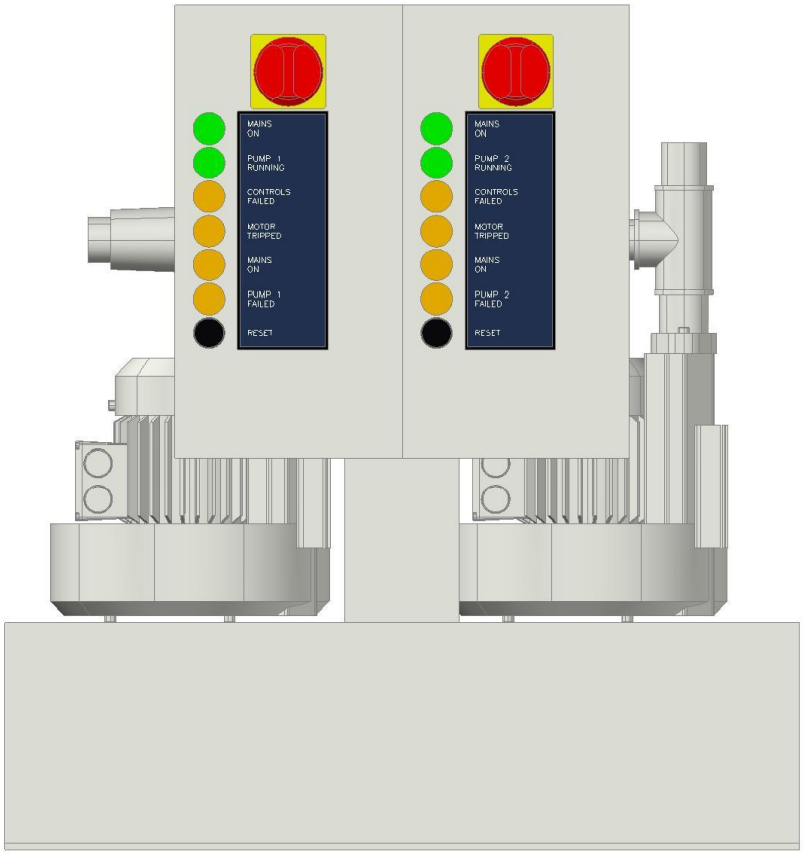
Technical Specification

Agss Plant



Product Description

Active anesthetic gas scavenging systems should be designed to safely remove exhaled anesthetic agents from the operating environment and dispose of them to atmosphere, thus preventing contamination of the operating department and providing a safe and healthy workspace for the personal. AGSS design should be dependent upon flow rate and pressure drop characteristics of the individual components of a systems, it is essential that terminal units, remote controls and pump units.

The anaesthetic gas scavenging system (AGSS) shall comply with United Kingdom Department of Health (DoH) HTM02-01, HTM2022 and EN ISO 7396-2 Medical Gas Pipeline System. The AGSS shall be a dedicated, specifically designed active extraction and disposal for waste anaesthetic gas. It shall provide a maximum flow rate of 80 l/min with 1 kPa resistance to flow, and a minimum of 50 l/min with 2 kPa resistance at each terminal unit, irrespective of the number of terminals in use. The AGSS

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system shall use dedicated radial blowers in a simplex or duplex configuration. The AGSS pump assemblies shall be skid mounted and included on the skids shall be the simplex or duplex pump(s), motor control unit(s), with starter/isolator, moisture drain flask and flexible connector(s) to connect the plant to the pipeline system. Each pump shall include an electric motor and directly coupled impeller assembly. Impeller bearings in the pump(shall not require lubrication. The pump(s) shall be air cooled and rated for continuous operation.

Duplex AGSS System with twin die cast aluminum side channel pumps Air cooled electric motor direct coupled impeller assembly of 3phase 2500 Lpm 2.2kw capacities each with built in flow indication and pressure regulation valve. Each pump shall include a swing no spring type non-return valve to enable safe and efficient maintenance of 1 pump while the other pump is in service.It should be mounted on a single frame with a central control panel and separate warning label.

