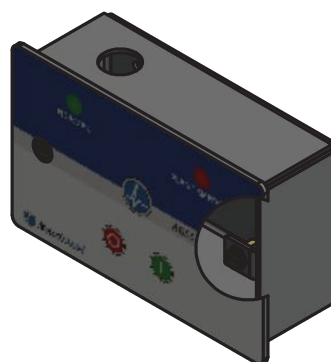
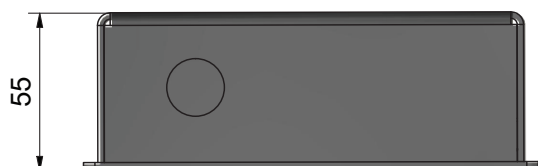
Options	Part Number
Inlet Filter (AGS260-520)	4109 4012 31
Inlet Filter (above AGS520)	4109 4012 32

Remote panel for Simplex AGSS

Surface Backbox



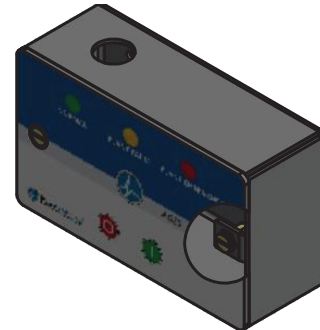
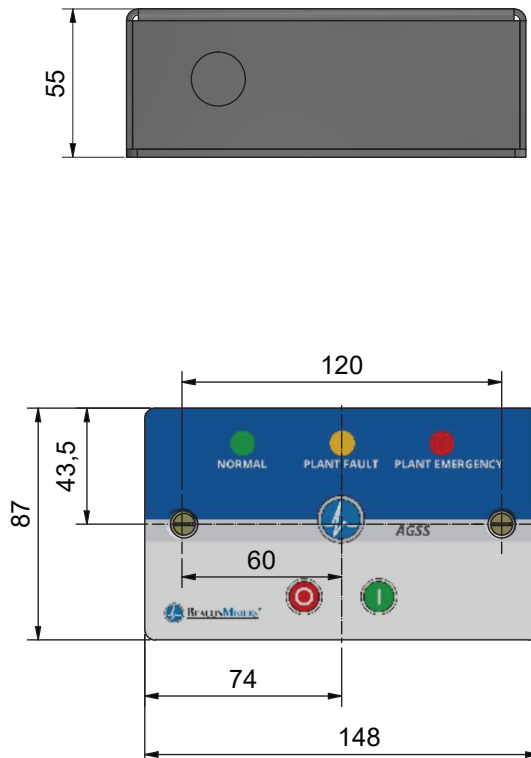
Flush Backbox



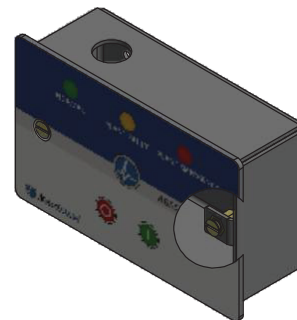
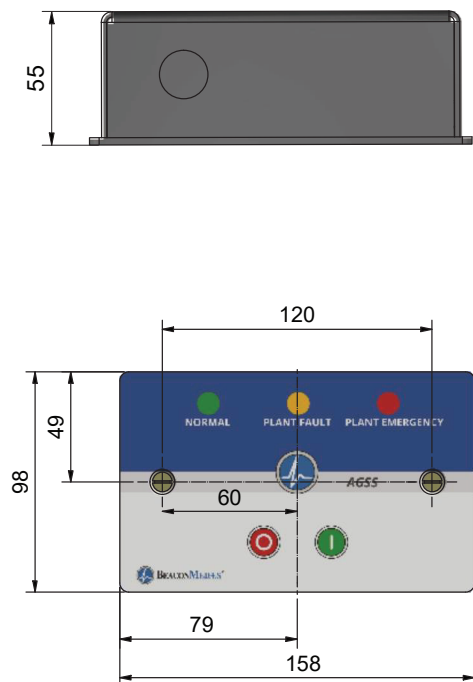
Description	Partnumber
Flush Backbox	4109005014
Surface Backbox	4109005015

Remote panel for Duplex AGSS

Surface Backbox



Flush Backbox



Description	Partnumber
Flush Backbox	4109005016
Surface Backbox	4109005017