The AGSS Plant is intended for use with terminal units complying with BS 6834 which have a maximum resistance to flow of 70 mbar at 130 l/min

Vacuum/Flow Regulating Valve

A vacuum/flow regulating valve shall be provided and positioned at the pump, comprised of a spring loaded plate valve and inlet silencer. The valve shall be changeable with the pipeline inlet in order to provide flexibility on site. The plate shall control air ingress into the pipeline system, thereby controlling the vacuum level within. An optional air inlet filter shall be available should the air quality be poor/dusty offering further protection against dirt ingress into the pump. Additional in line vacuum/flow regulating valves may be installed if required and shall be determined by the pipeline designer. The vacuum/flow regulator shall ensure a maximum vacuum of 200mb below atmospheric pressure is not exceeded and shall be factory preset at 150mb.

Control system

Each motor control panel shall incorporate an emergency isolation switch which controls all electrical power to the exhauster unit and system indication lights. All control and status indication circuitry shall be 24V AC

A green normal indicator shall indicate the system is in a normal state.

An amber plant fault indicator will illuminate if a plant fault occurs

A red plant emergency indicator will illuminate if a plant emergency occurs

A light emitting diode indicating vacuum normal shall illuminate to indicate the vacuum state is normal.

For duplex AGSS plant a push button selector will select the duty pump by pressing the appropriate push button. A light emitting diode will indicate which pump has been selected.

A light emitting diode will illuminate if a fault occurs with the duty pump.

Volt free contacts are available for remote status indication to BMS alarm

Installation

AGSS plant shall be floor mounted in a adequately ventilated area at least 250mm away from any wall to ease any further maintenance. Avoid obstructing the flow of cooling air to the fan end of the motor. The equipment should not be operated in ambient temperatures exceeding 40̊C.
The AGSS plant requires a 3 phase supply. This should be supplied via a local distribution board and be suitable for the rating of the pump. It is advisable to keep pipe runs as short as possible avoiding unnecessary pipe fittings. Where long or tortuous pipe runs are unavoidable, consideration should be given to increasing the pipe diameters.

Mechanical
Secure the base plate to the floor using suitable fixings. The mounting plate holes provided in the base are Ø12mm. Where possible mount the AGSS plant on a plinth.
Connect the inlet pipework and exhaust pipework to the connections provided.
Exhausts should be run as directly as possible to atmosphere and terminate in an elbow pointing downwards to protect against the ingress of water. Avoid air intakes for air conditioning, ventilation systems and windows.
Check the condensate drain flasks are fitted.

Electrical
A Suitably sized wall mounted isolator and fuses should be supplied by the electrical contractor local to the pump. Connect the electrical power supply from the wall mounted isolator onto the bus-bar. (3 phase only) Neutral connects to a black terminal din rail mounted in the AGSS plant control box. Connect the wiring for AGSS remote switch(es) into the terminal block located in the AGSS plant control box

Connect the wiring to the terminal blocks provided on the AGSS and fit the facia. Where the installation requires multiple AGSS remote switches these shall be daisy chained.

Pipeline Jointing
The AGSS plant copper stub pipe is manufactured to BS13348 for connection to the pipeline system and joints shall be made on site using copper, phosphorus and silver brazing alloy CuP282 to BS EN 17672:2010. Brazing should be carried out using oxygen free nitrogen as an inert gas shield to prevent the formation of oxides on the inside of the pipe. Copper pipes shall be cut square with the pipe axis using a sharp wheel cutter wherever possible, and be cleaned to get rid of any cuttings or burrs.

Quality
Pressure reducing stations are manufactured in the UK under BS EN 13485 Medical Devices: Quality Management Systems. All AGSS Plant is manufactured under strict quality control procedures to ISO 9001:2008.

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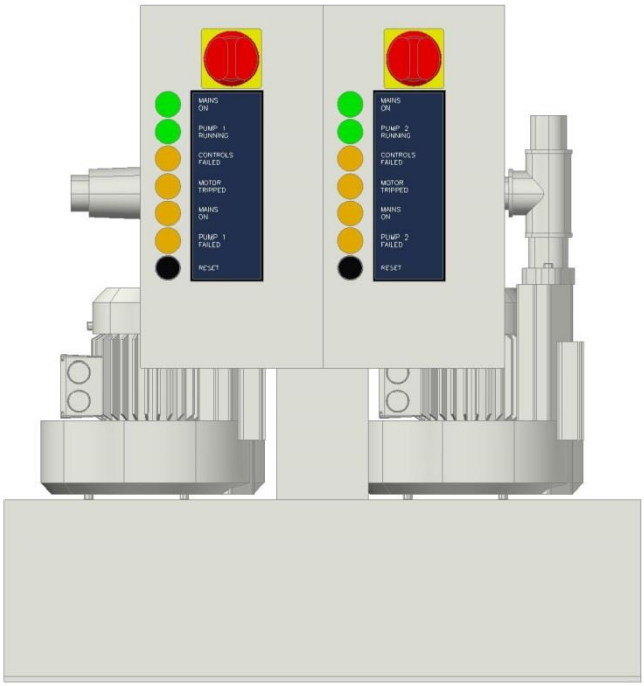
Duplex Plant Layout



Plant Sizes

Simplex AGSS Plant												
Product Code:	**Plant size**	**Dim A**	**Dim B**	**Dim C**	**Outlet qty**	**kW**	**Start type**	**Start (A)**	**Run (A)**	**Fuse (A)**	**Noise**	**Weight**
AGSS-S-130	**130 l/min**	**400 mm**	**400mm**	**900 mm**	**1**	**1 x 0.37**	**D.O.L**	**6**	**1**	**3**	**62 Db(A)**	**28 Kg**
AGSS-S-260	**260 l/min**	**400 mm**	**400mm**	**900 mm**	**2**	**1 x 0.37**	**D.O.L**	**6**	**1**	**3**	**62 Db(A)**	**28 Kg**
AGSS-S-390	**390 l/min**	**500 mm**	**450mm**	**1000 mm**	**3**	1 x 0.75	**D.O.L**	11.16	1.86	6	64 dB(A)	35 kg
AGSS-S-520	520 l/min	500 mm	450 mm	1000 mm	4	1 x 0.75	D.O.L.	11.16	1.86	6	64 dB(A)	35 kg
AGSS-S-1050	1050 l/min	550 mm	450 mm	1000 mm	8	1 x 1.1	D.O.L.	24	4	10	70 dB(A)	50 kg
AGSS-S-1500	1500l/min	550 mm	450 mm	1000 mm	12	1 x 1.1	D.O.L	24	4	10	70dB(A)	50kg
AGSS-S-2500	2500 l/min	550 mm	450 mm	1000 mm	16	1 x 2.2	D.O.L.	33	5.5	10	72 dB(A)	65 kg

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Duplex AGSS Plant												
Product Code:	**Plant size**	**Dim A**	**Dim B**	**Dim C**	**Outlet qty**	**kW**	**Start type**	**Start (A)**	**Run (A)**	**Fuse (A)**	**Noise**	**Weight**
AGSS-D-130	**130 l/min**	**400 mm**	**400mm**	**900 mm**	**1**	**2 x 0.37**	**D.O.L**	**6**	**1**	**3**	**62 Db(A)**	**28 Kg**
AGSS-D-260	**260 l/min**	**400 mm**	**400mm**	**900 mm**	**2**	**2 x 0.37**	**D.O.L**	**6**	**1**	**3**	**62 Db(A)**	**28 Kg**
AGSS-D-390	**390 l/min**	**500 mm**	**450mm**	**1000 mm**	**3**	2 x 0.75	**D.O.L**	11.16	1.86	6	64 dB(A)	35 kg
AGSS-D-520	520 l/min	1050 mm	400 mm	1200 mm	4	2 x 0.75	D.O.L.	11.16	1.86	6	64 dB(A)	90 kg
AGSS-D-1050	1050 l/min	1100 mm	400 mm	1200 mm	8	2 x 1.1	D.O.L.	24	4	10	70 dB(A)	120 kg
AGSS-D-1500	1500 l/min	1100 mm	400 mm	1200 mm	12	2 x 1.1	D.O.L	24	4	10	70 dB(A)	120 kg
AGSS-D-2500	2500 l/min	1100 mm	400 mm	1200 mm	16	2 x 2.2	D.O.L.	33	5.5	10	72 dB(A)	150 kg

Wiring Details

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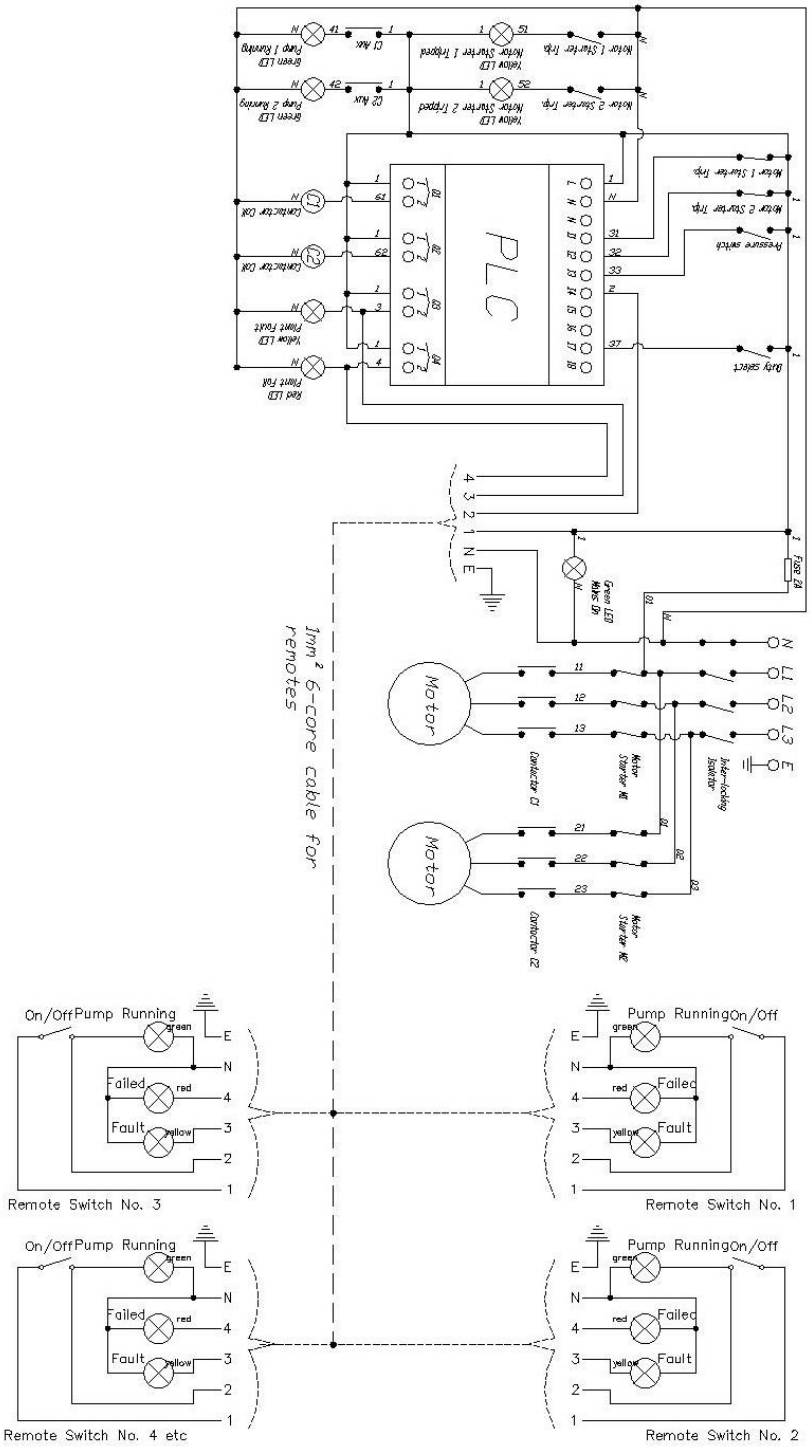

AGSS Remote Control Indicator

It should fully meet and comply with BS 5684, BS 6832 and HTM 2022, C11 standards.

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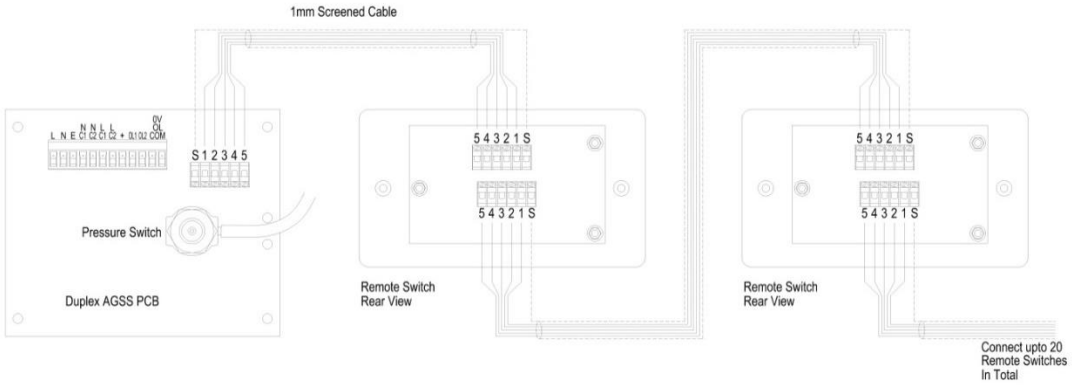
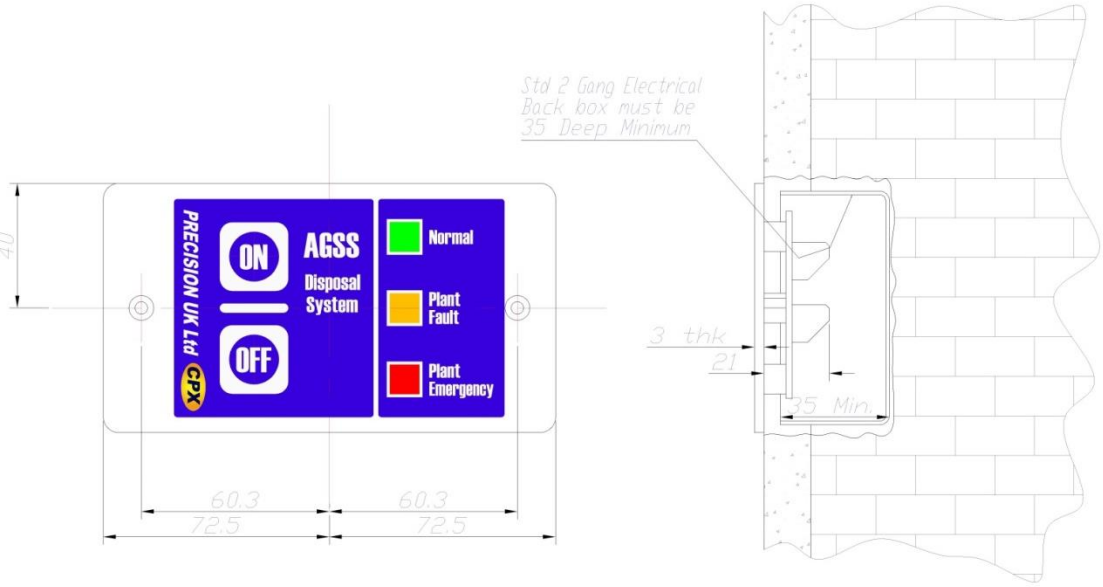
Connect the wiring for the AGSS Remote Switch(es) into the terminal block located in the AGSS Plant control box. Refer to the Remote switch connection diagram.

Connect the wiring to the terminal blocks provided on the AGSS Remote Switch and fit the fascia. Where the installation requires multiple AGSS Remote Switches, these shall be Daisy chained.





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